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Proceedings of
INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN PHYSICAL EDUCATION, FITNESS AND SPORTS SCIENCE - 2022
Organised by: Department of Physical Education Palamuru University,
In Association: International Federation of Physical Education Fitness & Sports Science Association, India
On 7th & 8th January 2023 at Palamuru University, Mahabubnagar, T.S. India

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MESSAGE

I am delighted to note that the Department of Physical Education, Palamuru University in association with association with International Federation of Physical Education Fitness & Sports Science Association, India (IFPEFSSA) is organising Two Day International Conference on "Recent Advances in Physical Education, Fitness and Sports Science – 2022" during January 7-8, 2023 and bringing out a souvenir to mark the occasion.

I convey my deep appreciation to the organisers for their initiative in hosting this collaborative international academic event at the university campus.

There is a felt need to reimagine and transform sports education in our country to churn out talented sports professionals of the future. It is time that educationists in this field pay attention to crafting curated curriculum to diversify sports learning and offer future ready innovative programs in sports science and management.

I eagerly look forward to this International Conference to come out with meaningful policy inputs in this direction.

I wish the program all success.

(P.SABITHA INDRA REDDY)

Dr. V. SRINIVAS GOUD
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MESSAGE

It gives me immense pleasure to know that the Department of Physical Education, Palamuru University in association with association with International Federation of Physical Education Fitness & Sports Science Association, India (IFPEFSSA) is organising Two Day International Conference on "Recent Advances in Physical Education, Fitness and Sports Science – 2022" during January 7-8,2023.

I wholeheartedly compliment the academic fraternity of Palamuru University for their concerted efforts in planning and organizing this important international scholarly event as an auspicious beginning of the New Year 2023.

I am equally happy to note that the newly established Department of Physical Education under the able guidance of the esteemed Vice- Chancellor has taken up such initiative in this regard.

We take note of striking paucity of skilled sports professionals well-versed in the science and practice of emerging sports disciplines. It is here that our higher education institutions should step in to rejuvenate sports education and advance the inherent prowess of our State of Telangana in sports.

I am sure the conference will have fruitful deliberations and throw light on the emerging perspectives in sports education.

I wish all success for the Two-Day International conference.

(Dr.V. SRINIVAS GOUD)

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Prof. R. Limbadri
CHAIRMAN

MESSAGE

I am very glad to note that the Department of Physical Education, Palamuru University, Mahabunagar is organizing a two days International conference on "**Recent Advances in Physical Education , Fitness and Sports Science -2022**" scheduled during 7th -8th January , 2023.

Physical Education is important for the growth of the student's confidence level, along with capability and competence to participate in several physical activities. Physical Education tends to become a crucial part of the student's entire life. A good quality curriculum of Physical Education ensures that the students can perform many types of physical activities smoothly while enjoying at the same time.

My best wishes to the faculty of the Department of Physical Education, Palamuru University, Mahabunagar and wish this International conference a grand success.

A very happy and prosperous new year in 2023.

(PROF. R. LIMBADRI)

PROF. L.B. LAXMIKANTH RATHOD
VICE-CHANCELLOR

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MESSAGE


VICE-CHANCELLOR

It is my pleasure that, Palamuru University is organizing an **"International Conference On Recent Advances in Physical Education, Fitness and Sports Science – 2022"** on 7th & 8th of January, 2023 at Palamuru University Campus, under the aegis of International Federation of Physical Education Fitness & Sports Science Association, India.

This conference is planned in order to give an opportunity to the Physical Education Professionals, Fitness & Sports Science experts to share their experiences and young researchers to contribute papers on various themes like, Physical Education, Sports Psychology, Sports Science, Sports Training, Yoga, Fitness, Wellness, Combat sports, Bio Mechanics, Sports Coaching, Sports Law, Sports Sociology, Sports Medicine, Exercise Physiology, Sports Injury, aging, Scientific Exercise Prescription and Physical Fitness, Psychological Interventions, Sports Performance and other related areas etc.

Eminent Scientists, Researchers, and Sports Administrators in various fields from the countries of, Philippines, Malaysia, Indonesia, Saudi Arabia, Sri Lanka and prominent personalities in the field from India will be participating in this International Conference.

I am very delighted to know that the proceedings of this International Conference will be brought out as a Souvenir. The deliberations of the conference during different sessions and interaction of the participants with the speakers will be benefited by all those who are attending this conference.

I am sure that, this Conference will throw light on the latest developments on various Sub Themes of the Conference which will go a long way for the cause of Physical Education, Sports and Allied Sciences.

[Prof. L. B. Laxmikanth Rathod]

PROF. K. GIRIJA MANGATAYARU
M.Sc., Ph.D.

REGISTRAR

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MESSAGE

REGISTRAR

It is with great pleasure that, I invite you to attend the International Conference on "**Recent Advances On Physical Education, Fitness and Sports Science - 2022"** organized by the Department of Physical Education, Palamuru University. Sport, physical activity and play are outstanding tools to support peace and development, integrate marginalized and disadvantaged groups, promote gender equality and foster a more inclusive society for persons with disabilities.

This Conference will cover issues on Sport Science and Physical Education. It dedicates to creating a stage for exchanging the latest research results and sharing the advanced research methods. I appreciate the organizing committee for showing a keen interest in organizing a successful Conference and contributing new ideas and research findings.

I wish them for their endeavours to spread knowledge.

K. Girija

[Prof. K. Girija Mangatayaru]

International Federation of Physical Education, Fitness and Sports Science Association

Prof. Rajesh Kumar
President
International Federation of Physical Education, Fitness and Sports Science Association

Message

International Federation of Physical Education, Fitness and Sports Science Association with great pleasure extend the warmest greetings to the Organizers, Delegates and Speakers of the International Conference on Recent Advances in Physical Education, Fitness and Sports Science Organizing by Department of Physical Education, Palamuru University, Mahabubnagar, Telangana State, India in collaboration with International Federation of Physical Education, Fitness & Sport Science Association to be held on 7th and 8th January 2023.

This Conference will provide a platform to all the Physical Educational Professors, Sports Scientists, Sports Coaches, Sports Trainers, Physical Education Scholars, and other participants to share their views and promote the knowledge in the field of Physical Education and Sports Science at the International Level.I wish the Organizers a grand success.

Prof.Rajesh Kumar, President

.

PROF. K. DEEPLA
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MESSAGE

It is my pleasure that, we invite you to attend the International Conference on Recent Advances in Physical Education, Fitness and Sports Science -2022 organized by Department of Physical Education, Palamuru University, Mahabubnagar on 7th and 8th January, 2023 at University Campus in association with International Federation of Physical Education Fitness and Sports Science Association.

The two days International Conference will give an opportunity to the all Physical Education Professionals, Experts, delegate, research scholars and students friends to share their valuables experience on this two day international conference.

I am sure that, this two days international conference may give good platform to all the physical education and sports personalities to enhance their knowledge.

Prof. K. Deepla
Chairman
BoS in Physical Education
Palamuru University.

International Conference on Recent Advances in Physical Education, Fitness and Sports Science 2022

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Benefits of LAUGHTER as Non-Pharmacologic Intervention on Mental Health

Dr. Lim Boon Hooi

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Mental Health

Mental health is an inherent and vital element of overall health, which can be defined in at least three ways: (a) as the absence of disease: (b) as a state of the organism that allows the full performance of all its functions: (c) as a state of balance within oneself and between oneself and one's physical and social conditions (Bhugra, Till, & Sartorius, 2013). Which of these three definitions is used depends on the level to which the basic health needs are satisfied. The mentioned needs include food, shelter, survival, protection, society, social support, and freedom from pain, environmental hazards, unnecessary stress and from any part of exploitation (Uysal, Aydemir, & Genç, 2017).

The condition of mental health implicit that the individual has the ability to form and maintain loving relationships with others (Umberson & Montez, 2010), to perform in the social roles usually played in their culture and to manage change, recognize, appreciate and communicate positive actions and thoughts as well as to manage emotions such as sadness. Mental health gives an individual the feeling of value, control and understanding of internal and external operating. It is also involves feeling positive about oneself and others, feeling glad and joyful and loving. It is like mental illness which affected by biological, social, psychological and environmental factors. The individual at the core of functioning is encompassing by the social world, in the close world it will include family, kinship, employers, peers, colleagues, friends and, in the distal context, society and culture (Choudhry, Mani, Ming, & Khan, 2016).

Susceptibility to mental ill health, mental health reduction which include internal factors such as a lack of emotional resilience, poor self-esteem and social status, feeling trapped and helpless, and problems associated with sexuality or sexual orientation, isolation and poor integration (Bhugra et al., 2013). External factors contributing to this susceptibility have been outline as poor social conditions (housing, poverty, unemployment), discrimination or abuse, cultural conflict, stigma and poor autonomy, among other factors (Bhugra et al., 2013).

On the other hand, an individual in a situation of good mental health will have a strong sense of self and others; they will be able (and willing) to form positive relationships and yet be comfortable (Bhugra et al., 2013).

The key senses of mental health include trust, challenge, competency, accomplishment and humour, and the capacities that mental health offers include the ability to develop psychologically, emotionally, intellectually and spiritually; initiate, develop and sustain mutual emotionally satisfying relationships, also the ability to be aware of others and to empathize with them; and to use psychological distress as a development process and learn from it so that it does not hinder or impair further development (Bhugra et al., 2013).

Additionally, as the Mental Health Foundation noted that mental health is expounded by how individuals think and feel about themselves and their life, and that it affects how an individual copes and manages in times of adversity (Manwell et al., 2015). Mental health is seen as affecting one's abilities to function and make the most of the opportunities that are available, and to participate fully with family, workplace, community and peers. There is a close link between physical and mental health, as they affect each other directly and indirectly (Manwell et al., 2015).

Laughter

Laughter is indeed regularly perceiving as an expression of joy, happiness, or amusement. It typically happens in informal social situations, usually in the presence of a close friend, sibling, caregiver, or intimate (Ruch & Ekman, 2001). Other emotional states that give rise to laughter include scorn, embarrassment, and nervousness. It remains to be determined whether the laughter in these different states is morphologically different (Ruch & Ekman, 2001).

Also, laughter is a universal feature of human experience, transpire in all cultures and nearly all individuals throughout the world (Crowe, Allen, & Lehmann-Willenbrock, 2016). Laughter is a distinctive, stereotyped pattern of vocalization that is easily recognized and quite unmistakable (Ruch & Ekman, 2001). Although different cultures have their own norms concerning the suitable subject matter of laughter and the types of situations in which laughter is considered appropriate, the sounds of laughter are indistinguishable from one culture to another. Refining, laughter is one of the first social vocalizations (after crying) emitted by human infants (Scott, Lavan, Chen, & McGettigan, 2014).

Infants begin to laugh in response to the actions of other people at about four months of age, and cases of gelastic (i.e., laughter-producing) epilepsy in newborns indicate that the brain mechanisms for laughter are already present at birth (Scott et al., 2014). The innateness of laughter is further demonstrated by the fact that even children born deaf and blind have been reported to laugh appropriately without ever having perceived the laughter of others (Scott et al., 2014).

All of these lines of evidence suggest that laughter in humans are a product of natural selection (Yama, 2020). Laughter appears to have originated in social play and to be derived from primate play signals. It is viewed by evolutionary researchers as part of the nonverbal "gesture-call" system, which has a long evolutionary history, predating the development of language (Yama, 2020).

Laughter is therefore fundamentally a social behaviour: if there were no other people to communicate to, we would not need laughter. This is no doubt why it is so loud, why it comprises such a distinctive and easily recognized set of sounds, and why it rarely occurs in social isolation (Scott et al., 2014). More recently, researchers have suggested that the purpose of laughter is not just to communicate that one is in a playful state, but to actually induce this state in others as well (Scott et al., 2014). According to this view, the peculiar sounds of laughter have a direct effect on the listener, inducing positive emotional arousal that mirrors the emotional state of the laugher, perhaps by activating certain specialized brain circuits (Scott et al., 2014).

The psychological functions of laughter can be classified into three broad categories:
(1) cognitive and social benefits of the positive emotion of mirth, (2) uses of laughter for social communication and influence, and (3) tension relief and coping (Vaid, 2002). Regarding cognitive and social benefits of the positive emotion of mirth, in the past, psychologists tended to focus primarily on negative emotions like depression, fear, and hostility, and did not give much attention to positive emotions like mirth, joy, happiness, and love. More recently, however, psychologists have begun to investigate positive emotions, and this research is beginning to shed light on their functions. Laughter-related positive emotion of mirth is effective for accomplishing all three of these tasks in various types of relationships, including romantic partnerships, friendships, and group relations (Hofmann, Platt, & Ruch, 2017).

Pertaining to social communication and influence, when people engage in these sorts of humorous exchanges in their everyday lives, they often have some (perhaps unconscious) purpose or social goal beyond merely providing amusement and entertainment. Even when telling a joke or saying funny things to make others laugh, people also often have the underlying goal of impressing others with their wittiness and gaining attention, prestige, or approval (Hofmann et al., 2017).

Concerning to tension relief and coping, laughter has often been noted is its role in coping with life stress and adversity (Hofmann et al., 2017). Laughter provides a way for the individual to shift perspective on a stressful situation, reappraising it from a new and less threatening point of view. consequence of this humorous reappraisal, the situation becomes less stressful and more manageable(Hofmann et al., 2017). Also, the positive emotion of mirth accompanying laughter replaces the feeling of anxiety, depression, or anger that would otherwise occur, enabling the person to think more broadly and flexibly and to engage in creative problem solving (Hofmann et al., 2017).

Benefits of LAUGHTER as Non-Pharmacologic Intervention on Mental Health

Non-pharmacologic interventions are accepted as being an applicable process to lessen pain, stress, and anxiety. Non-pharmacologic interventions compass of superficial massage, breathing exercise, music therapy, yoga and spiritual practices (Lewis, Kohtz, Emmerling, Fisher, & McGarvey, 2018). Laughter therapy, one of the dominant non-pharmacological interventions, is a universal method to minimize stress and anxiety. From ancient times, laughter has been used to control cognitive behaviour to improve and manifest healthy physical, psychological, and social relationships.

Previous studies have reported that positive role of laughter in enhancing the quality of life (N. Akimbekov & M. Razzaque, 2021). Laughter therapy can be used for both preventive and therapeutic purposes; it can also be a clinical predictor of functional disability. As reported, an analysis of 14,233 elderly individuals (aged 65 years), selected for the 'Japan Gerontological Evaluation Study', a low frequency of laughter has shown to be linked to a higher risk of developing functional disability (Tamada et al., 2022); adjusting the potential confounders, the investigators reported an increased hazard ratio of functional disability among the individuals with decreased frequency of laughter. The results of that study identified that about 1.42 times higher risk of functional disability was noted among the individuals with low or no laughing habits (Tamada et al., 2022).

On top of that, there is a biological description of how laughter is reducing stress, anxiety, and depression. Laughter has been shown to deploy stress reducing effects by suppressing the bioactivities of epinephrine, cortisol, and 3,4-dihydrophenylacetic acid (a major dopamine catabolite) (Yim, 2016). Decreased neurotransmitter activities, including norepinephrine, serotonin, and dopamine are linked to depression, and laughter is shown to boost dopamine and serotonin activities (Yim, 2016). Emotion is an expression from the composition of the three monoamine neurotransmitters: norepinephrine, dopamine, and serotonin (Moncrieff et al., 2022).

Additionally, past research had proposed a three-dimensional model for monoamine neurotransmitters and basic emotions is suggested, where each basic emotion has its own concentration level of neurotransmitters (Lövheim, 2011). The model was based on detailed and extensive theory of basic emotions, where human emotions were divided into one neutral (surprise/startle), two positive (interest/excitement and enjoyment/joy), and five negatives (distress/anguish, fear/terror, shame/humiliation, contempt/disgust, and anger/rage) classifications, and further connects them with facial expressions, and posture as well as typical physiological manifestations (Gu, Wang, Patel, Bourgeois, & Huang, 2019). Another group of researcher proposed a "three primary colour model" of basic emotions: norepinephrine is in control of fear and anger emotions, joy is receded by dopamine, while punishment is receded by serotonin (Gu et al., 2019). Many follow-up studies have supported this emotion theory

and reported that three monoamines (as substrates) might play a central role in emotional expression, including laughter (Moncrieff et al., 2022).

Additionally, the laughter-induced deliver of endorphins can help in reducing depressed mood (N. S. Akimbekov & M. S. Razzaque, 2021). Without even pharmacological intervention, laughter therapy can physiologically lessen the pro-stress factors and increase the mood-elevating anti-stress factors to reduce the stress responses, including anxiety and depression (Bennett & Lengacher, 2009). Laughter can also aid muscle relaxation and increase circulation to reduce the physical symptoms of stress. Moreover, laughter is able to decrease pain sensation by clear the way for synthesis of natural painkillers. In addition, studies have shown that laughter can raise the tolerance of pain (Lapierre, Baker, & Tanaka, 2019).

Also, laughter has a wide range of benefits, ranging from increase cognitive functions to improve respiration to enhance pain tolerance threshold to reduce stress hormones, with cumulative effects being the improved psychological well-being (Yim, 2016). Hence, laughter therapy is used to augment psychosocial behaviours to improve the overall quality of life (Weinberg, Hammond, & Cummins, 2014). Depression is one of the frequently observed mental disorders, and clinical depression needs pharmacological intervention. Laughter can mitigate the adverse consequences of stress and reduce depression by releasing neurotransmitters (Farifteh, Mohammadi, Kiamanesh, & Mofid, 2014).

Majority of past studies found that laughter interventions were reported to remarkably reduce depression and anxiety levels, along with an increase in better quality of sleep; the benefits on depression were more pronounced with long-term laughter intervention (Zhao et al., 2019). Also, laughter therapy program ushers to reduced anxiety and insomnia among the elderly participants, with the resultant effect being the overall improvement of the general health (Nuraly S. Akimbekov & Mohammed S. Razzaque, 2021).

Conclusion

Laughter is a human blessing, and successfully using laughter to minimize short-term and long-term stresses can notably improve the quality of life (Zhao et al., 2019). Laughter is a non-invasive, cost-effective and easily practicable intervention that can be used as an effective complementary therapy to reduce the intensity of many mental illnesses (van der Wal & Kok, 2019). Hence, it materializes possible that maintaining an adequate nutritional balance through healthy eating habits, keeping an active lifestyle, through practicing laughter can help in reducing the stress in life.

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Mental Imagery for Enhancing Sports performance

Sr. BK. Vasantha Lakshmi

Executive Member, Brahma Kumaris - Sports Wing, Hyderabad

Abstract

Mental imagery is a power tool that can be utilized by sportspersons to enhance their performance. It is a dynamic, internal technique to enhance performance, sustain motivation, hasten recovery/rehabilitation, heighten skill learning ability. The process of mental imagery requires clear and vivid images in the mind, motion perspective, repetitions, completing sequence of actions, and associating emotions with the images in the mind. Using mind power, the athlete mentally rehearses and engage the senses, i.e., the sense of sight, sound, smell, touch, taste. With clarity and repetitions of the mental images, the subject can experience the activation of advanced sensory elements including, kinaesthetic senses, emotions, focus, behaviour, and imagery. Many real-life examples of elite-athletes have highlighted the role of mind power in to perform well under pressure, such as Michael Phelps and Lanny Bassham. The technique is effective amongst both elite and beginners. Along with enhancing the sporting skills, the practice when conducted along with positive affirmations leads to enhanced resilience and reduction of anxiety in the athlete. A conjunction of traditional meditation with the modern science of mental imagery is a balanced approach for an overall positive impact on an athlete's physical and emotional performance. As mind plays a vital role in achieving success in the field of sports, hence guidance on "mental workouts" including visualization and meditation, can help sportspersons develop their inner strength and enhance the on-field performance.

Introduction

Mental imagery, also known as visualization or mental rehearsal, is the technique of creating a perceptual experience (Kosslyn, Thompson et al. 2006, Pearson, Deeprose et al. 2013, Cumming 2022) in a multisensory way and processing those images without an external stimulus.(Di Corrado, Guarnera et al. 2020) It is well established that this technique benefits the athlete, from grassroots level up to elite sports personalities, to enhance performance, sustain motivation, hasten recovery/rehabilitation, heighten skill learning ability among many other applications (Mackenzie 2002). A key requirement for effectively using the mental imagery technique is knowing and using the power of the mind which influences the vividness of mental image and the level of engagement of different senses during the visualization exercise. These foundational skills can be effectively honed using the practice of meditation – which in its simplest form is the visualization exercise with a positive and spiritual outlook. Meditation is the ancient practice of channelling the inner energy with focus and positivity for a heightened conscious and resilience.

Purpose

Despite being least understood, the power of mind has been testified by scientists and exemplified in various professional domains including sports. Often mental imagery is considered a separate practice from meditation, however even in its simplest form meditation enhances control over thoughts and emotions and brings clarity in visualisation. Hence, we present an overview of the mental imagery technique in conjunction with the practice of meditation (Naragatti and Hiregoudar 2019).

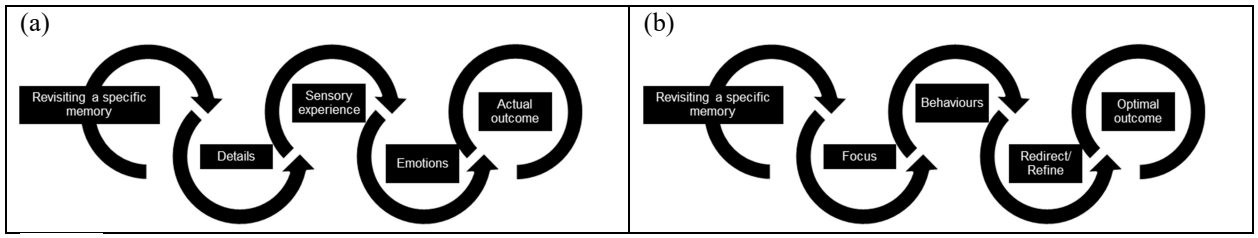
Methodology

To effectively benefit from the technique of mental imagery the subject must develop clarity and vividness of images in the mind, inculcate motion perspective, repeat it several times, process the complete sequence of actions, and associate emotions with that image. To enhance the vividness and experience of reality while performing the mental rehearsal the senses should feel engaged, i.e., the sense of sight, sound, smell, touch, taste.

With clarity and repetitions, the subject can experience the activation of advanced sensory elements including, kinaesthetic senses, emotions, focus, behaviour, and imagery.

For a sportsperson this technique can help correct skills or techniques by processing the mental imagery to remember a past event and visualizing the correction to realize the optimal outcome (**Figure 1**). To prepare for future outcomes the drill requires repetition by visualizing the oneself executing the outcome in the future as per the desired outcome. To reinforce the mental image and prepare the mind to execute the desired outcome, practice of positive affirmations is beneficial. Using imagery for sports performance alongside meditation, i.e., positive affirmations and experiencing a spiritual connection, the mind gets focused and relaxed at the same time.

Figure 1. Steps involved in mental imagery to (a) Remember a past event along with the actual outcome (b) Revisiting the past event to refine/redirect the action for a desired optimal outcome.



Results

Utilizing mind power is a practical demonstration of the age old saying of 'You are what you think'. Many real-life examples of elite-athletes have highlighted the role of mind power in to perform well under pressure. Some of the noted examples include the gold winning performance by Michael Phelps in 2008 Beijing Olympics, in the 200-meter butterfly event. As his goggles leaked, he relied on the feel of his imagery to know where he was and when and how to stretch for the finish (Srivastava 2022).

Another example which highlights the role of mental rehearsals during rehabilitation or recovery when on-ground training may not be feasible. Olympic gold medal winner, Lanny Bassham shared post his winning performance in the Seoul world championships, that when he could not go to the shooting range he would simulate the shooting experience for 2 to 4 hrs in a spare bedroom, using a technique called 'dry firing' (Martelli 2019).

These real-life examples corroborate the research studies undertaken to understand the role of imagery in enhancing sports performance. In the past it was stated that mental imagery may only skilled athletes (Smith 1987), however recent studies have established benefit of improving performance even in beginners. As reported in a study amongst golf beginners it was observed that the group that trained the shots both physically and mentally performed notable better than the group which only practiced physically (Brouziyne and Molinaro 2005).

It has been reported that having a positive outlook affects the overall impact mental imagery.(Smith 1987, Behncke 2004) In this context the role of positive affirmations and meditation is crucial along with the visualization aspect when training for mind power. Additionally, it is noted that meditation gradually reduces stress, anxiety, and other negative emotions significantly over time hence (Baltzell and Akhtar 2014, Das and Pandey 2020).

Discussion

The abundant mind power available in an individual is often drained due to mood swings, experiencing discouragement, low self-esteem, over-confidence, lack of work-life balance etc., and severely affects the sports performance. Furthermore, mind power goes beyond the glamour of Sports as it impacts every aspect of the life. With proper training this vital source of energy can be accessed.

Meditation is a proven natural and effective way of channelizing mind power. It is a skillful process of channelizing the thought energy towards positivity, discipline the mind, relax it and rejuvenate it for optimal physical, emotional, social or intellectual performance..

Conclusion

Mind plays a vital role in achieving success in the field of sports. By harnessing the mind power using guided "mental workouts" including visualization and meditation, the inner strength can be developed, and a sportsperson can effectively enhance the on-field performance.

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Importance of Sports Physiology in Physical Education

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Importance of sports physiology: Exercise physiology research has identified important effects of exercise on the bodys systems tissues and cells. The performance of an athlete can be improved by understanding the effect of exercises on various body parts of the athlete. a Provide knowledge about the functions of various organs. b It helps in prevention of sports injuries. c Helpful for rehabilitation. d Helpful in selection of sports. Helpful in preparation of training programme. Helpful to know about chemical changes during exercise.Sports physiology investigates the effect of exercise on the function and structure of the body. An athlete's performance is measured by a sports physiologist with the help of special tests and specifically designed technology. This provides coaches, fitness trainers, health educators, athletic trainers and exercise physiologists with valuable information that they can use to help their athletes to perform at their best level. Exercise Physiology has evolved from this study of anatomy and physiology, and examines how the body's structures and functions are altered when exposed to acute and chronic bouts of exercise. It is primarily the study of how the body adapts physiologically to the acute or short term stress of exercise, and the chronic or long term stress of physical training. Sports physiology further applies these concepts from exercise physiology specifically to training the athlete and enhancing athlete performance within a specific sport.

Exercise and sport physiology is about improving performance, by knowing how the body functions during exercise, and using scientific principles to allow your body to train better, perform better and recover quicker. Studies in exercise physiology help athletes achieve greatness e.g. it is now known that Olympic weightlifting and plyometric training are two methods to increase vertical jump height. The physiological response to exercise is dependent on the intensity, duration and frequency of the exercise as well as the environmental conditions. During physical exercise, requirements for oxygen and substrate in skeletal muscle are increased, as are the removal of metabolites and carbon dioxide. Chemical, mechanical and thermal stimuli affect alterations in metabolic, cardiovascular and ventilatory function in order to meet these increased demands.

Classification Of Joints: Fundamentals Of Anatomy, Physiology & Kinesiology
Immovable Joints

- These are also known as fixed joints because they are joined together through tissues and
- No movement is possible
- They are found in skull and face.

Slightly Movable Joints

- In these bones, the surfaces of bones are separated by some intervening substances.

- Only slightly movement is possible.
- They are found in spine and also known as cartilaginous joints because they are joined by cartilage.

Freely Movement **Joints**They are also known as synovial joints because each contains synovial fluid which helps in decreasing friction among joining of bones and they can move to a greater extent.

1. **Ball and socket joint:** These joints are formed in which the rounded head of one bone fits into the hollow of cup-shaped socket of another bone such as Shoulder and Hip joint.
2. **Gliding joint:** It allows for gliding movements between flat surfaces as the surfaces slide over one another and the movement depends on the ligaments such as joints of wrist (Carpal Bones) & the ankle (Tarsal Bones).
3. **Hinge joint:** In hinge joint one end of the joining bone is concave and the other is convex shaped. They joined in a way that the movement is possible in one plane. It is found in elbow joint.
4. **Pivot joint:** The movement is restricted to rotational only and one bones turns around on another bone. It is found in neck.
5. **Condyloid joint:** It is similar to hinge joint but it moves in two planes. It is found in wrist.
6. **Saddle joint:** The joining bones of this types of joint has opposing ends as concavo-convex that permit movements in all directions except axial rotation. It is found in thumb.

Properties of **Muscles**

All muscle cells share several properties:

Contractility

- The quality or capability of muscles to forcefully shrinking or shorten.
- Muscles carry out one highly specialized function that is known as contraction.
- Actin and myosin filaments are structure to produce muscular contraction.

Excitability

- The property of a muscle fiber is excitability that enables the muscles to respond to any kind of stimulation.
- The ability of a nerve or muscle cell to react to an electric stimulus is known as muscular excitability.

Extensibility

- It is the ability of the muscle to stretch maximally without tearing from normal resting length and beyond to a limited degree.

Elasticity

- It means that if muscles are extended, they shrink to their original resting length.
- The ability of a nerve or muscle cell to react to an electric stimulus is known as muscular excitability.

Functions of Muscles: Fundamentals Of Anatomy, Physiology & Kinesiology

1. **Skeletal Muscles Create Movement:** For all the larger of smaller movements, the central nervous system directs the muscles to contract and relax according to the need of the situation.
2. **Maintains Good Posture:** To keep the body in correct posture the muscles are attached with the bones through ligaments and tendons which also maintains the balance and coordination of the body.
3. **Pumps Heart:** Cardiac muscles are responsible for pumping the blood from the heart into the bungs to pick up oxygen, receiving blood back from the lungs and then pumping it to the various arteries of the body.
4. **Process Of Inhalation & Exhalation:** The whole respiration process depends on inhalation and exhalation which is done by intercostal muscles through this oxygen is provided to the body.
5. **Helps In Digestion:** Smooth muscles of organs like stomach and intestine help the digestive system in the process of digestion of food.

6. **Heat Generation:** It is very important in cold climates. Due to high metabolic rate muscles produce great amount of heat in the body.
7. **Protect Organs & Bones:** It protects the bones & organs by absorbing shocks and reducing friction in the joints such as muscles in the torso protect the internal organs at the front, sides, and back of the body.

Structure Of Muscles

Smooth, Non-Striated Muscles This type of muscle is innervated from autonomic nervous system and generally contracts involuntarily. They are generally found in the walls of digestive tract, trachea, bronchus etc. **Cardiac Muscles** It is found only in heart. Cardiac muscle works just like striated muscle fiber. It contracts rhythmically and automatically wherever striated muscle can contract voluntarily. **Striated Skeletal Muscles** The fibers of skeletal muscle are cylindrical in shape.

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Scincientic Concepts of Yoga Techniques

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Abstract

Yoga trains the body, mind & spirit to become strong and flexible, release stress and create inner peace, while developing a deep connection with ones spirit, intuition and personal power. All of these are essential for living a healthy balanced life. A regular yoga practice lasts from 30 minutes to 11/2 hours long. Many poses (yogasanas) are held from 1 to 5 minutes so that muscles and deep connective tissue are simultaneously stretched and strengthened giving them a rubber band memory not achieved in traditional exercise. Yoga postures also increase range of motion in joints and muscles. It stretches muscles, releasing tension and reducing build up of lactic acid. Holding the yoga postures builds stamina required for all in the life time.

As the practice of pranayama focuses on deep breathing while stretching, this diaphragmic breath not only helps with sinking into a deeper stretch but also circulates the body's lymph fluid which increases the bodies' capacity to cleanse and detoxify by 15%. By cleansing the body on a regular basis with this kind of breathing, the bodies' immune system is boosted, the blood is purified, and this results in increased health and vitality. The deep rhythmic breathing performed in yoga also creates and builds up one's life force energies or Prana. So, one actually creates more energy than is expended during a yogic session. The type of energy that gained is not from the caloric intake of our diet, but from the cosmic energy source. Ultimately it brings down the equilibrium state in the body and mind by enhancing the sympathetic and para-sympathetic activations in the body.

Finally the yoga routine winds down having stretched all muscle groups in a balanced way. Every session ends with a brief meditation to quiet the mind, thus the endocrinal system has been tones up positively. At the end a relaxation pose is being done for few minutes allowing the body to rest, renew, reset and integrate the yoga.

When we analyze the yogic techniques (Asana, Pranayama and Meditation) each one has its own scientific physiological background to synchronize the body, mind and soul. In this paper the science behind the yogic practices is discussed.

Introduction

In the twenty-first century yoga has lost some of its power in purpose. Yoga today has often become another form of exercise or fitness technique to increase one's flexibility through poses. Its purpose and intention for practice in the purest form and truest essence is often diluted if not completely ignored and forgotten.

This 5,000 year old ancient Indian system of education for the body and mind is a practical aid, not a religion or a cult. Although, yoga originates in India, it is a spiritual science that can benefit any cultural background as we must remember not to confuse religion with spirituality.

The principals of yoga educate one to relax the mind (meditation and breathing) so the body will follow, and to use the physical body by performing asanas in a way (breathing and stretching) to relax and open the mind.

Yoga is based on a system of asanas (a Sanskrit word meaning "steady pose"), which are exercises and poses performed while using conscious yogic nasal only breathing to improve flexibility of both body and mind, mental concentration, balance, and strength, as well as, balancing emotions, toning and rejuvenating the muscles and nervous system, improving circulation, and massaging the body's internal organs and glands.

Over the past several years yoga has gained acceptance among all and with very good reason; its effects are both physical and mental state of an individual. At the same time it has endless benefits including increased flexibility, strength, balance, prevention from sports injury and improvement in the existing sports injuries and general health too. Further yoga helps to increase lung capacity and function which is a key part of any endurance sport. But this isn't anywhere close to where the benefits end for on top of all the physical benefits it also teaches the art of relaxation and improves concentration and focus. Yoga teaches the practice of integrating the body and the mind.

The term 'yoga' is used to indicate both the 'End' as well as the 'mean'. In the sense of the 'End', the word 'Yoga' signifies 'Integration' at its highest level. All the means that subscribe to reach this goal also constitute yoga, in the sense of 'yukti' the means or technique. All the practices, whether high or low are calculated to help the progress of the aspirant towards such integration are together known by the name 'yoga'. Yoga is thus an integral subject, which takes into consideration man as a whole. It does not divide him into watertight compartment as body, mind and spirit etc.

The science of yoga proclaims that yogic techniques and practices aim at selective as well as wholesome shaping of human body and mind. Hence a selective package of yogic practices consisting Asana (Physical Postures), Pranayama (Breathing Practices) and Meditation (Mental Practices) was designed with performance norms intended to create a positive impacts among the practitioners.

Asana

According to traditional belief, Lord Shiva is said to have demonstrated 84 Lakhs of asanas, as many as are the living species, so as. However, a selective course of 15 to 20 asanas is sufficient to maintain or re-establish our perfect health and fitness as a whole. Here the schedule should include asanas in erect, forward & backward bends, sideways twist (left and right) of the spinal column.

The prescription of Yoga asanas also help to develop the control and concentration of the mind. Being able to hold a posture with steadiness, relaxation and comfort requires that a person is able to focus their mind for an extended period of time. This helps for developing strength and concentration in mind / body and is beneficial to playing sports at highly competitive levels. Swami Sivananda highlights this point, he highlights that steady and systematic practice of yoga will "make the mind very obedient and faithful" and make the practitioner "successful in every attempt".

Asana are those postures with dynamic moments oriented to create physical and physiological changes in the human system. It works on the principle of Sthiram-Sugam-Asanam (seat). Local compression of various structures affects the whole body during flexing and extending which in turn tunes the tissues locally so as to stimulate nerves, blood, lymph, endocrine organs and neural plexus. Thus the wide range of posturing, improving suppleness and flexibility in the body are achieved particularly toning up the nervous system. Functions of all vital organs, stimulation of glands and regulation of the blood flow are achieved by proper postures and the muscles in our body are thus firmed and strengthened.

Asana Practice

By flexing and extending the tissues locally so as to stimulate nerves, blood, lymph, endocrine organs and neural plexus. Thus the local compression of various structures affects the whole body. We are giving all possible movements to the body by making our body into different postures, and hold on those postures for some time, then relax the whole body. Thus the wide range of posturing, improving suppleness and flexibility in the body are achieved. Particularly toning up the nervous system, functions of all vital organs, stimulation of the glands, regulation of the blood flow are achieved by proper postures. The muscles in our body are thus firmed and strengthened.

Asanas also help to create harmony and balance between the mind and body and help to achieve a healthy body and stable mind, they are aids for controlling the mind through physical discipline. Through asana the functioning and efficiency of internal organs is improved and this consequently effects all other parts of the body in a positive manner. Cells are nourished and revitalized and the internal functioning of body organs is enhanced. According to Yogic authorities, "yogic exercises are mainly designed to keep the proper curvature of the spine and to increase its flexibility", they also state that "balancing asanas develop the function of the cerebellum, the brain centre that controls how the body works in motion, improve muscle coordination and posture including physical and nervous balance which helps to achieve grace and fluidity of movement."

Inverted asanas can be particularly beneficial to break bad habits and old patterns of behaviour, for example, an inefficient swimming stroke or volleyball swing. For a professional athlete wishing to optimize their performance, it is essential that they have the ability to change body movements and behaviours as required to maximize efficiency and effectiveness. Inverted asanas change the normal patterns (both the emotional and psychic state) throwing a new light on old patterns of behaviour and being. Inverted asanas can also help to improve health, reduce stress and anxiety and increase self-confidence.

Pranayama

Pranayama is the practice of breathing exercises with the three scientific phases namely Puraka (Inhalation), Kumbhaka (Holding the air in the lungs) and Rechaka (Exhalation) in a progressive manner that works centrally and the effects spread to the periphery, too. One must understand that the objective of pranayama is to affect the proper balance between Ida (Moon Breath) and Pingala (Sun Breath) nadis and to gain the physiological, spiritual upliftment through the attainment of light and knowledge from the sushumna nadi. From the physical point of view, a proper balance among the nadis ensures health, strength, peace and longevity. Pranayama have seasonal effects in its technique and practice. Hence the selection of pranayama for the practice schedule should be based on the seasonal requirements. During practice the three phases, inhalation, holding the breath and exhalation should be observed as 1:1:1 (Initial Stage) 1:2:2 (Intermediate Stage) and 1:4:2 (Advanced Stage) (Iyengar, 2001).

Sectional Breathing

- Abdominal breathing: As the diaphragm separating the Thorax from the abdomen descends during inhalation with the bulging of the abdomen, it increases the air-flow into the lower sections of the lungs. The rhythmic movement n the diaphragm massages the organs of the abdomen gently, and helps them to function normally. It promotes general circulation also.
- Thoracic breathing: the middle lobes are opened up fully by this type of breathing.
- Clavicular breathing: The sparingly used upper lobes of the lungs will be properly aerated by this breathing.
- Full-yogic breathing: The science of 'Working in Relaxation' & 'attention without tension' is imminent in Pranayama. We learn to work without getting tensed up, with any overtones, and over-reactions. With lesser energy expenditure, we enhance the efficiency. Slowing the breath by

systematic and gradual training of our respiratory system by various pranayamas does not turn us tamasic, but by reducing the overtones of Rajasic, makes us more Sattivk and more efficient.

Anuloma - Viloma Pranayama

This pranayama helps in clearing up the nasal passages. With regular and long practice, flow of breath through each of the nostrils becomes smooth and slow. This pranayama is very useful for nasal allergy, Deviated Nasal spectrum (DNS).

Chandranuloma–Viloma helps in increasing weight and Suryaanuloma-Viloma in reducing the obesity effectively. Cleaning of Chandra and Surya Nadis is the first step to bring the balance between the two Nadis. They lead towards unfolding of the inner layers of Consciousness.

Surya Bhedana, Chandra Bhedana & Nadi Shuddhi:

These THREE Pranayamas promote a balance between the Sympathetic Nervous System & Para sympathetic Nervous system. Metabolic rate is decreased as in all other pranayamas. Surya bhedana increases digestive power, soothes and invigorates the nerves, and cleans the sinuses. These pranayamas bring about a balance in Prana in the pranamaya kosa which is vital to spiritual growth. Thus the Concentration, Clarity of Mind, Memory, Intelligence Quotient and Creativity are enhanced by these pranayamas.

Surya Bhedana particularly for IQ (featuring the left brain), Chandra bhedana for development of creativity and intuition (featuring the right brain) and Nadi Shuddhi for the rest are well known benefits. The lop-sided growth of personalities can be effectively brought to a balance suitably by adjusting the practices of Surya Bhedana (CB) & Chandra Bhedana (SB) Pranayamas.

For e.g.: an artist, as a creative person, needs his critical faculty to be sharp and hence Surya Bhedana is prescribed more. Similarly, a highly analytical mind can be balanced by developing the 'heart' featured by love, affection, intuition, creativity etc practicing Chandra Bhedana Pranayama. Thus personality change can be brought about effectively. Steady systematic practice of Nadi Shuddhi (NS) Pranayama can bring balance – samatva-equanimity.

Kapalabhati & Bhastrika

Great freshness and agility are experienced in bhastrika. It is not only shattering of Tamas and stagnation (moving to Rajas) but also reduction of overtones and hypersensitivities to increase the functional efficiency of the cells. It is a fine practice to remedy some of the dangerous effects of kumbhaka practice if done wrongly. Bhastrika activate and invigorate the liver, spleen, pancreas and abdominal muscles. Thus digestion is improved, the sinuses are drained, the eyes feel cool and one has a general feel of excitement. The two effects of Kapalabhati & Bhastrika (KB) are; washing away of carbon-dioxide from the lungs & increased oxygen concentration in the lungs. It generates prana to activate the entire body.

Ujjayi

Ujjayi strengthens the muscles of the epiglottis which helps in reducing snoring. It helps in voice culture. This type of pranayama aerates the lungs, removes phlegm, gives endurance, soothes the nerves and tones the entire system. Ujjayi without retention, done in a rest position, is ideal for persons suffering from high Blood Pressure. Tonsillitis, sore throat, chronic cold and bronchial asthma are greatly reduced by Ujjayi. Hypersensitive throat, cough, excessive hiccups are also helped by practicing ujjayi.

Sukha Pranayama

This pranayama can work wonders in reducing the stresses and tensions; increasing memory, concentration power to improve the quality of life and to promote positive health. Sukha pranayama reduces the basal metabolic

rate, increases the vital capacity, strengthens the immune system and used under all conditions for rehabilitation. This pranayama is used even by cancer patients.

Cooling Pranayama

Sitali, Sitkari & Sadanta

All the Three pranayamas are helpful in relaxing the muscles, soothes the nervous system, eyes and the ears, and even to reduce the basal metabolic rate effectively. We feel light and fresh after performing these 3 pranayamas. The taste buds and *the mouth are sensitized and the vital capacity of the lungs enhanced. Allergies due* to cold can be effectively overcome by the prolonged practice of these pranayamas. These help in reducing the stresses and tensions effectively. Sadanta is useful for reducing problems of the teeth and gums- decaying teeth, toothache, pyorrhea etc. Sitkari is of great value for hypertension. `These pranayamas are beneficial in cases of low fever and biliousness. It activates the liver and the spleen, improves digestion and relieves thirst.

Swana Pranayama

This pranayama helps to release the carbon-dioxide more forcefully from the lungs. It also eliminates the toxins from the body, thereby increasing the level of energy in the system. It has a direct impact on the renal region and the kidneys because of the panting movement and expulsion of the sound 'Ha' on exhalation.

Savitri Pranayama

As we practice Antara Kumbhaka and Bahya Kumbhaka after inhalation and exhalation respectively, carbon-dioxide is released from the body; the blood is purified of toxins. It also induces a tranquil mind, clarity of thought and improves concentration. The flow of energy in the Ida & Pingala Nadis is balanced.

Naga Pranayama

This pranayama channelizes the pranic energy into the proper energy centers and this pranayama also increases the breathing capacity, expanding the thoracic region and keeping the lungs elastic.

Meditation

Meditation is a systematic method of mental practice that gives a complete mental, physical and emotional relaxation. Meditation is the art of relaxation and progressive freedom. It is the most beautiful experience man can have. He slowly gains awareness of everything his body, his mind, his conscious self. He is aware and watchful of himself in all situations and is thus able to respond to changing situations with ease and calm. The motionless, silence of sitting meditation requires only a little amount of oxygen. Thus during meditation respiration will become slower, smoother and rhythmic in nature. The following are some of the simplest techniques of meditation. *Silent meditation, Mantra meditation, Objective meditation and Breathing meditation.*

During meditation the following physiological changes occur,

- Heart beat and breathing rates slow down.
- Oxygen consumption and metabolic rate falls by 20 percentages.
- The blood lactate level drops. This level goes up with stress and fatigue.
- Skin resistance to electric current increases fourfold, a sign of relaxation.
- EEG readings of brain wave patterns shown increased alpha activity again a sign of relaxation.

Conclusion

Yoga is able to mobilize joints, stretch tissues and ligaments, tone muscles, bring flexibility to the spine and strengthen internal organs. Yoga exercises are based on the formula of stretching, relaxation, deep breathing, increasing circulation and concentration. As such, yoga is beneficial to a mankind as it enables them to strengthen their concentration ability, foster a calm and relaxed mind, enhance the mind / body connection allowing the person to have greater muscle coordination and fluidity of movement. Yoga is also beneficial to a professional people as it positively contributes to the health and vitality of the body, strengthens internal organs such as the heart, lungs and liver and helps to maintain fitness and agility. Yoga also helps to reduce stress and anxiety, cultivate self confidence and self-belief. All of these elements are pivotal to maintain good health and fitness.

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Circadian Rhythm (Biological Clock) and Yoga

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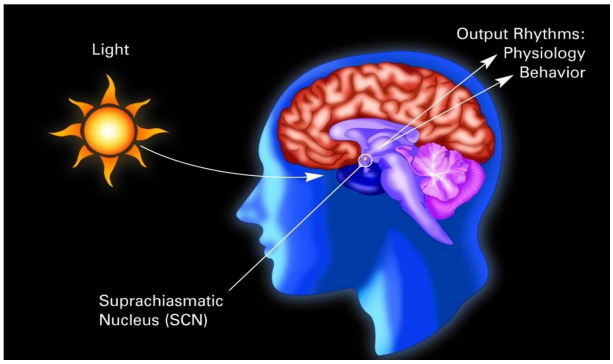
Humans are the products of nature. All life on earth (plants, animals and human beings) is tuned to the rotation of our planet and human evolution. Our internal time keeper helps a lotto synchronize with it. All living organisms have a biological clock to attune our physiologicalto the different phases of the day. This adaptation is called circadian rhythm. It is derived fromthe latin word 'Circa' meaning 'around' and 'dies' meaning 'day'. A circadian rhythm is a natural and internal process that regulates the sleep-wake cycle and repeats roughly every 24 hours. In the 4th century BC, Androsthenes, a ship Captain serving under Alexander the Great described the leaf movements if a tamarind tree. In the 13th century, observations of circadian process was mentioned in Chinese medical texts. US geneticists Jeffrey C.Hall, Michael Rosbash and Michael W.Young were awarded noble prize in 2017 for discoveries on biologicalclock. Suprachiasmatic nuclei (SCN) is the master clock in the brain that controls circadian rhythm. Every cell in the body contain a circadian clock particularly found in adrenal gland, oesophagus, lungs, liver, pancreas, spleen, thymus and skin. The whole coordination is linking up to pancreas, gut and hypothalamus. Period gene, timeless gene and double time gene contolSCN. PER, TIM are the proteins that regulate SCN. Cortisol, Serotonin and Melatonin the hormones control SCN.



Circadian rhythm regulates critical functions such as Wake and sleep; Blood pressure; Body temperature; Hormone levels; Eat and digest; The types of food we eat and in what quantity; Metabolism & its changes; Appetite (hungry); Thirsty; Bowel movements; Detoxification; Sex drive; Behavior; Mood; Anxieties

Circadian Rhythm	
TIME	**FUNCTIONS**
0:00	Midnight
2:00	Deepest Sleep
4:30	Lowest Body Temparature

6:45	Sharpest rise in blood pressure
7:30	Melatonin Secretion Stops
8:30	Bowel Movement likely
9:00	Highest Testosterone Secretion
10:00	High Alertness
12:00	Noon
14:30	Best Coordination
15:30	Fastest Reaction
17:00	Greatest Cardiovascular efficiency and muscle strength
18:30	Highest Blood Pressure
19:00	Highest Body Temperature
21:00	Melatonin secretion Starts
22:30	Bowel Movement Suppressed

Criteria

The rhythm has an endogenous free-running period that lasts approximately 24 hours; The rhythm exhibit temperature compensation; The rhythm are entrainable; Our wellbeing is affected by the mismatch between external environment and the internal biological clock; Disrupted biological clock is caused by many issues mainly physiological and psychological.

Symptoms

Fatigue, Insomnia, Disorientation

Mismatch between lifestyle and circadian rhythm leads to

Metabolic disorders (obesity, diabetes), Cardiovascular diseases, Cancer, Autism, Sleep disorders, Neuro degenerative diseases, Cognitive dysfunction, Depression, Bipolar disorders, Dementia etc.,

Causes upset our Circadian rhythm

Night shift work, Overexposure to artificial light, gadgets, screens, Frequent changes in routine bedtimes, Hormonal changes during menopause or pregnancy; Jet lag, Drugs and alcohol, Physical inactivity, Sedentary life, Improper diet pattern, Other external environmentalfactors

Remedies to reset Circadian Rhythm

Stabilized sleep, Wakeup routine, Eating dinner in time close to sunset, Eat only after sunrise, Timely and early breakfast is essential to avid an acidic environment, Expose more tonatural light, Stare at the rising or setting sun for at least 2-3 minutes, Shield yourself from artificial light, Balanced sattvic diet , Fasting, Music, Yoga and Meditation

Benefits

Quality oriented life, Increased life span

Eight observations we have to adhere as per yogic concepts:

1. Too much of talking or talking around

2. Continuous travel
3. Being highly mobile
4. Excessive sedentary habits
5. Consuming a heavy indigestible diet
6. Consuming unwholesome or incompatible food
7. Sleeping during the day

Excessive sexual activitie

PREVENTIVE AND REGULAR YOGIC PRACTICES

- **Suryanamaskar**

It is the king of yogic practices, the combination of asanas, pranayama, mantras and meditation; a dynamic meditation technique; good for all human systems. Bodyblossoms like lotus. It produces new nerve sheath.

Diaphragm contracts downwards; lungs get more oxygen; produces the effect of running and swimming (cardiovascular system)

- **Trikonasana**

Best therapeutic asana; Refreshes Kidney and Spleen.

- **Padahastasana**

Refreshes the spinal nerves; Strengthens digestive system; ward off excessive gas andbloating;

- **Parvatanasana**

Bathes the brain with blood; corrects the body posture and strengthens core muscles;

- **Halasana**

Refreshes brain and strengthens the abdominal organs

- **Dhanurasana**

It has innumerable benefits, body becomes slim; there won't be laziness; good for diabetes and menstrual disorders.

- **Ushtrasana**

It is the deepest backbend of all; has innumerable benefits; all human systems are activated; good for elders; activates kundalini sakthi; brain gets good blood flow.

- **Navasana**

Tones and strengthens the abdominal muscles

- **Ardha matsyendrasana**

  It has innumerable benefits; activates inner organs; frees from wrinkles; lower part ofthe abdomen is activated; awakens kundalini sakthi;

- **Paschimottanasana**

  It has innumerable benefits; increases vitality; cures impotence; leads to sex control;activates sushumna nadi; activates kundalini sakthi; good for hamstring muscles; it is sedative; good for hypertension.

- **Shashangasana**

It is good for diabetes, insomnia, back ache etc.,; good for reproductive systems andadrenal glands; brain is bathed in blood; it has calming and cooling effect.

- **Baddhakonasana**
  Stretches and strengthens the pelvic floor

- **Kapalbhati in Padmasana**
  Kapalbhati is a natural anesthesia; prevents old age.Padmasana destroys all diseases - HYP.

- **Bhastrika Pranayama in Vajrasana**
  It is more powerful; burns toxins; activates sushumna nadi; Nadis are purified;It is good for vata, pitta, kapha diseases and activates kundalini sakthi- HYP

- **Nadi Shodhana Pranayama in Padmasana**
  It has innumerable benefits; purifies blood and nadis; awakens kundalini sakthi;Siddhasana is good for moksha – GS. It gives direct energy from Mooladhara to Sahasrara chakra

- **Meditation**
  Meditation does by soul is for the purification of mind by its electrical activity; activates space elements; leads to thoughtless stage; blood flow increases; genes perfected;set right biological clock; Sukshma Dhyana is good - GS

BENEFITS OF SATTVIC DIET

Sattvic diet has more hesperidin's, polyphenols, flavanols, the health giving chemicalswhich have more antioxidants to avoid discomfort; Has more Phyto nutrients (Chemicals) andvitamins to flush out free radicals, the dangerous chemicals; Has low glycemic index which means it releases energy into blood stream perfectly with optimum level; Raises Basal Metabolic Rate (BMR) optimum; Nitro genesis takes place to produce new cells; Is a mood enhancer producing the natural hormone secretions such as dopamine, serotonin and melatonin; Provides ligands (special molecules) that 'turn on' disease fighting genes and 'turn off' those that cause disease;

"Yoga is the rhythm of the body, the melody of the mind, the harmony of the soul, creating the symphony of life" - Sri B.K.S.Iyengar

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A Comparative Study of Agility among the Handball Players and Volley Ball Players in Hyderabad District

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Abstract

The purpose of study was to find out the comparative of agility and physical fitness among the inter college boys handball players and volleyball players, Agility plays an important role in physical education activities, especially in such events as gymnastics, Diving, handball, pole – vaulting, hurdling, high jumping and in the maneuvering of the end and backs in handball, the agility is normally performed on the athletes regular playing surface and improved balance and coordination.

Introduction

Agility is defined as skill related components of physical fitness that relates to the ability to rapidly change the position of the entire body in space with speed and accuracy. Agility is interrelated with speed, strength and coordination agility is change of direction and quick starts and stops.

Physical fitness is the capacity of the person to function steadily and smoothly an individual's physical fitness depends on the coordinated functioning of the various physiological systems. Lateral polymeric jumps help build explosive power, balance and coordination. The physical fitness as well as related parameters of any sport person are interrelated strength coordination ability speed endurance is some of the physical fitness features. Regular exercise and diet maintenance are essential elements to maintain physical fitness and wellness .physical fitness also provides logical and mental ability at high degree. A comprehensive fitness activity to an individual typically focuses on one or more specific skills based on age or health related requirements .many sources cite mental emotional health and social plays significant part of overall fitness. Physical fitness also prevents or treat many chronic health conditions brought on by unhealthy lifestyle or aging.

Agility

Agility is important in all activities involving quick changes in positives of body and its parts. Fast sates, stops and quick changes in direction and fundamental to good performance in practically all court games, These games require running ability. Skipping, figure skating and certain forms of dance require rapid adjustments in position and quick changes in direction. The greats the Agility of a sportsman, the more precise, quick and more effective are his movements restore balance.

Agility is the ability of the body or parts of the body to change directions rapidly and accurately. Agility plays an important role in physical education activities, especially in such events as gymnastics, Diving, handball, pole – vaulting, hurdling, high jumping and in the maneuvering of the end and backs in handball. It is revealed to a

great extent in sports involving efficient footwork and quick changes in body position. Agility is more effective when it is combined with high levels of strength endurance and speed. Recently it is believed that agility is a combination of several athletic traits, including reaction time, speed of movement, co-ordination power and strength. It is demonstrated in such movements as shuttle run, zigzag running stopping, starting and changing body position quickly.

Measurements of Agility

Measurements of agility factors were done by administering the different tests of agility on all the selected subjects. The investigator was of the opinions that only one test of agility was not sufficient of achieve the purpose of the study. The investigator felt that performance in only one type of agility test may be influenced by a particular body type or characteristic of the selected subjects.

Therefore, the investigations administer the following 2 tests of agility. The tests are

1. Shuttle run test (which is the fourth item in AAPHERED YOUTH FITNESS TEST)
2. Zigzag run test (which is the second test item in the Barrow motor ability test)

Methodology

The Main Purpose Of The Study Was To Find Out The Agility Among. Handball and volleyball players of Hyderabad District to achieve the purpose of the study ten handball and ten volleyball players were selected as subjects age fall between 16 to 18 years only. Care was taken in selecting the subjects who actually participating in this respective games till recently each subject was to oriented as to the procedure of the sequence and administration of the test prior to the administration of the tests the research colleges explained in each selected test of agility, care was taken to administer one test a day on all the subjects under similar condition, so that there was no ambiguity in this minds the subjects co-operated with much zeal and enthusiasm.

Results

TABLE – I: Difference of the mean, standard deviation, standard error and t ratio of the Volleyball and Handball players

Sl.No	Test	MEAN		SD		STD error	
		Handball	Volleyball	Handball	Volleyball	Handball	Volleyball
1	Shuttle run	10.22	11.02	0.52	1.15	0.15	0.30
2	Zigzag run test	22.89	23.55	1.40	0.78	0.29	0.36

Discursions

The results obtained from this comparative study of handball players and volleyball players were analysis and interrupted. The table I clearly show that there is no significant difference among volleyball and the handball players. Further the comparison has been brought by using difference between the means, standard error, where insignificant difference exists in mean gains.

The t-ratio value on the above three tests showed insignificant differences in respect of zigzag run and shuttle run away volleyball and handball players

Conclusions

Within the limitations of the study, the following conclusions were drawn from results obtained and presented in the previous chapter

1. Insignificant difference exists between the basketball players and volleyball players in two tests i.e. shuttle run, zigzag run
2. The subjects who had a low score in agility had a slow movement and jumping ability and polymeric agility, forward running high knee drills.
3. Better agility will help the individual to perform better in most of the sports activities and other major games which needed greater speed, jumping ability co-ordination and reaction time.
4. The place of agility exercises in coaching schedule for lawn tennis, volleyball, handball, football, hockey and other major games requiring grates ability will bring good results.

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Influence of Treadmill Running On Different Levels of Inclination on Forced Vital Capacity and Tidal Volume among Sprinters and Middle Distance Runners

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Abstract:

For the purpose of the study influence of treadmill running on different levels of inclination on forced vital capacity and tidal volume among sprinters and middle distance runners random group design was employed. Randomly selected college level men athletes consisting of sprinters and middle distance runners (N=60) were divided into four groups consisting of 15 in each group. Experimental group I underwent eight weeks treadmill running with 5% inclination, experimental group underwent eight weeks treadmill running with 10% inclination and experimental group III underwent 15% inclination. The control group did not participate in any special exercises except of their routine. Pre test scores were obtained using standard tests on forced vital capacity and tidal volume of all the subjects before the experimental period and the post test scores were obtained immediately after the eight weeks experimental period. The difference between the pre test and post test means was the effect of treadmill running on different inclinations. To test statistical significance, the obtained data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis of the study.

Key Words: forced vital capacity and tidal volume

Introduction

Performance sports aim at high sports performance and for most physical and psychic capacities of sports men are developed to extreme limits. This normally does not happen in other areas of human activities. As a result, performance sports field possess valuable knowledge about the limits to which human performance and various performance factors can be developed. It also lead to discovery of means and methods for improving various physical and psychic capacities (performance factors) to exceptionally high level. This knowledge can be faithful by applied to other areas of sports and human activities.

Statement of the Problem

The purpose of the study was to find out the influence of treadmill running on different levels of inclination on forced vital capacity and tidal volume among sprinters and middle distance runners

Delimitation

The study would be delimited in the following aspects and while interpreting the results. It should be taken into consideration.

1. The study would be delimited to 45 college men athletes and their age was between 18 to 25 years.

2. In this study, the following variables would be selected:

Dependent Variables

1. Forced Vital Capacity

2. Tidal Volume

Limitations

1. The investigator could not control the life style, psychological stress and factors that affect metabolic function.

2. Psychological and sociological aspects of their day-to-day life interactions to their environment could not be controlled.

3. The daily routine, climatic conditions, nutritional actors, motivational factors and socio-economic factors, were not taken into consideration.

4. The time of training and time of testing were the working days, in mostly morning and evening hours.

Selection of Subjects

The purpose of the study was to find out the influence of treadmill running on different levels of inclination on forced vital capacity and tidal volume among sprinters and middle distance runners**.** To achieve the purpose of this study, sixty athletes consisting of sprinters and middle distance runners. The selected subjects' age group was ranging from 18 to 24 years. The subjects were randomly assigned into four groups, as experimental group I, experimental group II, experimental group III and control group ;;consisting of 15 in each group. The experimental groups were asked to undergo treadmill running under three different inclinations and control group did not participate in any special training.

Selection of Variables

The investigator reviewed scientific journals, books and periodicals on the effect of treadmill running and based on the experience gained, consultation with experts and feasibility of conducting the research the following dependent and independent variables were selected:

Dependent Variables

1. Forced Vital Capacity
2. Tidal Volume

Independent Variables

1. Treadmill running with 4 degree inclination for 8 weeks
2. Treadmill running with 8 degrees inclination for 8 weeks
3. Treadmill running with 12 degrees inclination for 8 weeks

Experimental Design

For the purpose of the study, random group design was employed. Randomly selected college level men athletes consisting of sprinters and middle distance runners (N=60) were divided into four groups consisting of 15 in each group. Experimental group I underwent eight weeks treadmill running with 5% inclination, experimental group underwent eight weeks treadmill running with 10% inclination and experimental group III underwent 15% inclination. The control group did not participate in any special exercises except of their routine. Pre test scores were obtained using standard tests on forced vital capacity and tidal volume of all the subjects before the experimental period and the post test scores were obtained immediately after the eight weeks experimental period. The difference between the pre test and post test means was the effect of treadmill running on different inclinations. To test statistical significance, the obtained data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis of the study.

Criterion Measures

Table 1 shows the variables selected and the tests administered to measure the criterion measures of the study.

Table I: Showing the Variables and Tests for the Research

S.No	Variables	Tests	Units
1	Forced Vital capacity	Spiro meter	Milli liters
2	Tidal Volume	Spiro meter	Milli liters

Subject Reliability

To determine the reliability of the subjects the test conducted for tester's reliability ensured the subject reliability. The correlation of coefficient correlation obtained for the tests variables were given in Table II.

Table II: Intra Class Correlation Coefficient of Test – Retest Scores

S.No	Variables	Co-efficient of Correlation
1	Forced Vital capacity	0.82*
2	Tidal Volume	0.90*

* Significant at 0.05 level

Test Administration

Administration of the tests and the method of collecting the data were explained here.

Measurement of Forced Vital Capacity

Purpose: The purpose of this test was to find out the maximum quantity of air that can be expired after a full inspiration.

Equipment: Spiro meter, mouth pieces and nose clips.

Procedure

Forced Vital capacity was measured by Spirometer in liters. The Spiro meter was equipped with a good length of rubber hose. The Spiro meter placed at a height where by all the subject can stand erect at the beginning of the test. The mouth piece was disinfected by an antiseptic solution after use by each subject. The subjects were asked to take a deep breath for test: There after the fullest possible inhalation, the subject exhaled slowly and steadily bending forward over the hose till the air within his control was expelled.

Care was taken to prevent air from escaping either through nose or around the edges of mouth piece and was also ensured that a second breath was not taken by the subject during the test. Incase of doubt the test was repeated. Care was taken to lower the drum without spilling the water, each time after use.

Scoring:

The score was taken from the dial of the Spiro meter which was recorded in $1/100^{th}$ of a liter.

Tidal Volume

Purpose: Determination of tidal volume

Equipment: Spirometer, and chair.

Procedure

The tidal volume of the subject was determined by the Spirometer in sitting position. The subject was allowed to inspire and expire in a normal way without any force keeping the spirometer in his mouth. After a few trials, the tidal volume of inspiration or expiration per breath was recorded.

Scoring

The tidal volume of the subject was obtained from the movement of circular volume indicator which was set at '0' before the inspiration or expiration. The result was recorded in milliliter.

Computation of Analysis of Covariance and Post Hoc Analysis Results on Forced Vital Capacity

The statistical analysis comparing the initial and final means of Forced Vital Capacity due to treadmill running on different levels of inclination, namely 5% inclination, 10% inclination and 15% inclination and control groups among sprinters and middle distance runners is presented in Table III

Table III: Computation of Analysis of Covariance Due To Tread Mill Running On Different Levels of Inclination and Control Group on Forced Vital Capacity

	5 Degree Inclination Group	10 Degree Inclination Group	15 Degree Inclination Group	Control Group	SOV	Sum of Squares	Df	Mean Squares	Obtained F
Pre Test Mean	45.34	45.12	45.64	46.19	B	12.90	3	4.30	0.62
Std Dev	1.61	1.94	2.44	3.95	W	530.10	56	6.98	
Post Test Mean	47.98	47.89	49.24	46.19	B	60.52	3	20.17	2.55
Std Dev	1.82	2.35	2.44	3.95	W	602.24	56	7.92	
Adjusted Post Test Mean	48.19	48.31	49.18	46.22	B	92.68	3	30.89	15.45*
					W	150.00	55	2.00	

SOV: Source of Variance; B: Between W: Within Required $F_{(0.05),\,(df\ 3,76)} = 2.72$

* Significant at 0.05 level of confidence

As shown in Table III, the pre test mean on Forced Vital Capacity of treadmill training with 5 degree inclination group was 45.34 with standard deviation ± 1.61 pre test mean of treadmill training with 10 degree inclination was 45.12 with standard deviation ± 1.94, the pre test mean of treadmill running with 15 degree inclination was 45.64 with standard deviation ± 2.44, the pre test mean of control group was 46.19 with standard deviation ± 3.95. The obtained F ratio of 0.62 on pre test means of the groups was not significant at 0.05 level as the obtained F value was less than the required table F value of 2.72 to be significant at 0.05 level. This shows that there was no significant difference in means of the groups at initial stage.

The results presented in Table III, the post test mean on Forced Vital Capacity of treadmill training with 5 degree inclination group was 47.98 with standard deviation ± 1.82 post test mean of treadmill training with 10 degree inclination group was 47.89 with standard deviation ± 2.35, the post test mean of treadmill training with 15 degree inclination group was 49.24 with standard deviation ± 2.35, the post test mean of control group was 46.79 with standard deviation ± 3.54. The obtained F ratio of 2.55 on post test means of the groups was not significant at 0.05 level as the obtained F value was lesser than the required table F value of 2.72 to be significant at 0.05 level. This shows that there was no significant difference in post test means of the groups.

Taking into consideration of the pre test means and post test means, adjusted post test means were determined and analysis of covariance was done. The adjusted mean on Forced Vital Capacity on treadmill training with 5 degree inclination group was 48.19, treadmill training with 10 degree inclination group was 48.31, treadmill training 15 degree inclination was 49.18 and control group was 46.22. The obtained F value on adjusted means was 15.45. The obtained F value was greater than the required value of 2.72 and hence it was accepted that there was significant differences among the adjusted means on the Forced Vital Capacity of the subjects.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table IV

Table IV: Multiple Comparisons between Treadmill Training on Different inclinations and Control Groups and Scheffe's Post Hoc Analysis on Forced Vital Capacity

5 Degree Inclination Group	10 Degree Inclination Group	15 Degree Inclination Group	Control Group	MEAN DIFF	C.I
48.19	48.31			-0.12	1.28
48.19		49.18		-0.99	1.28
48.19			46.22	1.97*	1.28
	48.31	49.18		-0.87	1.28
	48.31		46.22	2.09*	1.28
		49.18	46.22	2.96*	1.28

* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that to be significant at 0.05 level confidence the required confidence interval was 1.28. The following paired mean comparisons were greater than the required confidence interval and were significant at 0.05 level.

5 Degree inclination Group Vs Control Group (MD: 1.97)

10 Degree inclination Group Vs Control Group (MD: 2.09)

15 Degree inclination Group Vs Control Group (MD: 2.96)

The following paired mean comparisons were less than the required confidence interval and were not significant at 0.05 level.

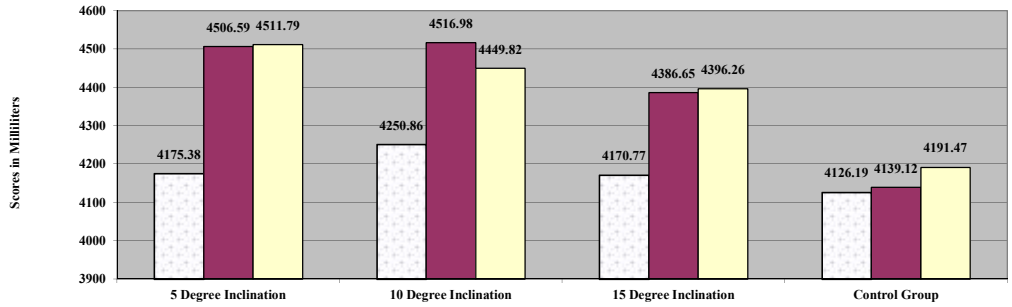
5 Degree inclination Group Vs 10 Degree inclination Group (MD: -0.12)

5 Degree inclination Group Vs 15 Degree inclination Group (MD: -0.99)

10 Degree inclination Group Vs 15 Degree inclination Group (MD: -0.87)

The pre test, post test and ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure I: Graph Showing Pre, Post and Adjusted Means on Forced Vital Capacity



Discussions on Forced Vital Capacity

The results presented in Table IV proved that there was significant improvement on cardio pulmonary fitness variable Forced Vital Capacity due to treadmill training on different inclinations, as the obtained F value on adjusted means of 15.45 was greater than the required table F value of 2.72. The post hoc analysis in table VII proved that all the three experimental protocols significantly altered Forced Vital Capacity significantly compared to control group, and the formulated hypothesis that treadmill training under different inclination would have significant effect on Forced Vital Capacity was accepted at 0.05 level. The post hoc analysis proved that treadmill training under different inclinations contributed for improving forced vital capacity comparing to control group and the formulated hypothesis that there would be significant difference among experimental groups in improving the criterion variable Forced Vital Capacity among sprinters and middle distance runners was accepted at 0.05 level. However, the comparison of influence of treadmill inclination within the experimental groups proved that there was no significant difference and the null hypothesis was accepted at 0.05 level.

Results on Tidal Volume

The statistical analysis comparing the initial and final means of Tidal Volume due to treadmill running on different levels of inclination, namely 5% inclination, 10% inclination and 15% inclination and control groups among sprinters and middle distance runners is presented in Table V

Table V: Computation of Analysis of Covariance Due To Tread Mill Running On Different Levels of Inclination and Control Group on Tidal Volume

	5 Degree Inclination Group	10 Degree Inclination Group	15 Degree Inclination Group	Control Group	SOV	Sum of Squares	Df	Mean Squares	Obtained F
Pre Test Mean	49.30	49.50	47.50	49.00	B	49.35	3	16.45	0.53
Std Dev	7.26	5.49	4.62	4.38	W	2342.20	56	30.82	
Post Test Mean	50.40	51.60	51.50	49.00	B	59.40	3	19.80	0.67
Std Dev	7.49	5.17	4.62	4.38	W	2243.60	56	29.52	
Adjusted Post Test Mean	49.94	50.95	52.78	49.33	B	135.07	3	45.02	67.32*
					W	50.16	55	0.67	

SOV: Source of Variance; B: Between W: Within

Required $F_{(0.05),\,(df\,3,76)} = 2.72$

* Significant at 0.05 level of confidence

As shown in Table V, the pre test mean on Tidal Volume of treadmill training with 5 degree inclination group was 49.30 with standard deviation $\pm$ 7.26 pre test mean of treadmill training with 10 degree inclination was 49.50 with standard deviation $\pm$ 5.49, the pre test mean of treadmill running with 15 degree inclination was 47.50 with standard deviation $\pm$ 4.62, the pre test mean of control group was 49.00 with standard deviation $\pm$ 4.38. The obtained F ratio of 0.53 on pre test means of the groups was not significant at 0.05 level as the obtained F value was less than the required table F value of 2.72 to be significant at 0.05 level. This shows that there was no significant difference in means of the groups at initial stage.

The results presented in Table V, the post test mean on Tidal Volume of treadmill training with 5 degree inclination group was 50.40 with standard deviation $\pm$ 7.49 post test mean of treadmill training with 10 degree inclination group was 51.60 with standard deviation $\pm$ 5.17, the post test mean of treadmill training with 15 degree inclination group was 51.50 with standard deviation $\pm$ 5.17, the post test mean of control group was 49.50 with standard deviation $\pm$ 3.73. The obtained F ratio of 0.67 on post test means of the groups was not significant at 0.05 level as the obtained F value was lesser than the required table F value of 2.72 to be significant at 0.05 level. This shows that there was no significant difference in post test means of the groups.

Taking into consideration of the pre test means and post test means, adjusted post test means were determined and analysis of covariance was done. The adjusted mean on Tidal Volume on treadmill training with 5 degree inclination group was 49.94, treadmill training with 10 degree inclination group was 50.95, treadmill training 15 degree inclination was 52.78 and control group was 49.33. The obtained F value on adjusted means was 67.32. The obtained F value was greater than the required value of 2.72 and hence it was accepted that there was significant differences among the adjusted means on the Tidal Volume of the subjects.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table VI

Table VI: Multiple Comparisons between Treadmill Training on Different inclinations and Control Groups and Scheffe's Post Hoc Analysis on Tidal Volume

5 Degree Inclination Group	10 Degree Inclination Group	15 Degree Inclination Group	Control Group	MEAN DIFF	C.I
49.94	50.95			-1.01*	0.74
49.94		52.78		-2.84*	0.74
49.94			49.33	0.61	0.74
	50.95	52.78		-1.84*	0.74
	50.95		49.33	1.62*	0.74
		52.78	49.33	3.45*	0.74

* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that to be significant at 0.05 level confidence the required confidence interval was 0.74. The following paired mean comparisons were greater than the required confidence interval and were significant at 0.05 level.

5 Degree inclination Group Vs 10 Degree inclination Group (MD: -1.01)

5 Degree inclination Group Vs 15 Degree inclination Group (MD: -2.84)

10 Degree inclination Group Vs 15 Degree inclination Group (MD: -1.84)

10 Degree inclination Group Vs Control Group (MD: 1.62)

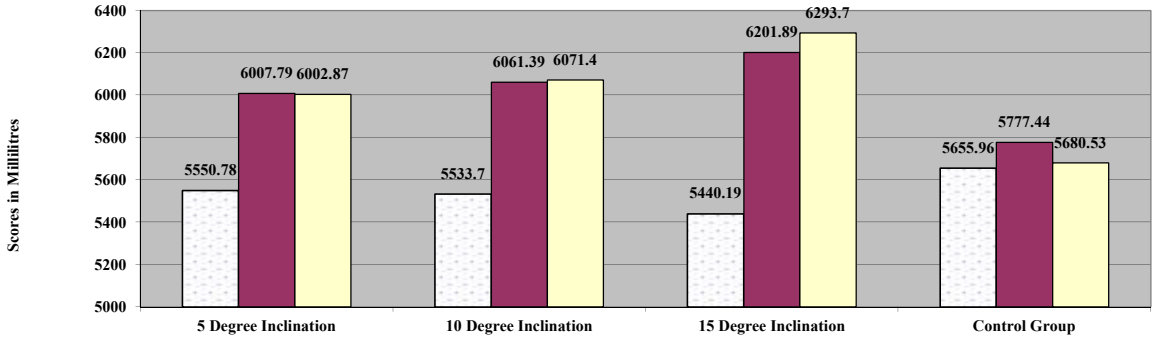
15 Degree inclination Group Vs Control Group (MD: 3.45)

The following paired mean comparisons were less than the required confidence interval and were not significant at 0.05 level.

5 Degree inclination Group Vs Control Group (MD: 0.61)

The pre test, post test and ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure II.

Figure II: Graph Showing Pre, Post and Adjusted Means on Tidal Volume



Discussions on Tidal Volume

The results presented in Table VI proved that there was significant improvement on cardio pulmonary fitness variable Tidal Volume due to treadmill training on different inclinations, as they obtained F value on adjusted means of 67.32 was greater than the required table F value of 2.72. The post hoc analysis in table IX proved that all the three experimental protocols significantly altered Tidal Volume significantly compared to control group, and the formulated hypothesis that treadmill training under different inclination would have significant effect on Tidal Volume was accepted at 0.05 level. The post hoc analysis proved that the treadmill runner under 10 degree inclination and 15 degree inclination altered tidal volume, compared to control group and the formulated hypothesis that there would be significant difference among experimental groups in improving the criterion variable Tidal Volume among sprinters and middle distance runners was accepted at 0.05 level. To this extent. As for comparisons between treadmill running at different inclinations, that is, within treatment groups, it was found that 10 degree inclination and 15 degree inclinations were significantly better than 5% degree inclination to alter tidal volume of sprinters and middle distance runner

Conclusions

Within the limitations and delimitation of the study, the following conclusions were drawn.

1. It was concluded that all the three experimental protocols, namely treadmill running on different inclinations significantly altered Forced Vital Capacity compared to control group, ed at 0.05 level. The post hoc analysis proved that treadmill training under different inclinations contributed for improving, forced vital capacity comparing to control group and the comparison of influence of treadmill inclination within the experimental groups proved that there was no significant difference among sprinters and middle distance runners.

2. It was concluded that all the three experimental protocols, namely, treadmill running of different inclinations significantly altered Tidal Volume significantly compared to control group, and the post hoc analysis proved that the treadmill runner under 10 degree inclination and 15 degree inclination altered tidal volume, compared to control group and comparisons between treadmill running at different inclinations, that is, within treatment groups, it was found that 10 degree inclination and 15 degree inclinations were significantly better than 5% degree inclination to alter tidal volume of sprinters and middle distance runners.

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Effect of Plyometric Training on Selected Physical Fitness Variables among Sprinting performance on Athletes

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Abstract:

Sprinting is running over a short distance with fastest possible speed. To achieve fastest speed over a short distance sprinter needs appropriate body shape, muscle strength, leg strength and fine-tuned nervous system to pull the whole thing together. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and surrounding tissues to 23 jump higher, run faster, throw further, or hit harder, depending on the desired training goal. Plyometric is used to increase the speed or force of muscular contractions, providing explosiveness for a variety of sport-specific activities. Plyometric has been shown across the literature to be beneficial to a variety of athletes. **Objective of the study:** The purpose of the study is to determine the effect of plyometric training on selected physical fitness variables among athletes. **Hypothesis:** There may not be any significant difference between pre test and post test on selected physical fitness among Athletes in relation to plyometric training **Methodology:** The purpose of this study was to explore the effect of plyometric training on selected physical fitness variables among athletes. To achieve this purpose of the study thirty athletes were selected from Hyderabad district were randomly selected as subjects. Their age ranged in between 18 and 22 years. The subjects were divided into two groups namely plyometric group and control group. The plyometric group was subjected to plyometric training (for weekly three days Monday, Wednesday, Friday) at evening session for six weeks. Speed, agility and leg explosive power was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed. **Results & Conclusion:** The results of the study indicated that the selected physical fitness variables such as speed, agility and leg explosive power were improved significantly after undergoing plyometric training. The changes in the selected parameters were attributed the proper planning, preparation and execution of the training package given to the players. The results of the present study indicates that the plyometric training methods is appropriate protocol to improve speed, agility and leg explosive power of athletes. From the result of the present study it is very clear that the selected physical fitness variables such as speed, agility and leg explosive power improvement significantly due to plyometric training.

Introduction

Since, eighth century BC sprinting performance has attracted many people across the world. Sprinting is running over a short distance with fastest possible speed. To achieve fastest speed over a short distance sprinter needs appropriate body shape, muscle strength, leg strength and fine-tuned nervous system to pull the whole thing together. There are countless athletic qualities that enable sprinters to run fast and that can be developed through various training interventions. Past research studies indicated significant relation between sprinting performance and explosive power (Charag, Pal, and Yadav, 2011; Mackala and Fostiak, 2015; Markovic, Jukic, Milanovic and Metikos, 2007; Kukoli, Ropret, Ugarkovic and Jaric, 1999). In fact, explosive power can be achieved through plyometric exercises. Further, for successful sprinting performance leg muscle power and vertical jump performance

are considered as critical elements (Canavan and Vescovi, 2004; Potteigeret al., 1999; Bobbert, 1990), as well as for carrying out daily activities and occupational tasks (kraemeret al., 2001). In fact, the ability of muscles to store and return elastic energy effectively is important in movements that involve the stretch-shorten cycle (SSC) (Komi, 2000).

Plyometric exercises represent a natural part of most sport movements because they involve jumping, hopping, and skipping (i.e., like high jumping, throwing, or kicking) (Anderst, Eksten and Koceja 1994; Bauer, Thayer and Baras 1990). These exercises are characterized by stretch-shortening cycle actions; that's, they begin with a speedy stretch of a muscle (eccentric phase) and are followed by a fast shortening of the same muscle (concentric phase) (Bobbert 1990; Bosco and Komi 1980; Bosco et al., 1982). Plyometric exercises enhance strength, muscle power, coordination, and athletic performance (Adams et al., 1992; Bediet al., 1987; Holcomb et al., 1996). In fact, athletes with superior coaching and conditioning are stronger and better coordinated and less subject to injury. Plyometrics are training techniques used by athletes in all types of sports to increase strength and explosiveness. Plyometrics exercise consists of a rapid stretching of a muscle (eccentric action) immediately followed by a concentric or shortening action of the same muscle and connective tissue (Häkkinen, Alén, and Komi, 1985). Success in many sports greatly depends upon the athlete's

Plyometric involve power jumping, repetitive bounding and quick force production. When your muscles eccentrically contract, or shorten, then immediately stretch and lengthen, they produce maximal power ideal for athletic situations. It is a fast movement that happens over a short period. Plyometric are ideal for athletes or people looking to improve muscular power, speed and strength (Baechle, 2008).

Hypothesis:

There may not be any significant difference between pre test and post test on selected physical fitness among Athletes in relation to plyometric training.

Methodology:

The purpose of this study is to find out the effect of plyometric training on Selected Physical Fitness Variables among Sprinting performance on Trained Athletes. To achieve this purpose of the study thirty Athletes were selected from Jawaharlal Nehru Technological University, Hyderabad were randomly selected as subjects. Their age ranged in between 18 and 22 years. The subjects were divided into two groups namely plyometric group and control group. The plyometric group was subjected to plyometric training (for weekly three days Monday, Wednesday, Friday) at evening session for six weeks. Speed, agility and leg explosive power was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed.

Tools used

- Speed AAPHERD Youth Fitness Test (50meters Dash) In Seconds,
- Agility JCR Test (Shuttle Run) In Seconds
- Leg Explosive Power JCR Test (Vertical Jump) In Centimeters

Training Program

For plyometric group underwent their training programme as three days per week for six weeks. Training was given in the evening session. The training session includes warming up and cool down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their training programmes as per the schedules such as side to side ankle hops, double leg hops, split jumps, lateral cone hops and single leg bounding under the

strict supervision of the investigator. During experimental period control group did not participate in any of the special training.

Results & Discussions

Comparison of Mean, and 't'-Values of Physical Fitness Variables between Pre & Post Test among Plyometric and Control Groups

S. No	Physical Fitness Variables	Groups	Test	Mean	't' Values
1.	Speed	Plyometric group	Pre Test	7.94	13.43
			Post Test	7.76	
		Control group	Pre Test	7.86	0.48
			Post Test	7.83	
2.	Agility	Plyometric group	Pre Test	20.63	13.16
			Post Test	20.32	
		Control group	Pre Test	20.82	1.75
			Post Test	22.78	
3.	Leg Explosive Power	Plyometric group	Pre Test	35.06	15.04
			Post Test	37.75	
		Control group	Pre Test	34.28	0.52
			Post Test	34.12	

Table reveals that the obtained mean values of per test and post-test of plyometric group for speed, agility and leg explosive power were 7.94 and 7.76, 20.63 and 20.32, 35.06 and 37.75 respectively; the obtained 't' ratio were 13.43, 13.16 and 15.04 respectively. 't' value is 2.14 at 0.05 level of confidence for the degree of freedom 14. 't' ratio was greater than the table value. It is found to be significant change in speed, agility and leg explosive power of the athletes. The obtained mean values of pre-test and post test scores of control group were 7.86 and 7.83, 20.63 and 22.32, 34.28 and 34.12 respectively, the obtained 't' ratio was 0.48, 1.75 and 0.52. The required table value is 2.14 at 0.05 level of confidence for the degree of freedom 14. The 't' ratio was lesser than the table value. It is found to be insignificant changes in speed, agility and leg explosive power of the Athletes.

The results of the study indicated that the selected physical fitness variables such as speed, agility and leg explosive power were improved significantly after undergoing plyometric training. The changes in the selected parameters were attributed the proper planning, preparation and execution of the training package given to the Athletes. The result of the present study indicates that the plyometric training methods is appropriate protocol to improve speed, agility and leg explosive power of athletes. From the result of the present study it is very clear that the selected physical fitness variables such as speed, agility and leg explosive power improvement significantly due to plyometric training.

Conclusions

It was concluded that the practice of plyometric training helped to improve selected physical fitness variables of athletes. It was also found that there is progressive improvement in the selected criterion variables of plyometric group of JNTUH athletes after six weeks of plyometric training programme. Further, it also helps to improve selected physical fitness variables such as speed, agility and leg explosive power.

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Effect of Varied Training Program on Physical Fitness among University Basket Ball Players at Hyderabad

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Abstract

Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. It is a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity. Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. The purpose of the study is to find out the effect of varied training whether or not any significant difference found between pre-test and post-test on physical fitness among university basket ball players at Hyderabad and their performance. The study was formulated based on the simple random sampling. The samples were collected from the 30 basket ball players of Jawaharlal Nehru Technological University Hyderabad in the age group of 18 to 22 years. the pre and post-test mean of leg strength between experimental group and control group were 94.0 + 8.90, 1+ 8.10 and 105.70+8.65, 95.40+7.80 respectively. The obtained 'F' ratio value 0.15 for pre-test mean and 11.51 for post-test on leg strength. The pre and post-test mean of leg explosive power between experimental group and control group were 2.30 + 0.10, 2.30 + 0.15 and 2.65 + 0.15, 2.34 + 0.14 respectively. The obtained 'F' ratio value 0.72 for pre-test mean and 21.56 for post-test on leg strength. The pre and post-test mean of abdominal strength endurance between experimental group and control group were 35.35 + 4.32, 39.20 + 5.43 and 44.35 + 5.55, 39.20 + 5.25 respectively. The obtained 'F' ratio value 2.38 for pre-test mean and 5.45 for post-test on leg strength. In conclusion Eight weeks of circuit weight training programme the results of the study provided the evidence, that the circuit weight training is an effective method for developing the physical fitness variables such as leg strength, leg explosive power and abdominal strength endurance of Jawaharlal Nehru Technological University Hyderabad Basketball players.

Key Words: Varied Training, Circuit Training, Physical Fitness, Basketball players

Introduction

Physical fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. It is a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity. Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program. When one circuit is complete, one begins the first exercise again for another circuit. Traditionally, the time between exercises in circuit training is short, often with rapid movement to the next exercise.

Circuit training is an excellent way to improve mobility, strength and stamina. The circuit training comprises of 6 to 10 strength exercises that are completed one exercise after another. Each exercise is performed for a specified number of repetitions or for a set time before moving on to the next exercise. The exercises within each circuit are separated by a short rest period, and each circuit is separated by a longer rest period. The total number of circuits performed during a training session may vary from two to six depending on your training level (beginner, intermediate, or advanced), your period of training (preparation or competition) and your training objective.

Circuit training is an evolving training exercise program that was developed by R.E. Morgan and G.T. Anderson in 1953 at the University of Leeds in England. Weight training is the best means for improving strength and endurance. All type of weight training does not produce equal amount of muscle hypotrophy. Weight training with a certain type of load leads to best results. The organization of strength training basically comprises of two things. Weight training is taking fitness enthusiasts by storm, and it has even become attractive to thousands who once called themselves couch potatoes. Weight training is an activity that can accomplish in short period, yet it can make dramatic changes in how your body looks and feels. Many who weight train will tell you that having a firm body not only feels great but also positively affects how they to others. Weight training can increasing the energy level and improves the productivity at work and everyday activities.

The amount of weight to be used should be based on a percentage of the maximum amount of weight that can be lifted one time, generally referred to as one repetition maximum (1RM). For maximum results, athletes should train according to their genetic predisposition. An athlete with a greater proportion of fast twitch muscles would benefit from sprint training and a muscular strength program using fewer repetitions of a heavier weight. The number of repetitions performed to fatigue is an important consideration in designing a strength training program. One set of 4-6 RM performed 3 days a week is a typical strength training program. In a number of studies comparing multiple set programs to produce greater strength gains than a single set, the majority of studies indicate that there is not a significant difference. Handling heavy weights in the pursuit of strength will require a recovery of 3-5 minutes between sets. The majority of athletic events are fast and dynamic, and therefore this quality must be reflected in the athlete's strength work. Physical fitness is a matter of fundamental importance to the well-being of every individual in the field of sports. Physical fitness components and specific training schedule of skill ability are very important factors for cricket players. These components of training schedule of skill ability are very important factors for Basketball players. This component of training schedule and development of skill ability are more important to cricket players in game situation. Physical fitness is one's richest possession; it cannot be purchased; it has to be earned through a daily routine of physical exercise.

Objective of the study

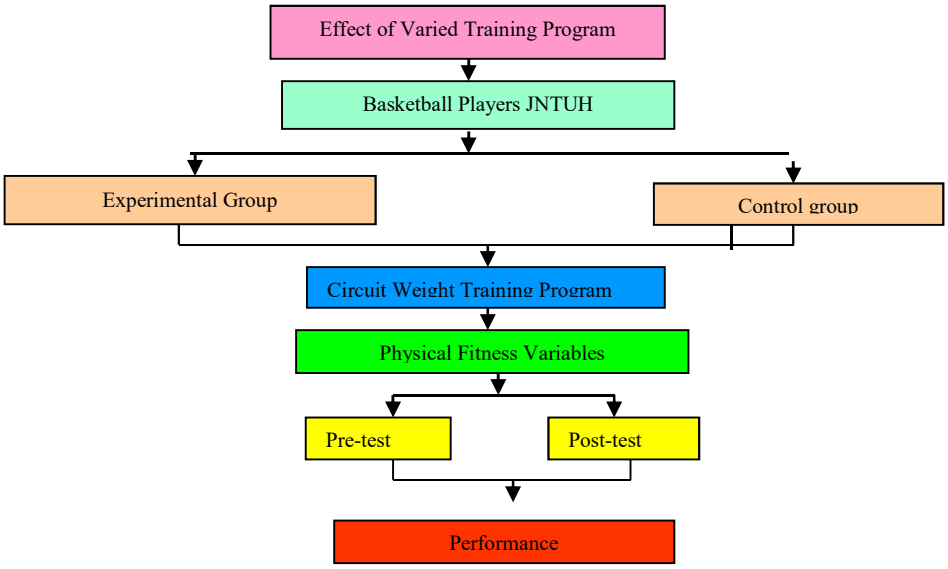
The purpose of the study is to find out the effect of varied training whether or not any significant difference found between pre-test and post-test on physical fitness among university basket ball players at Hyderabad and their performance.

Hypotheses

The following hypotheses are formulated for the study. There may not be any significant difference between pre – test and post on effect of circuit training program among university basket ball players in relation to their physical fitness.

Design of the study

The diagrammatic presentation was presented hereunder.



Methods & Materials

The study was formulated based on the simple random sampling. The samples were collected from the 30 basket ball players of Jawaharlal Nehru Technological University Hyderabad in the age group of 18 to 22 years. The basketball players were divided in to two group's experimental group and control group.

Tools Used

The following physical fitness variables were selected.

Sl.No	Variables	Test
1.	Leg Strength	Leg Dynamometer
2.	Leg explosive power	Standing Broad Jump
3.	Abdominal strength endurance	Bend knee sit-ups

Test Administration

The pre and post-test random group design was used as experimental design in which thirty men subjects were divided into two groups one experimental group and one control group of fifteen subjects each. The experimental group underwent circuit weight training and control group acted as the control. The subjects tested on selected criterion variables were leg strength, abdominal strength endurance and leg explosive power prior to and immediately after the training programme. Total duration was for eight weeks and the subject was undergoing training trice a week. Move from exercise to exercise with no more than 30 seconds of rest in between. When they complete one circuit, rest for 1 – 2 minutes, and then complete the second circuit and the training tempo was 2 counts for the concentric action and 3 counts for eccentric action. Each work out was for a duration of 45 - 60 minutes (excluding warm ups and cool down). The training programmes were conducted at Jawaharlal Nehru Technological University Hyderabad. Exercise prescribed below was continuous throughout the duration but, intensity had changed after every week. The weight training exercises were includes bench press, good morning exercise, hamstring curl and calf raise etc.

Results and Discussion

The collected data from the two groups prior to and immediately after the training programme on selected physical fitness variables were statistically analyzed with analysis of covariance (ANCOVA). In all cases 0.05 level of confidence was fixed as a level of confidence to test the hypothesis.

Table Showing The Significant Difference Between Pre – Test And Post On Effect Of Circuit Training Program Among University Basket Ball Players In Relation To Their Physical Fitness.

Sl.No	Variables	Pre test		Post test		Pre test		Post test		F ratio
		Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	
1.	Leg strength	94	8.90	105.70	8.65	94	8.10	95.40	7.80	114.90
2.	Leg Explosive strength	2.30	0.10	2.65	0.15	2.30	0.15	2.34	0.14	129.35
3.	Abdominal strength endurance	35.35	4.30	44.35	5.55	39.20	5.43	39.73	5.25	92.52

Finding of the Study

Table shows that the pre and post-test mean of leg strength between experimental group and control group were 94.0 + 8.90, 1+ 8.10 and 105.70+8.65, 95.40+7.80 respectively. The obtained 'F' ratio value 0.15 for pre-test mean and 11.51 for post-test on leg strength. The required table value is 4.20 for significant at 0.05 level of confidence with df 1 and 28. It indicated that the pre-test was insignificant and post-test was significant at 0.05 level of confidence. The adjusted post-test mean of leg strength between the experimental group and control group were 105.70 and 96 respectively. The 'F' ratio value 114.90 for adjusted post-test mean is higher than the required table value 4.21 for significant at 0.05 level of confidence with df 1 and 27. The result of the study indicated that there was significant difference between the adjusted post-test mean of experimental group and control group. The pre and post-test mean of leg explosive power between experimental group and control group were 2.30 + 0.10, 2.30 + 0.15 and 2.65 + 0.15, 2.34 + 0.14 respectively. The obtained 'F' ratio value 0.72 for pre-test mean and 21.56 for post-test on leg strength. The required table value is 4.20 for significant at 0.05 level of confidence with df 1 and 28. It indicated that the pre-test was insignificant and post-test was significant at 0.05 level of confidence. The adjusted post-test mean of leg explosive power between the experimental group and control group were 2.62 and 2.36 respectively. The 'F' ratio value 129.35 for adjusted post-test mean is higher than the required table value 4.21 for significant at 0.05 level of confidence with df 1 and 27. The result of the study indicated that there was significant difference between the adjusted post-test mean of experimental group and control group. The pre and post-test mean of abdominal strength endurance between experimental group and control group were 35.35 + 4.32, 39.20 + 5.43 and 44.35 + 5.55, 39.20 + 5.25 respectively. The obtained 'F' ratio value 2.38 for pre-test mean and 5.45 for post-test on leg strength. The required table value is 4.20 for significant at 0.05 level of confidence with df 1 and 28. It indicated that the pre-test was insignificant and post-test was significant at 0.05 level of confidence. The adjusted post-test mean of leg explosive power between the experimental group and control group were 45.80 and 38.25 respectively. The 'F' ratio value 92.52 for adjusted post-test mean is higher than the required table value 4.21 for significant at 0.05 level of confidence with df 1 and 27.

Conclusion

Eight weeks of circuit weight training programme improved the leg strength, leg explosive power and abdominal strength endurance of Jawaharlal Nehru Technological University Hyderabad Basketball players. The results of the study provided the evidence, that the circuit weight training is an effective method for developing the

physical fitness variables such as leg strength, leg explosive power and abdominal strength endurance.

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Effect of Selected Training methods on motor fitness development among college level volleyball players in Nizamabad district in relation to their performance

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Abstract:

Physical activity throughout the ages has been acclaimed for health and recreation. It provided fun and enjoyment. It also provided youthful exuberance and the elderly care. Physical activity and movements are as old as human existence. It played numerous roles from struggle for existence to struggle for excellence. A sport is an activity in our lives where pursuits of different movement achieved through the total investigation of Neuro – muscular co-ordination. The purpose of this study was to know effect of different training methods on selected motor fitness variables of college level Volleyball players. **Hypotheses** that there may not be any significant difference between pre – test and post on effect selected training program among college level volleyball players of Nizamabad district in relation to their physical fitness. One hundred twenty college level Volleyball players, age ranging between 18 to 22 years as subjects and were randomly assigned to four groups i.e., three experimental groups and one control group, consisting of 30 students each. The following variables of motor fitness are: Muscle Strength (Sit Up), Flexibility (Sit and Reach) and Cardiovascular Endurance (1 Mile Run), All the experimental Groups (Circuit training, Plyometric training and Interval training) were administered with the selected exercises, thrice in a week for a duration of 6 weeks under direct supervision of the researcher. **Results & Discussions :** The Significant at 0.05 level of confidence, 't' 0.05 (29) = 2.045. the study clearly reveals that all the experimental groups improved significantly yielding 't' value of 4.965, 9.127 and 2.392 with regard to circuit training, plyometric training and interval training, respectively, The Significant at 0.05 level of confidence, 't' 0.05 (29) = 2.045. . the study clearly reveals that all the experimental groups improved significantly yielding 't' value of 26.451, 53.738 and 30.208 with regard to circuit training, plyometric training and interval training, respectively, The Significant at 0.05 level of confidence,'t' 0.05 (29) = 2.045. . the study reveals that all the experimental groups improved significantly yielding 't' value of 13.129, 15.363 and 13.740 with regard to circuit training, plyometric training and interval training, respectively. **Conclusion** Sports training in a nutshell means preparing for a performance and it helps the athletes to build strength, endurance it gradually improves their skill levels and their strengthen confidence. As simple it may be sound for formulating the systematic training method that fulfils all the physical goals to be perfect. The training program has a significant impact on the desired outputs and the training must be relevant to the purpose and sport that intend to pursue. The finding of the study revealed that the three experimental groups, administered with circuit training, plyometric training and interval training showed significant gains in performance of motor fitness components after administration of training for duration of 6 weeks.

Key Words: Circuit Training, Plyometric Training and Interval Training

Introduction

Physical activity throughout the ages has been acclaimed for health and recreation. It provided fun and enjoyment. It also provided youthful exuberance and the elderly care. Physical activity and movements are as old as

human existence. It played numerous roles from struggle for existence to struggle for excellence. A sport is an activity in our lives where pursuits of different movement achieved through the total investigation of Neuro – muscular co-ordination.

In this modern era, we can see that each and every individual directly or indirectly related to sports. Modern Physical Education commonly known as there is sports where pursuit of discipline Many researchers strongly support the regular exercises helps one to keep a strong and healthy and to prevent cardio vascular diseases. Physically fit person, heart beats at a lower rate and pumps more blood per beat at rest. As a result of regular exercises and individual's capacity to use oxygen is increased systematically energy production depends on internal chemical or metabolic change.

Health, Fitness and performance are poorly correlated phenomena. Health is generally defined as the freedom from disease, fitness strictly relates to a man's ability to meet the demands of his environment and excellence in performance Line freely formed such as biological, social and physical. A fit body is an asset to any game. The present era stresses upon sports and games involving high skill and expertise. Super performances not only depends upon skill and expertise but also requires a high degree of physical fitness of the players. Thus, fitness is the key factor and base of the super performances. Preparing a skilled player depends upon the provision of type of training to the player. Sports training refer to specialized strategies and methods of exercise used in various sports to develop players and athletes and prepare them for performing in sporting events.

Objective of the study

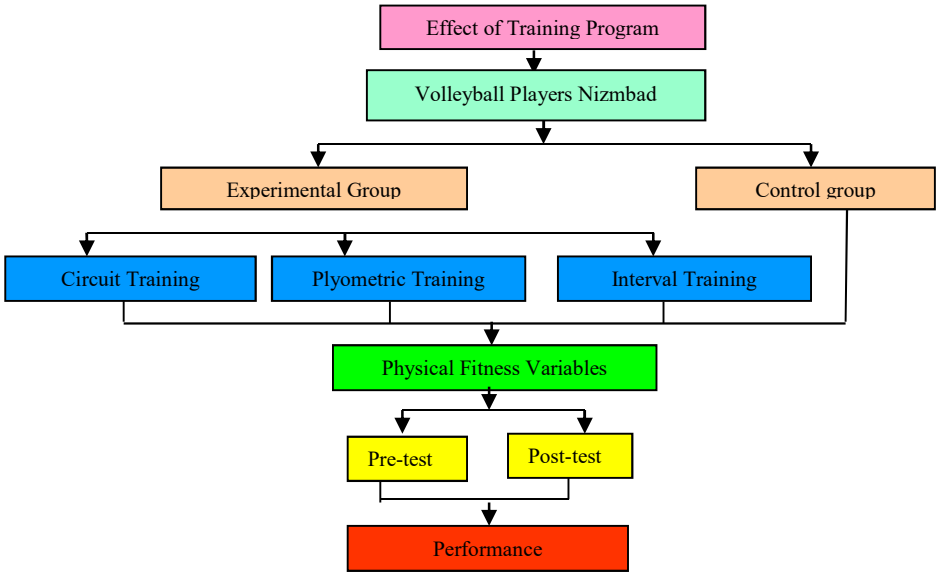
The purpose of this study was to know effect of different training methods on selected motor fitness variables of college level Volleyball players

Hypotheses

The following hypotheses are formulated for the study. There may not be any significant difference between pre – test and post on effect selected training program among college level volleyball players of Nizamabad district in relation to their physical fitness.

Design of the Study

The diagrammatic presentation was presented hereunder



Methods and Materials

One hundred twenty college level volleyball players, age ranging between 19 to 22 years acted as subjects and were randomly assigned to four groups i.e., three experimental groups and one control group, consisting of 30 students each. The experimental treatments were also assigned to the groups at random.

The Experimental Groups (three groups) were given Circuit Training, Plyometric Training and Interval Training respectively. The control group being kept away from the training schedule and continued in performing normal college programme. Keeping the feasibility criterion in mind, especially in the case of availability of instruments, the following variables of motor fitness were chosen: 1. Muscle Strength (Sit Up), 2. Flexibility (Sit and Reach) and 3. Cardiovascular Endurance (1 Mile Run), All the experimental Groups (Circuit training, Plyometric training and Interval training) were administered with the selected exercises, thrice in a week for a duration of 6 weeks under direct supervision of the researcher. The statistical analysis of data on motor fitness components of subjects belonging to three experimental groups and one control group, each comprising of thirty subjects, is presented below

Results & Discussions

Table shows the Significance of Difference between Pre-Test and Post-Test Means of the three Experimental Groups and the Control Group in Sit Ups

Sl.No	Groups	Pre-test mean	Post-test mean	Diff. between means	't' ratio
1.	Circuit training	24.667±0.830	26.867±0.803	2.200	4.965*
2.	Plyometric training	24.767±0.756	28.567±0.474	3.800	9.127*
3.	Interval training	24.967±0.968	25.967±0.828	1.000	2.392*
4.	Control Group	24.633±0.977	24.367±0.796	0.266	1.034

The Significant at 0.05 level of confidence, 't' 0.05 (29) = 2.045. Table 1 clearly reveals that all the experimental groups improved significantly yielding 't' value of 4.965, 9.127 and 2.392 with regard to circuit training, plyometric training and interval training, respectively, where as the control group did not show any significant improvement in sit ups performance of subjects indicating 't' values of 1.034.The Significant at 0.05 level of confidence, N = 120, B = Between group variance, W = Within group variance. The analysis of covariance for sit ups showed that the resultant 'F' ratio of 0.029 was not significant in case of pre test means. The post test means yielded 'F' ratio of 5.620, which was found to be significant. The adjusted final means yielded the 'F' ratio of 28.877 and was found significant. The Significance at 0.05 level It was clear from the mean differences with respect to performance in sit ups of all the experimental groups were found to be significantly greater than that of control group. Plyometric training group was found to be significantly better than both circuit training and interval training.

Table shows the Significance of Difference between Pre-Test and Post-Test Means of the three Experimental Groups and the Control Group in One Mile Run/Walk

Sl .No	Groups	Pre-test mean	Post-test mean	Diff. between means	't' ratio
1.	Circuit training	12.855±0.242	10.170±0.174	2.685	26.451*
2.	Plyometric training	12.877±0.193	9.891±0.160	2.985	53.738*
3.	Interval training	12.869±0.217	10.080±0.169	2.789	30.208*
4.	Control Group	12.980±0.228	12.896±0.201	0.084	0.773

The Significant at 0.05 level of confidence, 't' 0.05 (29) = 2.045. . the study clearly reveals that all the experimental groups improved significantly yielding 't' value of 26.451, 53.738 and 30.208 with regard to circuit training, plyometric training and interval training, respectively, where as the control group did not show any significant improvement in sit ups performance of subjects indicating 't' values of 0.773. The Significant at 0.05 level of confidence , N = 120, B = Between group variance, W = Within group variance. The analysis of covariance for one mile run/walk showed that the resultant 'F' ratio of 0.068 was not significant in case of pre test means. The post test means yielded 'F' ratio of 65.312, which was found to be significant. The adjusted final means yielded the 'F' ratio of 379.098 and was found to be highly significant. The Significance at 0.05 level. It is clear from the mean differences with respect to performance in one mile run/walk of all the experimental groups were found to be significantly better than that of control group with decreased numerical value.

Table shows the Significance of Difference between Pre-Test and Post-Test Means of the three Experimental Groups and the Control Group in Sit and Reach

Sl.No	Groups	Pre-test mean	Post-test mean	Diff. between means	't' ratio
1.	Circuit training	25.900±0.522	29.733±0.431	3.833	13.129*
2.	Plyometric training	25.800±0.463	29.633±0.417	3.833	15.363*
3.	Interval training	25.800±0.564	29.833±0.431	4.033	13.740*
4.	Control Group	25.867±0.552	25.833±0.424	0.033	0.162

The Significant at 0.05 level of confidence, 't' 0.05 (29) = 2.045. Table 13 reveals that all the experimental groups improved significantly yielding 't' value of 13.129, 15.363 and 13.740 with regard to circuit training, plyometric training and interval training, respectively, where as the control group did not show any significant improvement in sit and reach performance of subjects indicating 't' values of 0.162. The Significant at 0.05 level of confidence, N = 120, B = Between group variance, W = Within group variance. The analyses of variance for sit and reach test performance showed that the resultant 'F' ratio of 0.009 was not significant in case of pre test means. The post test means yielded 'F' ratio of 21.002, which was found to be significant. The adjusted final means yielded the 'F' ratio of 85.981 and was found significant. The Significance at 0.05 level, It is evident from the mean differences with respect to sit and reach of all the experimental groups were found to be significantly greater than that of control group. Further, significant difference between interval training group and other two experimental groups was observed making interval group significantly superior.

Conclusion

Sports training in a nutshell means preparing for a performance and it helps the athletes to build strength, endurance it gradually improves their skill levels and their strengthen confidence. As simple it may be sound for formulating the systematic training method that fulfils all the physical goals to be perfect.

The training program has a significant impact on the desired outputs and the training must be relevant to the purpose and sport that intend to pursue. The finding of the study revealed that the three experimental groups, administered with circuit training, plyometric training and interval training showed significant gains in performance of motor fitness components after administration of training for duration of 6 weeks. The control group did not show any significant increase in the performance of any variable under study. Plyometric training schedule could enhance the performance in sit ups with higher intensity than both circuit and interval training. Similarly interval training could prove to be significantly better than both circuit and plyometric training towards enhancing performance of subjects in sit and reach test. Above all each fitness parameters under present study was improved through all three

trainings. The results of the study coincided with the general conception that plyometric exercise improves speed and agility, circuit training helps improve strength and endurance and interval training helps flexibility and endurance of the players in a progressive manner.

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Effects of Weight Training Program on Selected Physiological Components of Kakatiya University Kabaddi Players

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Abstract:

To elicit a central circulatory training effect, the training activity should produce a heart rate between 120 and 140 beats per minute for at least five minutes. Jogging, swimming, and cycling are good examples of activities to use as training media. However, they should be performed at a sub maximum level to prevent major mobilization of anaerobic processes. This involves the intensity and duration of exercise. If a trainee jogs at 80 percent of maximum for 30 minutes, depending somewhat on that person's level of fitness, the major energy source should be the oxygen-transport system (aerobics). This type of training influences muscle capillaries and fuel storage, myocardial efficiency through increased contractile power and stroke volume, and the respiratory processes. **Objective of the study:** The study is to determine the effects of weight training program on selected physiological components of Kakatiya University Kabaddi Players. **Hypothesis:** There may not be any significant difference on selected physiological components of Kakatiya University Kabaddi Players in relation to weight training program. **Material and Methods:** For the purpose of the study 50 students were selected randomly in the age group of 18 to 24 years of Kakatiya University Kabaddi Players. All the subjects were having four day weight training program. A specific weight training programme was conducted for the duration of seven weeks. The following physiological components were selected for the study- Hemoglobin and Cardio-Vascular endurance. Pre and post tests were conducted before and after the systematic training programme. **Tools used:** Hemoglobin: Sahli Hemometer was used to measure hemoglobin percentage in gm/100ml. Cardio-Vascular endurance: Hard-ward step test was used to measure Cardio-Vascular endurance. **Results & Discussions**: Table-1 indicates that the obtained 't' value of (0.959) between pre and post of college students in hemoglobin was found to be insignificant at 0.05 level of confidence as we obtained value of (2.00). Table-2 indicates that the obtained 't' value of (4.595) between pre and post of college students in cardio-vascular endurance was found to be significant at 0.05 level of confidence as we obtained value of (2.00). **Conclusion**: It is concluded that the effect of seven weeks weight training program had shown improved performance with regard cardiovascular endurance which is significant and in hemoglobin performance is improved but it is insignificant.

Introduction

To elicit a central circulatory training effect, the training activity should produce a heart rate between 120 and 140 beats per minute for at least five minutes. Jogging, swimming, and cycling are good examples of activities to use as training media. However, they should be performed at a sub maximum level to prevent major mobilization of anaerobic processes. This involves the intensity and duration of exercise. If a trainee jogs at 80 percent of maximum for 30 minutes, depending somewhat on that person's level of fitness, the major energy source should be the oxygen-transport system (aerobics). This type of training influences muscle capillaries and fuel storage, myocardial efficiency through increased contractile power and stroke volume, and the respiratory processes.

Exercise must be frequent-daily if possible-but under ideal conditions three times per week might be enough. Duration, intensity, and frequency are basic in any fitness program. Exercise must be carried past a feeling of discomfort or perhaps even pain, a point that is frequently referred to as one's psycho logic limits. As tolerance for exercise is increased the individual can begin to reduce the difference between psycho logic and physiologic limits. It is at this point in training with repetition of sessions of intensive type of activity that the trainee begins to experience the phenomenon of "second wind" a physiologic adjustment of the cardio respiratory system to the increased demands for oxygen and the elimination of the oxidation products. When second wind occurs, the participant obtains relief from the distress and discomfort of breathlessness and lethargy and is able to continue effort with renewed vigor and efficiency. While the physiologic basis of second wind is not clearly understood, the changes in several physiologic basis of second wind is not clearly understood, the changes in several physiologic functions an onset are easily distinguished. There appear to be adaptations in not only the cardio respiratory system, but also the muscles, peripheral circulation, and the brain.

Another principle involved in fitness concerns the application of the overload. This principle is in operation when the exercise load is increased in intensity. Muscles gain in size and strength in only one of two ways; through maturation and through the application of the overload principle. This principle can be applied in three ways; (1) by increasing the resistance (weights, etc.), (2) by increasing the speed of repetitions, and (3) by increasing the number of repetitions.

Objective of the study:

The study is to determine the effects of weight training program on selected physiological components of Kakatiya University Kabaddi Players**.**

Hypothesis:

There may not be any significant difference on selected physiological components of Kakatiya University Kabaddi Players in relation to weight training program.

Material and Methods:

For the purpose of the study 50 students were selected randomly in the age group of 18 to 24 years of at Kakatiya University Kabaddi Players. All the subjects were having four day weight training program. A specific weight training programme was conducted for the duration of seven weeks. The following physiological components were selected for the study- Hemoglobin and Cardio-Vascular endurance. Pre and post tests were conducted before and after the systematic training programme.

Tools used

- Hemoglobin: Sahli Hemometer was used to measure hemoglobin percentage in gm/100ml.
- Cardio-Vascular endurance: Hard-ward step test was used to measure Cardio-Vascular endurance.

Weight training programme was adopted for the study.

Day	Components	Type	Sets and Repetition
1 & 4	Chest	Bench press	3X8
		Inclined Bench press	2X8
		Parallel bar dips	2X capacity Reps
	Shoulders	Front Press	2X8
		Side raises or bend over lateral raises or front raises	2X8
	Triceps	Triceps Barbell extensions	2X8
		Pulley push down or French press or kick back or triceps dips	1-2X8
	Abs	Sit-ups or leg raises	2X20 slow
2 & 5	Legs	Calf raises	2X maximum reps
		Squats	3X8
		Leg Curls	1X8

	Back	Chinning	2X maximum reps
		Lats pull down	2X8
		Ground pulley or T-bar rows or barbell rows or dumbbell rows	2X8
	Biceps	Barbell Curls	2X8
		Bumble Curls or preacher curls or concentrate curls or hammer curls	1-2X8
	Traps	Shrugs	2X8
		Cardios-20-30 minuets if one is over weight	
3, 6& 7		Rest not even abs or running etc.	

Results & Discussions:

Table 1 shows the Significance difference of mean of hemoglobin between pre and post test

Variable	Test	Mean	S D	SE	MD	Ot	Tt
Hemoglobin	Pre	14.186	0.875	0.21	0.202	0.959	2.00
	Post	14.389	0.755				

Table-1 indicates that the obtained 't' value of (0.959) between pre and post of college students in hemoglobin was found to be insignificant at 0.05 level of confidence as we obtained value of (2.00).

Table-2 shows the Significance difference of mean of cardio-vascular endurance between pre and post test

Variable	Test	Mean	S D	SE	MD	Ot	Tt
Cardio Vascular endurance	Pre	67.033	4.180	1.21	5.575	4.595	2.00
	Post	72.608	5.165				

Table-2 indicates that the obtained 't' value of (4.595) between pre and post of college students in cardio-vascular endurance was found to be significant at 0.05 level of confidence as we obtained value of (2.00).

Conclusion

It is concluded that the effect of seven weeks weight training program had shows improved performance with regard cardiovascular endurance which is significant and in hemoglobin performance is improved but it is insignificant on Kakatiya University Kabaddi Players.

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A Study on Health and Fitness for Healthy Modern Lifestyle

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Abstract:

The most widely accepted definition of health is that of the World Health Organization Constitution. The study is to determine the organic / physical fitness & yoga for healthy modern technological lifestyle, the past modern life style patterns lead to adopting sedentary life style which combines eating high calorie diet and lack of physical activity. They are major risk factors for getting a lot of different diseases. The sedentary life style includes the wrong use of available high technology machines, transportation as well food habits.To maintains a healthy lifestyle, the importance of physical activity cannot be underestimated. It is the single most important endeavor that one can participate in to promote health throughout a lifetime. For decades, epidemiological research has accumulated highlighting the health benefits associated with regular physical activity. Furthermore, there is overwhelming research illustrating the morbid and mortal consequences of being sedentary. The benefits of a proper exercise regimen include: Increase in the efficiency of cardiovascular and respiratory function. Reduction in coronary artery disease risk factors o Reduction in blood pressure o Increase in HDL and decreased triglycerides o Reduction of body fat o Reduced insulin needs, improved glucose tolerance + Decreased incidence of type II Diabetes. Decrease in mortality and morbidity o Decreased incidence of Coronary/vascular disease o Decreased chance of cancer + Breast + Prostate + Lung + Colon o Decreased chance of osteoporosis o Increased balance + Decreases incidence of falling o Decrease in anxiety and depression o Enhanced performance of work, recreational, and sports activities o Enhanced feelings of well-being. Technology will certainly influenced the way we live now and in the future but is it for the best or the worst is hard to tell. The man has been trying his best to bring more and more comfort and happiness to his life by discovering various devices so as to get the work done in minimum time and with least physical efforts and expenditure of energy. Physical fitness and Yoga is a powerful system which coordinates our scattered feelings, inner peace and relations with others in a systematic way so that we become aware of many things inside us. Yoga techniques are based on the stretching principle which would create balance in all the opposing factors and to bring about equilibrium, peace and unity in body and mind. Regular physical activity helps develop child's movement skills. It also, helps bones become stronger and builds a healthy heart and stronger muscles. Physical activity also helps to keep a healthy body weight. Moderate intensity exercise can even help to

relieve some chronic (long-term) pain conditions by maintaining physical function and decreasing fatigue. Aside from providing general physical benefits, regular activity can also help ease symptoms of premenstrual syndrome in girls.

Introduction

The most widely accepted definition of health is that of the World Health Organization Constitution. It states: "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1946). In more recent years, this statement has been amplified to include the ability to lead a "socially and economically productive life". The WHO definition is not without criticism; mainly that it is too broad. Some argue that health cannot be defined as a state at all, but must be seen as a dynamic process of continuous adjustment to the changing demands of living. In spite of its limitations, the concept of health as defined by WHO is broad and positive in its implications, in that it sets out a high standard for positive health. The most solid aspects of wellness that fit firmly in the realm of medicine are the environmental health, nutrition, disease prevention, and public health matters that can be investigated and assist in measuring well-being.

Technological life style

Modern technology has definitely made a big impact on the entire globe, mainly through the worldwide connections promoted by the Internet, cell phone technology and hand-held calculation. Technology has indeed improved our lives. With the help of electronic components, we are able to read books online. Even the way students learned have changed, today they do not have to go to the library to look for notes and do their research works. Sitting at home, they download reports and eBooks. People used to grind lots of spices in mortar but with the mixer grinder, mothers' in the kitchen do not have to make much effort to grind the spices. To wash clothes, women either used to go to the river or they washed clothes on a concrete rock. It is no more the case; everybody owns a washing machine nowadays. Therefore, household appliances have facilitated our lives in many ways. Electronic component is not always beneficial as we think. Along with its existence, it has changes our lives drastically. Lots of issues have cropped in many lives, especially in the social life. Due to technology, many people rarely communicate with their parents, neighbours, some of them do not even have friends. Problematic like isolation, hypertension, obesity, and other health diseases and family problems are sprouting.

Technology has had and will keep affecting our lifestyle. With an excessive use of High Tech appliances, many adults and children as well have become obese. Remaining sitting all the in an office, will obviously affect our health. Even adults are at risks in concerned with their health. Besides playing on games and working on their laptops and computers, they do not rely on any other activities. Secondly, due to obesity, children and adults have caught diseases like diabetes, hypertension, depression, and many other diseases. Nowadays, many people have to

undergo treatment due to such illness. People no more complete their eight hours of sleep. They do not have proper meal and some do not eat well. Hence, all these diseases have cropped up.

With the arrival of technology, everyone owns a laptop and a Smartphone. With the routine life, both parents work nowadays and children rarely speak with their parents. After school, the children go to their rooms, and start surfing. Moreover, they even dine in their rooms. They do not even go out for jogging or to have fresh air, hence, to speak or remember the name of their neighbour is far away. They keep sitting in front of their screen. The weird thing is that, they will prefer to talk to a stranger through social media rather than going out and have a chat with their friends. At office we prefer to communicate through Skype or send emails instead of talking face to face to our colleagues. All those great devices that are supposed to help us to communicate are changing deeply our way of communication. Due to the lack of communication, technology has brought a drastic change in our lives. In any society, there are different cultural groups based on particular ethnicity. Though cultures vary, yet the common components like symbol, language, values, festivals and norms make social life possible. No doubt globalization has affected our life and has turned the world into a global village. Children no more play traditional games, like hide and seek and chit-chat with their neighbours.

Health

An increasing number of studies and reports from different organizations and contexts examine the linkages between health and different factors, including lifestyles, environments, health care organization, and health policy – such as the 1974 Lalonde report from Canada; the Alameda County Study in California; and the series of World Health Reports of the World Health Organization, which focuses on global health issues including access to health care and improving public health outcomes, especially in developing countries.

The concept of the "*health field,*" as distinct from medical care, emerged from the Lalonde report from Canada. The report identified three interdependent fields as key determinants of an individual's health. These are:

- Lifestyle: the aggregation of personal decisions (i.e., over which the individual has control) that can be said to contribute to, or cause, illness or death;
- Environmental: all matters related to health external to the human body and over which the individual has little or no control;
- Biomedical: all aspects of health, physical and mental, developed within the human body as influenced by genetic make-up.

The maintenance and promotion of health is achieved through different combination of physical, mental, and social well-being, together sometimes referred to as the *"health triangle."* The WHO's 1986 *Ottawa Charter for Health Promotion* further stated that health is not just a state, but also "a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities."

Focusing more on lifestyle issues and their relationships with functional health, data from the Alameda County Study suggested that people can improve their health via exercise, enough sleep, maintaining a healthy body weight, limiting alcohol use, and avoiding smoking. The ability to *adapt* and to *self manage* has been suggested as core components of human health.

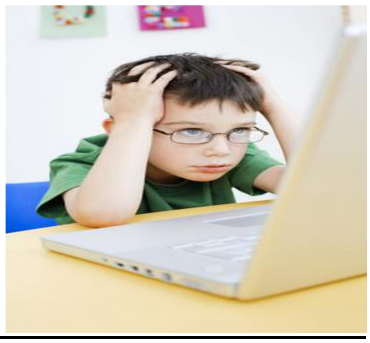
The environment is often cited as an important factor influencing the health status of individuals. This includes characteristics of the natural environment, the built environment, and the social environment. Factors such as clean water and air, adequate housing, and safe communities and roads all have been found to contribute to good health, especially to the health of infants and children. Some studies have shown that a lack of neighborhood recreational spaces including natural environment leads to lower levels of personal satisfaction and higher levels of obesity, linked to lower overall health and well being. This suggests that the positive health benefits of natural space in urban neighborhoods should be taken into account in public policy and land use.

Genetics, or inherited traits from parents, also play a role in determining the health status of individuals and populations. This can encompass both the predisposition to certain diseases and health conditions, as well as the habits and behaviors individuals develop through the lifestyle of their families. For example, genetics may play a role in the manner in which people cope with stress, mental, emotional or physical.

Objective of the study

The study is to determine the organic / physical fitness & yoga for healthy modern technological lifestyle, the past modern life style patterns lead to adopting sedentary life style which combines eating high calorie diet and lack of physical activity. They are major risk factors for getting a lot of different diseases. The sedentary life style includes the wrong use of available high technology machines, transportation as well food habits.





Impact of Lifestyle on Health

In recent decades, life style as an important factor of health is more interested by researchers. According to WHO, 60% of related factors to individual health and quality of life are correlated to life style. Millions of people follow an unhealthy lifestyle. Hence, they encounter illness, disability and even death. Problems like metabolic diseases, joint and skeletal problems, cardio-vascular diseases, hypertension, overweight, violence and so on, can be caused by an unhealthy lifestyle. The relationship of lifestyle and health should be highly considered.

Today, wide changes have occurred in life of all people. Malnutrition, unhealthy diet, smoking, alcohol consuming, drug abuse, stress and so on, are the presentations of unhealthy life style that they are used as dominant form of lifestyle. Besides, the lives of citizens face with new challenges. For instance, emerging new technologies within IT such as the internet and virtual communication networks, lead our world to a major challenge that threatens the physical and mental health of individuals. The challenge is the overuse and misuse of the technology. Therefore, according to the existing studies, it can be said that lifestyle has a significant influence on physical and mental health of human being.

Discussion & Finding of the study

To maintain a healthy lifestyle, the importance of physical activity cannot be underestimated. It is the single most important endeavor that one can participate in to promote health throughout a lifetime. For decades, epidemiological research has accumulated highlighting the health benefits associated with regular physical activity. Furthermore, there is overwhelming research illustrating the morbid and mortal consequences of being sedentary. The benefits of a proper exercise regimen include:

- Increase in the efficiency of cardiovascular and respiratory function
- Reduction in coronary artery disease risk factors o Reduction in blood pressure o Increase in HDL and decreased triglycerides o Reduction of body fat o Reduced insulin needs, improved glucose tolerance + Decreased incidence of type II Diabetes
- Decrease in mortality and morbidity o Decreased incidence of Coronary/vascular disease o Decreased chance of cancer + Breast + Prostate + Lung + Colon o Decreased chance of osteoporosis o Increased balance + Decreases incidence of falling o Decrease in anxiety and depression o Enhanced performance of work, recreational, and sports activities o Enhanced feelings of well-being

Undoubtedly, results reaped from participation in regular physical activity are second only to those of the fountain of youth. It is the only lifestyle choice that not only adds years to one's life, but adds life to one's years. Within the general population, the health benefits associated with increases in physical activity are overwhelming. Chronic diseases, their complications, and associated costs would be decreased drastically if our sedentary

population simply became more active. Perhaps the most promising information regarding physical activity and health is the fact that the most significant health benefits of exercise are seen in those sedentary individuals who become moderately active. Furthermore study the physical activity need not be vigorous to attain health benefits. Mounting epidemiological research is bringing about increasing momentum to promote regular physical activity as a means of preventative medicine.

Yoga in modern lifestyle

Yoga helps in building physical and mental health of an individual. Yogasana is a scientific procedure of exercise which affects the inmost parts of the body. Today, everybody has conviction about Yoga practices towards the prevention of disease, maintenance and promotion of health. Millions and millions of people across the globe have benefitted by the practice of Yoga and the practice of Yoga is blossoming and growing more vibrant with each passing day.

Yoga has become a part and parcel of Physical Educational and it is getting its due weight age at various levels such as Schools, Colleges, Clubs and Senior Citizens are also doing yogic practices to delay the ageing process and to avoid various medical ailments. Studies on Padmasana, Siddhasana, Pachimottanasana, Bhujangasana, Dhanurasana, Kurmasana etc., have revealed some degree of specificity in terms of Cardio-respiratory adjustments. Various studies have shown that regular practice of asanas and pranayama can help aliments like arthritis, arteriosclerosis, chronic fatigue, astama, varicose veins, heart conditions, temperature, heart beat and blood pressure. practice yoga to avoid the disastrous consequences of the sedentary urban lifestyle. A set of yogic postures combined with pranayama, if practiced daily, can protect from modern lifestyle diseases.

- Surya Namaskar is not only a great warm up exercise but it also helps to shed those extra pounds.
- Cobra Pose strengthens the upper back and helps correct the bad posture caused by long desk jobs.
- Eye, neck, shoulder, wrist and ankle rotations help counter stiffness whilst sitting at a desk.
- Shalabhasana relieves lower back pain that is caused by hours of perching on a chair.
- Downward Dog Pose and Sarvangasana help to reverse the blood flow in your body, thereby preventing baldness and premature graying.
- Gomukhasana prevents cervical pain, which is becoming increasingly common. This asana can be practiced while seated on a chair.

Yogic exercises recharge the body with cosmic energy. This facilitates

- Attainment of perfect equilibrium and harmony Promotes self- healing.
- Removes negative blocks from the mind and toxins from the body.
- Enhances Personal power

- Increases self-awareness
- Helps in attention focus and concentration, especially important for children
- Reduces stress and tension in the physical body by activating the parasympathetic nervous system

Benefits of Physical Fitness

Staying active means keeping your body functioning at a high level. Regular exercise will maintain the performance of your lungs and heart to most efficiently burn off excess calories and keep your weight under control. Exercise will also improve muscle strength, increase joint flexibility and improve endurance. Another main benefit of physical activity is that it decreases the risk of heart disease, the leading cause of death. Additionally, it can decrease your risk of stroke, colon cancer, diabetes and high blood pressure. Regular exercise has been long associated with a fewer visits to the doctor, hospitalization and medication. Exercising does not have to be something boring and dreaded. It can be something that you enjoy that helps to increase the overall happiness in your life, as well as relieve symptoms of stress, depression and anxiety. Try to find some activities that give you pleasure or even a buddy to do them with so that exercise is a fun and enjoyable activity.

Any type of moderate activity like walking, swimming, biking or organized sports can contribute to your physical fitness. Explore your fitness options at your local gym, community center or community college for courses and organized activities that may suit your lifestyle and interests. To get the most benefit, you should begin by warming up for 5 to 10 minutes to increase your blood flow and prepare your body for activity. Follow the warm up with several minutes of stretches to increase your flexibility and lower your risk for injury. Complete your selected exercise or activity for 20 to 30 minutes and conclude the workout with 5 to 10 minutes of cool down and stretching. Everyone! It is important for all people to stay active throughout their lives. Because of busy work and home lives, more than 75% of Indians do not get the recommended amount of physical fitness daily and these numbers generally increase with age. Throughout adulthood is one of the most important times to maintain an exercise regimen. This is the ideal time to maintain your weight, build strong bones and prevent many chronic health problems like high blood pressure, heart disease and diabetes. Many adults do too much exercise at once. After a long work-week, many people try to fit lots of activity into the weekend and push their bodies excessively. This sudden increase in activity can raise the risk of injury which would then stop activity for weeks. Experts recommend working out several times over the course of a week with varying exercises for the most benefit to your health.

Conclusion

Technology will certainly influenced the way we live now and in the future but is it for the best or the worst is hard to tell. The man has been trying his best to bring more and more comfort and happiness to his life by discovering various devices so as to get the work done in minimum time and with least physical efforts and expenditure of energy. Physical fitness and Yoga is a powerful system which coordinates our scattered feelings,

inner peace and relations with others in a systematic way so that we become aware of many things inside us. Yoga techniques are based on the stretching principle which would create balance in all the opposing factors and to bring about equilibrium, peace and unity in body and mind. Regular physical activity helps develop child's movement skills. It also, helps bones become stronger and builds a healthy heart and stronger muscles. Physical activity also helps to keep a healthy body weight. Moderate intensity exercise can even help to relieve some chronic (long-term) pain conditions by maintaining physical function and decreasing fatigue. Aside from providing general physical benefits, regular activity can also help ease symptoms of premenstrual syndrome in girls.

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A Study on Selected Physical Fitness Variables among Kabaddi & Kho – Kho Players of Osmania University

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Abstract:

Sports is all forms of usually competitive physical activity which, through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectators. Hundreds of sports exist, from those requiring only two participants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. Physical fitness is not an end in itself but it is a means to an end. It provides us with a basis for optimal physiological health and capacity to enjoy a full life. The proposed objectives of the present study were follows. To measure the present level of Speed & Explosive Strength between Kabaddi & Kho- Kho Players of Osmania University. **Hypothesis** There may not be any significant difference between Kabaddi & Kho- Kho Players of Osmania University in relation to Speed& Explosive Strength**. Methods & materials:** The present study was delimited on the following aspects such as: Only 30 Kabaddi Players and 30 Kho- Kho Players of Osmania University were considered. The age of the subjects were ranged from 18 to 22 years. The physical fitness components i.e.- Explosive strength and speed considered for the present study. **Results and Discussion:** The mean score (2.38) the Explosive Strength of physical fitness in Kabaddi players is high than the mean score (2.31) of kho – kho players of Osmania university. However, the t-ratio is 1.4 which is significant at 0.05 level. High score better speed. It means that Kabaddi players of have better Explosive Strength of physical fitness than the kho - kho players of Osmania university. The mean score (7.79) of the speed component of physical fitness of kabaddi players is high than the mean score (7.17) of kho-kho players of Osmania university. However, the t-ratio is 3.88 which is significant at 0.05 level. High score better speed. It means that kabaddi players have better speed of physical fitness than the kho- kho players of Osmania University. **Conclusion:** On the basis of the analysis of data the Kabaddi players were having better mean values among speed and Explosive strength than kho- kho players of Osmania University.

Key Words: Physical fitness, Speed and Explosive Strength

Introduction

Sports is all forms of usually competitive physical activity which, through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectators. Hundreds of sports exist, from those requiring only two participants,

through to those with hundreds of simultaneous participants, either in teams or competing as individuals. Physical fitness is not an end in itself but it is a means to an end. It provides us with a basis for optimal physiological health and capacity to enjoy a full life. As we regularly need food, rest and sleep so do we need daily exercise for the maintenance of our physical capabilities. Physical fitness is a pre-requisite not only for excellence in competitive sport but is also closely related to defense and economic potential of a nation and for the quality of individual and social life. Physical fitness is a general concept defined in many ways by differing scientists. Here two major categories are considered: general fitness (a state of health and well-being), and specific fitness (a task oriented definition based on the ability to perform specific aspects of sports or occupations).

Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. Physical fitness used in two close meaning: General fitness (a state of health and well being) and Specific fitness (a task oriented definition based on the ability to perform specific aspects of sports or occupation). Physical fitness is the capacity of the heart, blood vessels, lungs and muscles to function at optimum efficient. IN previous years, fitness was destined as the capacity to carry out the day activities without undue fatigue. Automation, increased leaisure time and changes in life style following the industrial revolution meant this criterion will be no longer sufficient. Optimum efficiency is the key. Physical fitness is now defined as the body's ability to function efficiently and effectively in work and leisure activities to be healthy, to resist hypo kinetics diseases and to meet emergency situations.

Objectives of the Study

The proposed objectives of the present study were follows.

- To measure the present level of Speed between Kabaddi & Kho- Kho Players of Osmania University.
- To measure the present level of Explosive Strength between Kabaddi & Kho- Kho Players of Osmania University.

Hypothesis of the study

- There may not be any significant difference between Kabaddi & Kho- Kho Players of Osmania University in relation to Speed.
- There may not be any significant difference between Kabaddi & Kho- Kho Players of Osmania University in relation to Explosive Strength.

Methods & materials:

The present study was delimited on the following aspects such as: Only 30 Kabaddi Players and 30 Kho-Kho Players of Osmania University were considered. The age of the subjects were ranged from 18 to 22 years. The physical fitness components i.e.- Explosive strength and speed considered for the present study. The criterion measures were used to collect the data in a deal and systematic way to record in a correct unit and style for each test item. Explosive leg strength was measured by Standing Broad Jump test and scores were recorded in centimeters. Speed was measured by 50 Yards Dash and time was recorded to the nearest 1/100 of a second with the help of

digital stopwatch. Statistical Techniques Used For the present study, the mean value, standard deviation, 't' test were applied to analyze the data.

Results and Discussion

Table 1 shows the Comparison of Explosive Strength Component of Kabaddi & Kho- Kho Players of Osmania University in Standing Broad Jump.

Variable	Pre -test		Post test		SEd.	t-ratio	Level of significant
	Mean	S.D.	Mean	S.D.			
Strength (Standing Broad Jump)	2.38	0.23	2.31	0.1	0.05	1.4	significant

Graph 1 showing Comparison of Explosive Strength Component of Kabaddi & Kho- Kho Players of Osmania University in Standing Broad Jump.

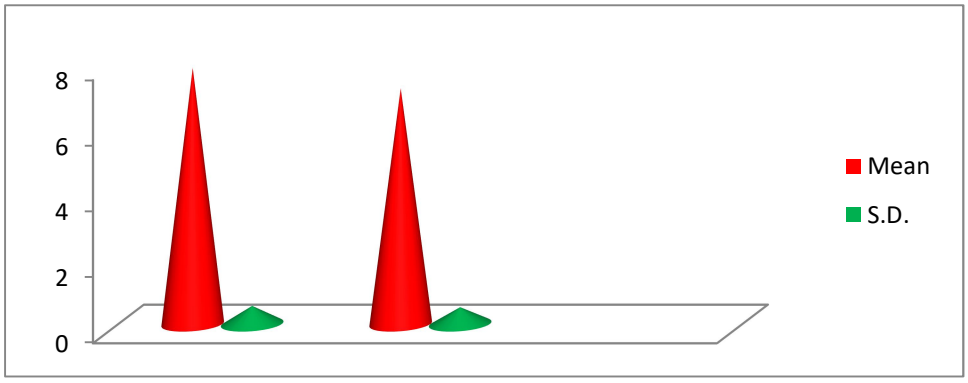
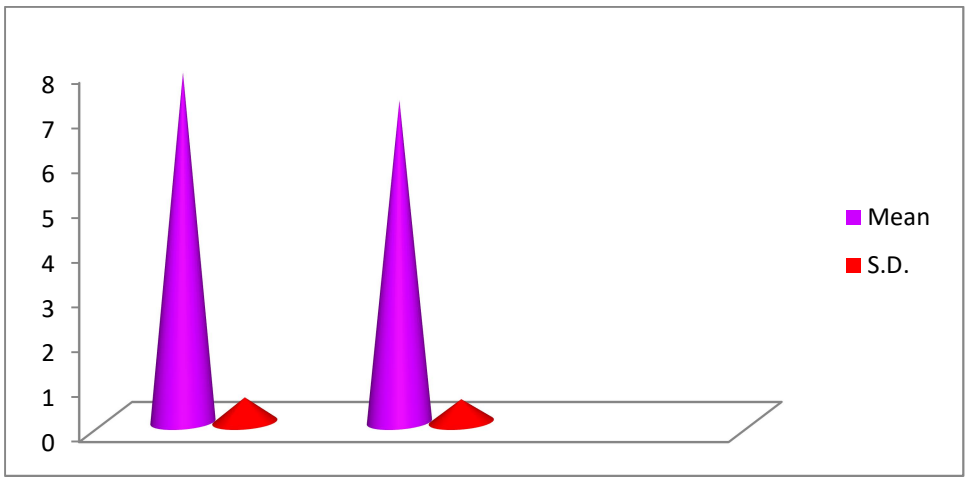


Table 2 showing the Comparison of Speed Component of Kabaddi & Kho- Kho Players of Osmania University in speed

Variable	Pre -test		Post test		S Ed.	t-ratio	Level of significant
	Mean	S.D.	Mean	S.D.			
Speed	7.79	0.55	7.17	0.51	0.16	3.88	significant

Graph showing Comparison of Speed Component of Kabaddi & Kho- Kho Players of Osmania University in speed



Finding & Discussions:

The mean score (2.38) the Explosive Strength of physical fitness in Kabaddi players is high than the mean score (2.31) of kho – kho players of Osmania university. However, the t-ratio is 1.4 which is significant at 0.05 level. High score better speed. It means that Kabaddi players of have better Explosive Strength of physical fitness than the kho - kho players of Osmania university. The mean score (7.79) of the speed component of physical fitness of kabaddi players is high than the mean score (7.17) of kho- kho players of Osmania university. However, the t-ratio is 3.88 which are significant at 0.05 levels. High score better speed. It means that kabaddi players have better speed of physical fitness than the kho- kho players of Osmania University.

Conclusion:

On the basis of the analysis of data the Kabaddi players were having better mean values among speed and Explosive strength than kho- kho players of Osmania University.

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Effect of Specific Training on Selected Motor Fitness and Skill Variables of Female High School Table Tennis Players

K. Mamatha

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Abstract

The present study is to find out the effect of specific training on selected motor fitness and skill variables of female high school table tennis players. 20 students were selected from nearby schools of Govt. High School Chunchupali, Badradri Kothagudam dist. The age of the subjects range from 13 and 15 years. They were divided into two groups of 10 in each. One group was acted as the experimental group and another group was acted as control group. The experimental group underwent the specific training for eight weeks 3 days per week. Each training session was for one hour in the evening from 3.00 PM to 4.00 PM. To achieve the result, the collected data on following criterion measures namely motor fitness variables like agility were also tested and skill variables like forehand drive. The standardized tests were taken before and after the specific training. The paired't' test was applied to analyze the collected data and in all cases the criteria for the statistical significance was set at 0.05 level of confidence. It is conclude that the specific training significantly increased the agility and back hand of high school table tennis players. Keywords specific training agility and forehand drive.

Table Tennis

Table tennis, a recreational activity and an Olympic sport since 1988, is also known by the term 'ping-pong'. Though it is excluded from official terminology, this name is very popular today. It notably originates from the onomatopoeic sound of the ball that appeared in the Far East in 1884: 'ping' is imitative of the sound of a bat striking a ball and 'pong' equates to the sound of the bounce on the table. Does the history of table tennis intrigue you? Settle in comfortably then and let yourself be guided through the beginning of time. It was in England, in the late 19th century, that table tennis made its appearance. Taking inspiration from lawn tennis, the first players belonged to middle-class Victorian society. The first game would have been played using a champagne cork as a ball, cigar boxes as bats and books for the net. At that point, table tennis was seen as a mere distraction for the wealthy classes. In 1890, Englishman David Foster, attracted by its wide appeal, introduced the first game of tennis on a table. In 1897, the first national championships were organized in Hungary. Following a trip to the United States, in 1901 James Gibb brought back the first celluloid ball, which was a lot lighter than the rubber balls. A year later, in 1902, E.C. Gould, a British enthusiast of the game, introduced the first bats covered in rubber and rubberized pimples. It was game on for the history of table tennis!

Statement of the Problem

The present study was to find out the effect of specific training on the selected motor fitness, and skill variables of female high school table tennis players.

Delimitations

The following delimitations are considered for the study

1. This study is confined to 20 school female table tennis players from Govt. High School Chunchupali, Badradri Kothagudam dist. (TS)
2. The subjects were selected only from the age group of 13 and 15 years.
3. Only selected motor fitness and skill variables were chosen for this study
4. The duration of the experimental period was for eight weeks.
5. The study is confined only to the selected specific training.

Limitations

The following limitations are considered for the study.

1. The factors like personal habits, life style, routine, diet, climatic conditions and environmental factors which might have had an effect on the results of this study could not be taken into consideration.
2. Hereditary, social and other psychological factors could not be controlled.

Hypotheses

1. It was hypothesized that there may be significant differences due to specific training on the selected motor fitness variables namely agility.
2. It was hypothesized that there may be significant differences due to specific training on the selected skill variables namely forehand drive.

Significance of the Study

1. The study will be helpful to know the effect of specific training on selected motor fitness skill variables of female high school table tennis players.
2. The study will be helpful to prepare training schedule to improve the effect of specific training on the selected motor fitness & skill variables of female high school table tennis players.
3. The study will be helpful to realize table tennis players and coaches for their coaching purpose.

Methodology

Selection of subjects

The purpose of the study was to find out the effect of specific training on the selected motor fitness and skill variables of female high school table tennis players. For this purpose, 20 students were selected as subjects from Govt. High School Chunchupali, Badradri Kothagudam Dist. (TS) by applying random sampling method. The age of the subjects ranged from 13 to 15 years.

Selection of variables

Independent variable

Specific group of exercises

Dependent Variables

- **Physical Fitness Variables**
  1. Agility
- **SKILL VARIABLES**
  1. Fore hand Drive

TABLE -1 Selection of Tests and Unit of Measurements

Variables	Name of the test	Unit of measurements
Agility	5 X10 Meters Shuttle run	seconds
Forehand Drive	Subjective rating	Points

Experimental Design

The selected subjects (N=20) were divided into two groups each consisting of ten. The experimental group underwent the specific training for three days in a week for one hour from 3.00 pm to 4.00 pm for six weeks in total and the control group was not involved in any specific training but were of the investigator in engaged in their usual activities.

Statistical Techniques

The following statistical procedures were employed to estimate the effect of specific training on the selected physical fitness and skill variables of female high school table tennis players. 't' ratio was calculated to findout the significance difference between the mean of pre and post test of the group

Formulae

Mean = $\frac{\Sigma X}{N}$ 't' = $\frac{DM}{\sigma DM}$

DM – difference between the mean

Table-II: Table Showing Mean Difference Standard Deviation And 'T' Value Of Experimental And Control Groups In Agility.

Group	Mean	Md	SD	Std.error of the mean	't'	Table value
Experimental pre-test	18.37	2.18	0.48	0.68	9.82*	2.14
Experimental post test	16.19		0.41	0.51		
Control pre test	18.32	0.03	0.24	0.05	1.43	2.14
Control post test	18.29		0.21	0.06		

*significant at 0.05 level

Figure-2: Bar Diagram Showing Pre and Post Test Mean Value of Experimental Group and Control Group in Agility

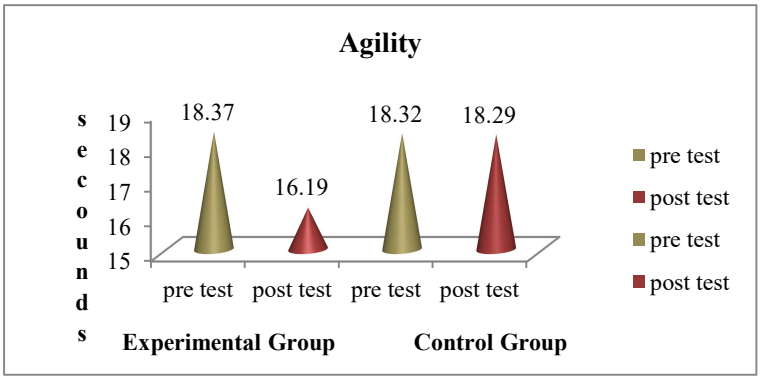
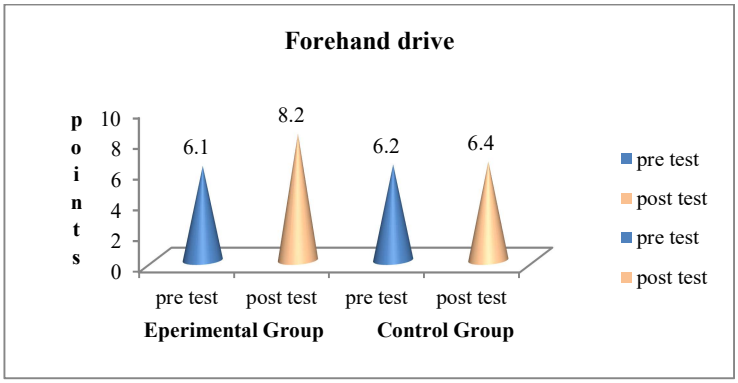


Table-III: Table Showing Mean Difference Standard Deviation and 't' Value Of Experimental and Control Groups In Back Hand

Group	Mean	Md	SD	Std.error of the mean	't'	Table value
Experimental pre-test	6.10	2.10	0.84	0.27	8.67*	2.14
Experimental post test	8.20		0.63	0.20		
Control pre test	6.20	0.20	0.83	0.21	1.87	2.14
Control post test	6.40		0.66	0.16		

*significant at 0.05 level

Figure-2: Bar Diagram Showing Pre and Post Test Mean Value of Experimental Group and Control Group in Back Hand



Discussion on Findings

The result of the study shows that the experimental group that had undergone specific training and improved motor fitness variables namely agility and skill variables namely forehand drive. This may be due to the effect of specific training. From the result of the present study, it is concluded that the experimental group improved in motor fitness and skill variables.

Conclusions

Based on the statistical analysis and the limitation of the study, and results the following conclusions are drawn.

- It was concluded that experimental group significantly improved on motor fitness variables namely agility.
- It was concluded that experimental group significantly improved on skill variables namely fore hand drive.
- Further it was concluded that the control group shows insignificant improvement on motor fitness and skill variables.

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Effects of Yogic Practice on Selected Physical Fitness and Psychological Variables Of Male High School Table Tennis Players

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Abstract

The present study is to find out the effect of yogic practice on selected physical fitness and psychological variables of male high school table tennis players. 20 students were selected from nearby schools of Govt. High School Chunchupali, Badradri Kothagudam Dist. The age of the subjects range from 12 and 14 years. They were divided into two groups of 10 in each. One group was acted as the experimental group and another group was acted as control group. The experimental group underwent the yogic practice for six weeks 6 days per week. Each training session was for one hour in the evening from 4.00 PM to 5.00 PM. To achieve the result, the collected data on following criterion measures namely physical fitness variables like flexibility were also tested and psychological variables like stress. The standardized tests were taken before and after the yogic practice. The paired't' test was applied to analyze the collected data and in all cases the criteria for the statistical significance was set at 0.05 level of confidence. It is conclude that the yogic pracitice significantly increased the flexibility and stree of high school table tennis players. Keywords yogic practice flexibility and stress.

Table Tennis

Table tennis, a recreational activity and an Olympic sport since 1988, is also known by the term 'ping-pong'. Though it is excluded from official terminology, this name is very popular today. It notably originates from the onomatopoeic sound of the ball that appeared in the Far East in 1884: 'ping' is imitative of the sound of a bat striking a ball and 'pong' equates to the sound of the bounce on the table. Does the history of table tennis intrigue you? Settle in comfortably then and let yourself be guided through the beginning of time. It was in England, in the late 19th century, that table tennis made its appearance. Taking inspiration from lawn tennis, the first players belonged to middle-class Victorian society. The first game would have been played using a champagne cork as a ball, cigar boxes as bats and books for the net. At that point, table tennis was seen as a mere distraction for the wealthy classes. In 1890, Englishman David Foster, attracted by its wide appeal, introduced the first game of tennis on a table. In 1897, the first national championships were organized in Hungary. Following a trip to the United States, in 1901 James Gibb brought back the first celluloid ball, which was a lot lighter than the rubber balls. A year later, in 1902, E.C. Gould, a British enthusiast of the game, introduced the first bats covered in rubber and rubberized pimples. It was game on for the history of table tennis!

Statement of the Problem

The present study was to find out the effect of yogic practice on the selected physical fitness and psychological variables of male high school table tennis players.

Delimitations

The following delimitations are considered for the study

1. This study is confined to thirty school male table tennis players from Govt. High School Chunchupali, Badradri Kothagudam dist**.** (TS)
2. The subjects were selected only from the age group of 12 and 14 years.
3. Only selected physical fitness and psychological variables were chosen for this study
4. The duration of the experimental period was for six weeks.
5. The study is confined only to the selected yogic practice.

Limitations

The following limitations are considered for the study.

1. The factors like personal habits, life style, routine, diet, climatic conditions and environmental factors which might have had an effect on the results of this study could not be taken into consideration.
2. Hereditary, social and other psychological factors could not be controlled.

Hypotheses

1. It was hypothesized that there may be significant differences due to yogic practice on the selected physical fitness variables namely flexibility.
2. It was hypothesized that there may be significant differences due to yogic practice on the selected psychological variables namely stress.

Significance of the Study

1. The study will be helpful to know the effect of yogic practice on selected physical fitness and psychological variables of male high school table tennis players.
2. The study will be helpful to prepare training schedule to improve the effect of yogic practice on the selected physical fitness & psychological variables of male high school table tennis players.
3. The study will be helpful to realize table tennis players and coaches for their coaching purpose.

Methodology

Selection of Subjects

The purpose of the study was to find out the effect of yogic practice on the selected physical fitness and psychological variables of male high school table tennis players. For this purpose, 20 students were selected as subjects from Govt. High School Chunchupali, Badradri Kothagudam Dist**..** (TS) by applying random sampling method. The age of the subjects ranged from 12 to 14 years.

Selection of variables

Independent variable

Yogic Practice

Dependent variables

- **Physical fitness variables**
  2. Flexibility

- **Psychological Variables**
  1. Stress

Table -1: Selection of Tests and Unit of Measurements

Variables	Name of the test	Unit of measurements
Flexibility	Sit and reach test	seconds
Stress	Lazarus questionnaire	Score

Experimental Design

The selected subjects (N=20) were divided into two groups each consisting of 10. The experimental group underwent the yogic practice for six days in a week for one hour from 4.00 pm to 5.00 pm for six weeks in total and the control group was not involved in any yogic practice but were of the investigator in engaged in their usual activities.

STATISTICAL TECHNIQUES

The following statistical procedures were employed to estimate the effect of yogic practice on the selected physical fitness and psychological variables of male high school table tennis players. 't' ratio was calculated to findout the significance difference between the mean of pre and post test of the group

Formulae

Mean = $\frac{\Sigma X}{N}$ 't' = $\frac{DM}{\sigma DM}$

DM – difference between the mean

Table-Ii: Table Showing Mean Difference Standard Deviation and 'T' Value of Experimental and Control Groups in Flexibility

Group	Mean	Md	SD	Std.error of the mean	't'	Table value
Experimental pre-test	13.24	2.95	0.44	0.14	12.97*	2.14
Experimental post test	16.19		0.47	0.15		
Control pre test	13.28	0.15	0.34	0.47	1.15	2.14
Control post test	13.43		0.33	0.48		

*significant at 0.05 level

Figure-1: Bar Diagram Showing Pre and Post Test Mean Value of Experimental Group and Control Group in Flexibility

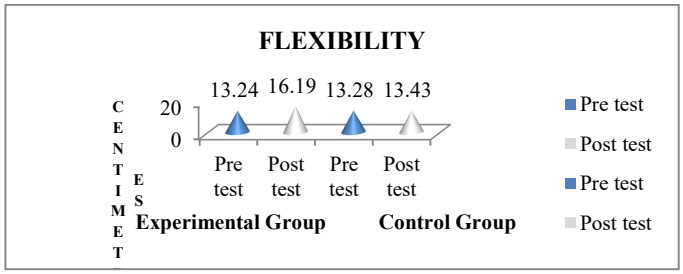
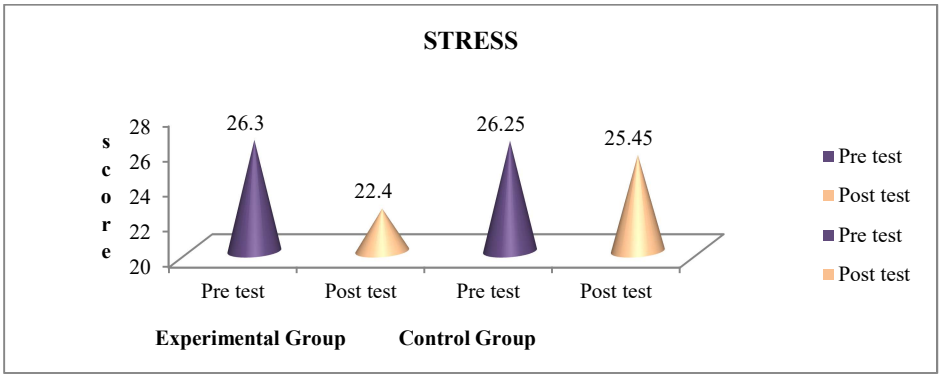


Table-III: Table Showing Mean Difference Standard Deviation and 't' Value of Experimental and Control Groups in Stress

Group	Mean	Md	SD	Std.error of the mean	't'	Table value
Experimental pre-test	26.30	3.90	1.32	0.41	13.43*	2.14
Experimental post test	22.40		1.18	0.37		
Control pre test	26.25	0.80	1.37	0.43	1.95	2.14
Control post test	25.45		1.50	0.47		

*significant at 0.05 level

Figure-2: Bar Diagram Showing Pre and Post Test Mean Value of Experimental Group and Control Group in Stress



Discussion on Findings

The result of the study shows that the experimental group that had undergone yogic practice and improved physical fitness variables namely flexibility and psychological variables namely stress. This may be due to the effect of yogic practice. From the result of the present study, it is concluded that the experimental group improved in physical fitness and psychological variables.

Conclusions

Based on the statistical analysis and the limitation of the study, and results the following conclusions are drawn.

- It was concluded that experimental group significantly improved on physical fitness variables namely flexibility.
- It was concluded that experimental group significantly improved on psychological variables namely stress.
- Further it was concluded that the control group shows insignificant improvement on physical fitness and skill variables.

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Effect of Sand Training and Springboard Training On Selected Sprint Speed and Strength Endurance Parameters of Athletes

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Abstract

The Aim of the study was to find out the Effect Of Sand Training And Springboard Training On Selected Sprint Speed And Strength Endurance Parameters Of Athletes Randomly selected Sixty Sprinters(N=60) those who are Participated in Osmania University Inter Collegiate Championship. Each group consisted of twenty subjects (n=20). Before the training pre-test was taken for all the groups on the selected criterion variables, stride length muscular endurance. The control group did not undergo any type of training. Sand training was given to the experimental group-I and springboard training was given to the experimental group-II on alternate days in the morning for a period of twelve weeks. At the end of experimental period, the post-test was conducted and data collected on criterion variables. The difference between the initial and final means of the groups was considered as the effect of respective treatments. The data obtained were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance.

Keywords: Sprint Speed and Strength Endurance

Introduction

The ancient philosopher Aristotle of Greece proclaimed the quality of people, quoted by Bucher as follows: “The body is the temple of the soul and to reach harmony of body, mind and spirit, the body must be physically fit”. The efficiency of the human body depends upon many factors. With the enhanced status of sports in society the provision of sports training has become very important although the need for competent training has long been recognized.

Over three thousand years ago, the Greeks saw the need to provide effective and efficient training for the athletes taking part in the Olympics games. But since 1950s many countries have recognized the importance of an effective sports training programme in a wide range of activities not only for the success in major international competitions but also for the development of healthy participants comprehensive sports training programme is the key factors in producing the skillful high performance.

Statement of the Problem

The Purpose of This Study Was To Find out The Effect of Sand Training And Springboard Training on Selected Sprint Speed And Strength Endurance Parameters of Athletes

Limitations

Uncontrollable factors associated with the study were accepted as limitation and the following were considered as limitation of the research study:

1. Certain factors like rational habits like life style, daily routine, diet and climatic conditions were not taken into account in the study.
2. The influence of vigorous academic activity of students could have discouraged or motivated the subjects during training and during testing period.
3. The heterogeneous characters of the subjects in hereditary and environmental factors were recognized as limitations.
4. The subject's body type and socio economic status of the students were not taken into consideration.
5. Uncontrollable changes in climate and whether conditions such as atmosphere, temperature, humidity and other meteorological factors during the training programme were regarded as limitations.

Delimitations

To achieve the objectives of the study, the investigator delimited the following factors:

1. This study was conducted only on 60 male Athletes, who represented their colleges in intercollegiate level Championship in Osmania University.
2. The experimental period was only twelve weeks.
3. Sand training was limited to running, jumping, zig-zag running etcetera on beach sand.
4. The spring board training on a rebounder or a mini trampoline is considered for this study.
5. Springboard training was limited to jumping, diving, trampoline bounce, trampoline prances, trampoline, squats etcetera.

Dependent Variables

1. Sprinting speed
2. Strength Endurance

Independent Variables

1. Twelve Weeks Sand training
2. Twelve Weeks Springboard training

Methodology

Selection of Subjects

The subjects taken for the present study were 60 male Athletes, who represented their colleges in intercollegiate level Championship in Osmania University The subjects were selected on a random basis and were allotted to three groups (control, sand training and springboard training) by random assignment. The age of the subjects ranged from 18 to 24 years.

Selection of Variables

Dependent Variables

1. Sprint speed
2. Strength Endurance

Independent Variables

1. Twelve Weeks Sand training
2. Twelve Weeks Spring board training

Experimental Design

The primary responsibility of the investigator is to adopt the appropriate experimental methodology before proceeding with data collection. A pre-test - post-test randomized group design was used. Each group consisted of

twenty subjects (n=20). Before the training pre-test was taken for all the groups on the selected criterion sprint speed and strength endurance The control group did not undergo any type of training. Sand training was given to the experimental group-I and springboard training was given to the experimental group-II on alternate days in the morning for a period of twelve weeks. At the end of experimental period, the post-test was conducted and data collected on criterion variables. The difference between the initial and final means of the groups was considered as the effect of respective treatments. The data obtained were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance.

Criterion Measures

1. Speed was measured in seconds. (50 M dash)
2. Strength Endurance was measured through bend knee sit-ups test.

Table-1: Reliability Co-efficient of Correlation for Test – Retest

S.No.	Variables	Coefficient Correlation
1.	Sprint speed	0.84*
2	Strength Endurance	0.92*

* Significant at 0.01 level.

Required 'r' value at 0.01 level = 0.765

Results on Speed

The statistical analysis comparing the initial and final means of Speed due to Sand training and Spring board training among Athletes is presented in Table-II.

Table-II: Ancova Results On Effect of Sand Training and Spring Board Training Compared With Controls on Speed

	Sand training	Spring board training	Control group	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre-Test Mean	7.12	7.14	7.20	Between	0.07	2	0.04	0.29
				Within	6.98	57	0.12	
Post-Test Mean	6.73	6.88	7.19	Between	2.15	2	1.07	10.40*
				Within	5.89	57	0.10	
Adjusted Post- Test Mean	6.76	6.90	7.15	Between	1.54	2	0.77	41.46*
				Within	1.04	56	0.02	
Mean Diff.	-0.39	-0.26	-0.02					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16.

*Significant at 0.05 level

As shown in Table-II, the obtained pre-test means on Speed on Sand training group was 7.12, Spring board training group was 7.14 was and control group was 7.20. The obtained pre-test F-value was 0.29 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Speed on Sand training group was 6.73, Spring board training group was 6.88 was and control group was 7.19. The obtained post-test F-value was 10.40 and the required table F-value was 3.16, which proved that there was significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 41.46 was greater than the required value of 3.16 and hence, it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-III.

Table-III: Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Speed

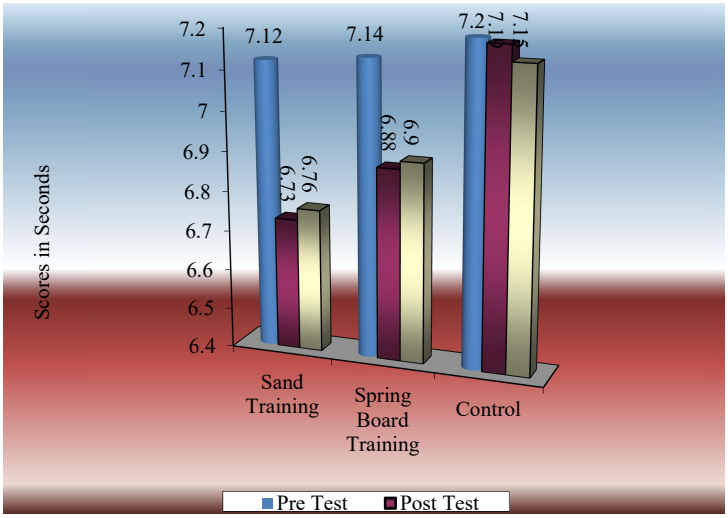
MEANS				Required C.I.
Sand training Group	Spring board training Group	Control Group	Mean Difference	
6.76	6.90		0.14*	0.11
6.76		7.15	0.39*	0.11
	6.90	7.15	0.25*	0.11

* Significant at 0.05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Sand training group and control group (MD: 0.39). There was significant difference between Spring board training group and control group (MD: 0.25). There was significant difference between treatment groups, namely, Sand training group and Spring board training group. (MD: 0.14).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-I.

Figure-I: Bar Diagram Showing Pre-Test, Post-Test And Ordered Adjusted Means On Speed



Discussions on Findings on Speed

In order to find out the effect of sand training and spring board training on speed parameter Speed the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test. The effect of Sand training and Spring board training on Speed is presented in Table-IV. The analysis of covariance proved that there was significant difference between the experimental group and control group as the

obtained F-value 41.46 was greater than the required table F-value to be significant at 0.05 level. Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-III proved that there was significant difference between Sand training group and control group (MD: 0.39) and Spring board training group and control group (MD: 0.25). Comparing between the treatment groups, it was found that there was significant difference between Sand training and Spring board training group among Athletes. Thus, it was found that Sand training was significantly better than Spring board training and control group in reducing sprint speed time and thereby improve speed of the Athletes.

Table-IV: Ancova Results On Effect of Sand Training and Spring Board Training Compared With Controls on Strength Endurance

	Sand training	Spring board training	Control group	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre-test Mean	35.35	35.80	36.00	Between	4.43	2	2.22	0.07
				Within	1899.75	57	33.33	
Post-test Mean	37.25	38.00	36.35	Between	27.30	2	13.65	0.54
				Within	1442.30	57	25.30	
Adjusted Post-test Mean	37.57	37.93	36.11	Between	37.18	2	18.59	29.98*
				Within	34.72	56	0.62	
Mean Diff.	1.90	2.20	0.35					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16. *Significant at 0.05 level.

As shown in Table-IV the obtained pre-test means on Strength Endurance on Sand training group was 35.35, Spring board training group was 35.80 was and control group was 36.00. The obtained pre-test F-value was 0.07 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects. The obtained post-test means on Strength Endurance on Sand training group was 37.25, Spring board training group was 38.00 was and control group was 36.35. The obtained post-test F-value was 0.54 and the required table F-value was 3.16, which proved that there was no significant difference among post-test scores of the subjects. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 29.98 was greater than the required value of 3.16 and, hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-V

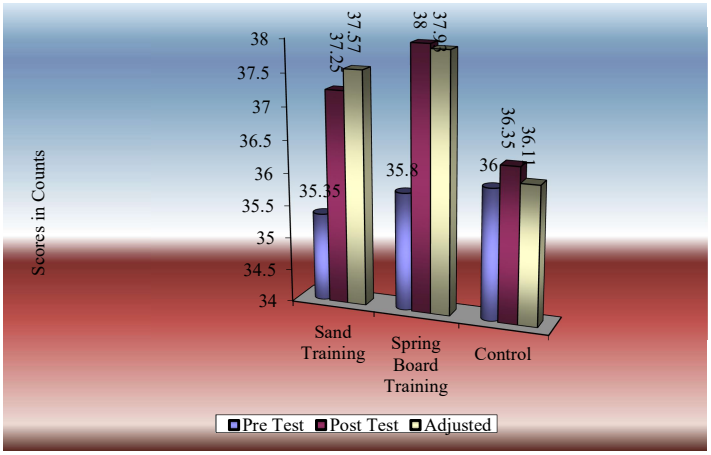
Table-V: Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Strength Endurance

MEANS				Required C.I.
Sand training Group	Spring board training Group	Control Group	Mean Difference	
37.57	37.93		0.36	0.63
37.57		36.11	1.46*	0.63
	37.93	36.11	1.82*	0.63

* Significant at 0.05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Sand training group and control group (MD: 1.46). There was significant difference between Spring board training group and control group (MD: 1.82). There was significant difference between treatment groups, namely, Sand training group and Spring board training group (MD: 0.36). The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-II

Figure-II: Bar Diagram Showing Pre-Test, Post-Test And Ordered Adjusted Means On Strength Endurance



Discussions on Findings on Strength Endurance

In order to find out the effect of sand training and spring board training on speed parameter Strength Endurance the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test. The effect of Sand training and Spring board training on Strength Endurance is presented in Table-IV The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 29.98 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-V proved that there was significant difference between Sand training group and control group (MD: 1.46) and Spring board training group and control group (MD: 1.82). Comparing between the treatment groups, it was found that there was no significant difference between Sand training and Spring board training group among Athletes. Thus, it was found that Sand training and spring board training were significantly better than control group in improving Strength Endurance of the Athletes.

Conclusions

Within the limitations and delimitations of the study, the following conclusions were drawn:

1. It was concluded that twelve weeks sand training and spring board training significantly improved speed parameter, such as, speed of the college level Athletes compared to control group. Comparison between treatment groups, it was found sand training was significantly better than spring board training in improving speed of the Athletes.
2. It was concluded that twelve weeks sand training and spring board training significantly improved endurance parameter, such as, muscular endurance of the college level Athletes compared to control group. Comparison between treatment groups proved that there was no significant difference between sand training group and spring board training group in altering muscular endurance of the Athletes.

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A Comparative Study on Speed and Endurance among Female Foot Ball and Hockey Players of MJPTBCWRS & Jr. Colleges in Nalgonda District Telangana State.

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Abstract:

The purpose of the study was to determine the Comparison of Speed and Endurance among Female Foot ball and Female Hockey players of MJPTBCWRS & Jr. Colleges in Nalgonda District, Telangana State. To assess this, The study was formulated based on the simple random sampling. The samples were collected from the 50 Female Foot ball players and 50 Female Hockey players from MJPTBCWRS & Jr. Colleges in Nalgonda District, Telangana State. And their age ranged from 16 years to 20 years. The collected data were statistically analyzed by using independent 't' test. Based on the analysis of statistical results, it was proved that there was a significant difference in Speed and Endurance among Female Foot ball players and Female Hockey players of MJPTBCWRS &Jr. Colleges in Nalgonda District, Telangana State.

INTRODUCTION:

Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity. Physical fitness is an important component of health. Physical fitness is the ability to function efficiently and effectively is to enjoy leisure, to be healthy, to resist disease and to cope with emergency situations. The importance of Physical fitness is linked to a higher quality of life as well as academic achievements. It is well documented that regular physical activity in childhood and adolescence improve speed, strength and endurance, Not only that but also health build, strong bones, muscles and control weights, reduce anxiety, stress and increases self esteem. Health related components of physical fitness Include body composition, cardio vascular fitness, flexibility, muscular endurance and strength. Skill related components include agility, balance, coordination, power reaction time and speed.

The relative importance of each of the components varies for each sport. Physical fitness is not only sport specific it may also be position specific, combined good health and physical development. The object of any program of physical fitness is to maximize any individual's health, speed, strength, endurance and skill relative to age, sex, body build and physiology. These ends can only be realized through conscientious regulation of exercise, rest, diet and periodic medical examinations. Exercise should be regular and vigorous, but begun slowly and only gradually increased in strenuousness. Proper Exercise methods include jogging, cycling and the use of body building machines. It is more important that periods of sleep be regular and restful than that they extend any fixed number of hours.

Purpose of the study:

The purpose of the study is to determine the Comparison of Speed and Endurance among Female Foot ball and Female Hockey players of MJPTBCWRS & Jr. Colleges in Nalgonda District, Telangana State.

Hypotheses:

1. There may not be any significant difference among Female Foot ball and Female Hockey players of MJPTBCWRS & Jr.Colleges in Nalgonda District, Telangana State in relation to their Speed.
2. There may not be any significant difference among Female Foot ball and Female Hockey players of MJPTBCWRS & Jr.Colleges in Nalgonda District, Telangana State in relation to their Endurance.

Methodology:

The study was to assess the comparison of Speed and Endurance among Female Foot ball players and Female Hockey players of MJPTBCWRS &JR. Colleges Nalgonda District, Telangana State. For this study the following methods and criterion measures were administered.

Selection of Sample

The study was formulated based on the simple random sampling. The samples were collected from the 50 Female Foot ball players and 50 Female Hockey players from MJPTBCWRS & Jr. Colleges in Nalgonda District, Telangana State. And their age ranged from 16 years to 20 years.

S.No.	Category of the subjects	No. of Subjects
1.	Foot ball players	50
2.	Hockey players	50

Criterion measures:

S.No.	Variables	Tests	Unit of Measurement
1.	Speed	50m Run Test	In seconds
2.	Endurance	Cooper 12 min run or walk Test	Distance covered in meters

Results & discussions:

The statistical analysis of the results obtained from the collected data of Female Foot ball and Female Hockey players of MJPTBCWRS & Jr. Colleges in Nalgonda district, Telangana State. In order to find out the statistical difference among Female Foot ball and Female Hockey players.

TABLE 1

Table 1 showing the mean values, standard deviation, t value and p value among Female Foot ball and Female Hockey players of MJPTBCWRS & Jr. Colleges in Nalgonda District in relation to their Speed (50m run Test).

S.No.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Foot ball players	50	9.12	1.24	2.251	0.03
2.	Hockey players	50	9.81	1.52		

The mean of the Female Foot ball and Female Hockey players are 9.12 and 9.81 respectively. And the standard deviation score of the Female Foot ball and Female Hockey players are 1.24 and 1.52 respectively. And calculated 't' value is 2.251. It reveals that there was a significant difference found on Speed among Female Foot ball and Female Hockey players.

TABLE 2

Table 2 showing the mean values, standard deviation, t value and p value among Female Foot ball and Female Hockey players of MJPBCWRS & Jr. Colleges in Nalgonda District in relation to their Endurance (Cooper's 12 min run or walk Test).

S.N0.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Foot ball players	50	2368	296.76	4.01	0.01
2.	Hockey players	50	2024	238.62		

The mean of the Female Foot ball and Female Hockey players are 2368 and 2024 respectively. And the standard deviation score of the Female Foot ball and Female Hockey players are 296.76 and 238.62 respectively. And calculated 't' value is 4.01. It reveals that there was a significant difference found on Endurance among Female Foot ball and Female Hockey players.

Conclusion

The study under report has scientifically examined the physical fitness variables pertinent to speed and endurance. A trained individual is in a better state of physical fitness than the person who follows a sedentary, inactive life. It is concluded that the physical fitness plays a vital role on the performance of the players. Physical activity can act as an antidote to some kinds of fatigue. Youngsters will be harmed through sustained exercise -if they are fit, their physical endurance is great and the exercise will be conductive to good health. The study concluded that Female Foot ball players have higher speed and endurance than the Female Hockey players of MJPTBCWRS & Jr. Colleges in Nalgonda District in Telangana State.

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Effect of Selected Yogic Exercises on Emotional Health of Men Volleyball Players in Telangana State

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Abstract

The aim of the study was to find out the effect of selected yogic exercises on emotional health of men volleyball players in Telangana state. To achieve the purpose of this study, 90 volleyball players in the age group of 18 to 21 years those who have participated in inter-college tournament taken as subject. The selected 90 subjects were divided into three equal groups of thirty, each as two experimental groups and one control group. Group 'I' underwent Yogasana and Group 'II' underwent Pranayama along with Surya Namaskaras and group III acted as control group who are not participate any training. The selected physical related variable such as leg explosive power was assessed before and after training period. Vertical jump are the test which was used to conduct the pre-test and post-test for measuring the physical variable such as leg explosive power. The result of the study was found that there was a significant difference due to the Yogasana and Pranayama along with Surya Namaskaras when compared with the control group.

Keywords: Yogasana, Pranayama along with Surya Namaskaras, Emotional health.

Introduction

Yoga has many mental and physical benefits that can enhance an athlete's performance. It can also help relieve stress, encourage relaxation, and support healthy sleep patterns. These benefits are useful for athletes who are prone to overexertion. From increasing flexibility to building mental resilience necessary for competition, yoga offers a wealth of benefits for athletes. Yoga is a very ancient discipline. It is recognized as one of the most important and valuable gifts of the Indian heritage.

Methodology

The purpose of the study to find out the effect of selected yogic exercises on emotional health of men volleyball players in Telangana state. To achieve the purpose of the study, ninety men volleyball players randomly selected from Telangana state, India were selected as subject for this study. They play volleyball at inter-college competitions. Their age ranged between 18 to 21 years. They were further divided into three equal groups of thirty namely group I Yogasana, group II Pranayama along with Surya Namaskara and group III act as control group. The group I underwent Yogasana and group II Pranayama along with Surya Namaskaras group III underwent control group. The Yogasana and Pranayama along with Surya Namaskaras group participated in the training for a period of three days in a week for twelve weeks to find out the outcome of the training exercises and the control group did not participate in any training program. The variable to be used in the present study was collected from all subjects before they have to treat with the respective treatments. After completion of treatment they were tested again as it was in the pre-test on vertical jump variable used in the present study. This test was assumed as post-test. The

analysis of data on leg explosive power has been examined by analysis of covariance (ANACOVA). In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate.

Table 1: Computation of Analysis of Covariance of Leg Explosive Power (Scores in centimeters)

Test	Asana group	Pranayama group	Control group	Total mean	Source of variance	Sum of square	DF	Mean square	F ratio	SIG.
Pre-test	18.23	17.76	18.63	18.21	Between	11.29	2	5.64	.81	.449
					Within	607.70	87	6.99		
SD	2.387	3.103	2.370	2.637	Between	355.62	2	177.81	29.66	.000
Post-test	21.23	25.53	18.66	21.14						
					Within	521.50	87	5.994		
SD	2.160	2.944	2.154	3.139	Between	410.11	2	205.05	45.63	.000
Adjusted Post Test	21.22	23.74	18.46	17.80						
					Within	386.49	86	4.49		

*significant at 0.05

The above table 1 shows that there is a significant difference in leg explosive power among the two groups such as Yogasana group and Pranayama along with Surya Namaskaras group. Since the calculated 'F' value required being at 0.05 level of confidence for 2 and 87 degrees of freedom 3.10, 2 and 86 of DF also 3.10, but the calculated values of leg explosive power post and adjusted post-test 'F' value are 29.664 and 45.627 respectively. Which are the greater than the required table value of 3.10. Since the obtained 'F' ratio is found significant.

Since significant differences were recorded, the results were subjected to post hoc analysis using Bonferroni pot hoc test. The results were presented in the below table.

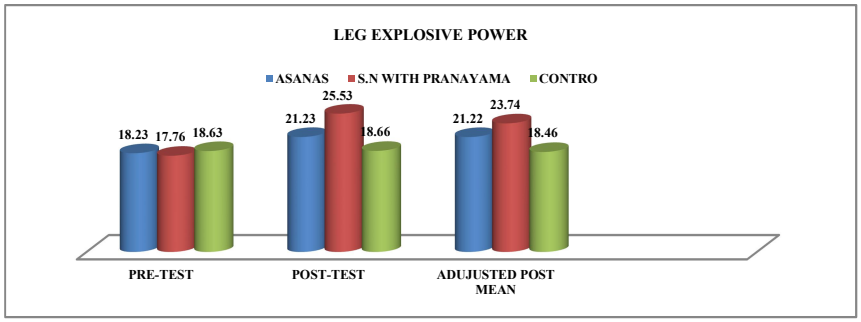
Table II: Boneferroni Post Hoc Test Mean Differences in Leg Explosive Power Among Three Groups

MEANS			Mean Difference	Sig P-value
Yogasana group	**Pranayama along with Surya Namaskaras group**	**Control group**		
2.755	2.275		.0.48	.000.
2.755		2.520	0.235	.000
	2.275	2.520	0.245	.000

*significant at 0.05

The above tables II mean difference values are showing that they are significant. The mean difference values comparisons were .0.48, 0.235 and 0.245 which are significant at the 0.05 level of confidence. According to the comparison of these three groups the Pranayama along with Surya Namaskaras group has improved significantly more than the asana group and control group. The Asana group has improved significantly than the control group. The ordered adjusted means were presented through bar diagram for better understanding of the results of this study below figure.

Figure 1: **Bar Diagram Showing the Pre, Post and Adjusted Post-Test Value of Asanas, Pranayama Along With Surya Namaskaras and Control Groups on Leg Explosive Power**



*Significant at 0.05

Discussion on the Findings of Leg Explosive Power

The results presented in the figure I showed that the obtained adjusted means on leg explosive power among Yogasana group was 21.22 followed by Pranayama along with Surya Namaskaras group with the mean value of 23.74 and control group mean value of 18.46. The difference among pre-test scores post-test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and F value obtained were on pre-test score was .808, 29.664 and 45.627 respectively. It was found that obtained F value on pre-test score was not significant at 0.05 level of confidence as the obtained value was lesser than the required table value and post-test Scores was significant at 0.05 level of confidence as the value was greater than the required table F value of 3.10.

Conclusion

The results of the study showed that the experimental groups improved in leg explosive power and their emotional health significantly after the twelve weeks' yogic exercises among men volleyball players of Telangana state.

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A Significant Study on Health Related Physical Fitness Components on Basketball and Hand Ball Players of Badurka College Hyderabad

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Abstract
Physical fitness is more than the possession of strength and endurance, it means having the best possible health with the capacity to do ones everyday task to engage in recreational pursuits and to meet emergencies, when they arise. As a matter of fact, physical fitness is possesses by the individual, who retains enthusiastic, works cheerfully and does the emergency work with vigor. The objective of the study is to compare health related physical fitness components of basket ball players and hand ball players of Badurka College Hyderabad. **Hypothesis:** There will be not any significant difference in relation to their health related physical fitness components of basket ball players and hand ball players of Badurka College Hyderabad. **Methods and Materials** The selection of the subjects was made on the basis of random sampling from player's populations i.e. 50 basket ball players and 50 hand ball players of Badurka College Hyderabad in the age group of 18 to 22 years. The health related physical fitness variable for the present investigation are muscular abdominal endurance, muscular shoulder strength, body fat percentage, flexibility, and cardio-respiratory endurance. **Finding of the study:** The Bend Knee sit ups of mean value of basketball are 17.20 and a hand ball player is 22.20. The Pull up of mean value of basketball is 13.20 and hand ball players are 13.30. The skin floder of mean value of basketball is 16.09 and hand ball players are 21.40. The flexibility of mean value of basketball is 5.44and hand ball players is 5.36. The one & half mile run of mean value of basketball is 10.52 and hand ball players is 12.58 Hence it is concluded that the basket ball player and hand ball players have same muscular shoulder strength and flexibility. Further, basket ball players have better cardio-respiratory endurance as compared to handball players. It is also found that the basket ball players have less body fat then handball players.

Key Words: flexibility, cardio-respiratory endurance, muscular abdominal endurance

Introduction

Physical fitness is more than the possession of strength and endurance, it means having the best possible health with the capacity to do ones everyday task to engage in recreational pursuits and to meet emergencies, when they arise. As a matter of fact, physical fitness is possesses by the individual, who retains enthusiastic, works cheerfully and does the emergency work with vigor.

The ability of function efficiently and effectively, to enjoy leisure, to be healthy, to resist disease, and to cope with emergency situations. Health-related components of physical fitness include body-composition, cardiovascular fitness, flexibility, muscular endurance, and strength. Skill-related components include agility,

balance, coordination, power, reaction time, and speed, The relative importance of each of the components varies for each sport. Physical fitness is not only sport specific, it may also be position specific.

Combined good health in physical development, the object of any program of physical fitness is to maximize an individual's health, strength, endurance, and skill relative to age, sex, body build, and physiology. These ends can only be realized through conscientious regulation of exercise, rest, diet, and periodic medical and dental examinations. Exercise should be regular and vigorous, but begun slowly and only gradually increased in strenuousness. Popular exercise methods include jogging, cycling, and the use of body-building machines. It is more important that periods of sleep be regular and restful than that they extend any fixed number of hours. A properly balanced diet in proteins, carbohydrates, vitamins, and minerals is essential. Conscientious dental hygiene and periodic checkups are also strongly advised. Complete and regular physical examinations should be the basis of any program of physical development.

Objective of the study

The objective of the study is to compare health related physical fitness components of basket ball players and hand ball players of Badurka College Hyderabad

Significance of the study

The finding of the study is to know the significance difference among the basket ball players and hand ball players of Badurka College Hyderabad. To, study the nature of relationship between the health related and performance of basket ball players and hand ball players of Badurka College Hyderabad.

Hypothesis

There will be not any significant difference in relation to their health related physical fitness components of basket ball players and hand ball players of Badurka College Hyderabad.

Methods and Materials

The study was carried out on 100 players which were 50 basket ball players and 50 hand ball players from Badurka College Hyderabad. The selection of the subjects was made on the basis of random sampling from player's populations i.e. basket ball players and hand ball players of different colleges at Badurka College Hyderabad in the age group of 18 to 22 years.

Tools used

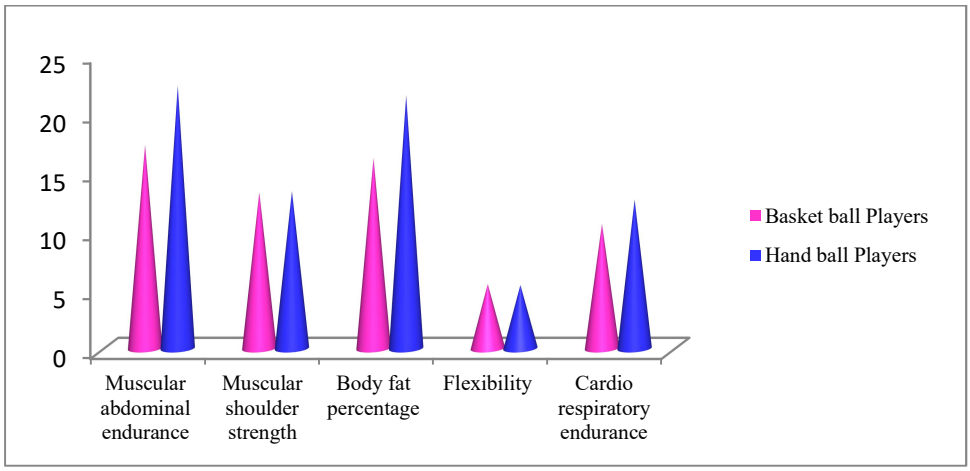
The health related physical fitness variable for the present investigation are muscular abdominal endurance, muscular shoulder strength, body fat percentage, flexibility, and cardio-respiratory endurance. The data was collected by use of test like bend knew sit ups, pull ups, skin measurements, sit and reach test, one & half run / walk test was administrated.

Results and discussions

The table shows the significance difference between basket ball players and hand ball players in relation to their health related physical fitness.

Sl.No	Variables	Tests	Basket ball Players		Hand ball Players			
			Mean	SD	Mean	SD	t-value	p-value
1.	Muscular abdominal endurance	Bend Knee sit ups	17.20	5.78	22.20	5.94	3.01	0.05
2.	Muscular shoulder strength	Pull ups	13.20	2.50	13.30	2.62	0.14	0.05
3.	Body fat percentage	Skin folder	16.09	8.01	21.40	8.41	2.29	1.02
4.	Flexibility	Sit and reach	5.44	2.02	5.36	1.94	0.14	0.05
5.	Cardio respiratory endurance	One & half run	10.52	3.02	12.58	4.04	2.06	1.23

Graph showing the mean values between basket ball players and hand ball players in relation to their health related physical fitness.



Conclusion

Hence it is concluded that the basket ball player and hand ball players have same muscular shoulder strength and flexibility. Hence the hand ball players have better abdominal muscular endurance as compared to basket ball players. Further, basket ball players have better cardio- respiratory endurance as compared to handball players. It is also found that the basket ball players have less body fat then handball players.

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Effect of Skill Training Methods in Kho-Kho Kho- Kho Performance and Development of Skills among University Male Kho-Kho Players.

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ABSTRACT

The main aim of the study is find out the purpose of the study is 60 male Kho-Kho players were selected from different Universities in the state of Andhra Pradesh, they were selected random by lot method as subjects and their age group between 18 to 25 years took part in the study. The selected subjects confined to this study were randomly classified in to four groups of 15 each. The data collected from the groups before and after the experimental were statistically examined for significant improvement and development of training performance by dependent. Analysis of the covariance (ANCOVA) was used since four groups were involved wherever the ratio was found to be significant for adjustment post mean"Scheffe's post hoc test was applied to determine the paired means difference was significant. In all the cased 0.05 level of significant was fixed. The result of the study showed that there was significantly improvement and development was found in selected among the subjects.

Key Words: Performance ability of kho-kho

Introduction

The name of the game reflects the shape of the main implement used the old French word "Hoquet" meant a shepherd's crook and some experts believe that the game was simply named by making a few alterations to the spelling of the old French work. KHO-KHO is a game skills which calls for keen eyes, physical fitness and speed of movements. The KHO-KHO was formalized in England 1876, the game is popular throughout Europe, Pakistan, Newzeland, Asia, Africa and India. It is the "National Game of INDIA " F.N.Creek (1986).

Significance of the study

- The finding of the study will explore that effect of skill training methods in KHO-KHO performance of University male KHO-KHO players and development of skills such as Dribbling–Passing, Rolling- Flick, and Stopping -Hitting.
- This study may help to understand the effect of utilizing the standard equipments on Skill training methods in KHO-KHO performance and development skills in KHO-KHO.
- The study may be a great valuable and helpful to KHO-KHO coaches as well as Physical Education Teachers for adopting scientific skill training methods of practice to improve performance and develop skills among University male KHO-KHO players.

Hypothesis

- It is hypothesized that Effect of Skill Training Methods in KHO-KHO Performance and Development of skills will significantly improvement of speed on KHO-KHO skills among University male KHO-KHO players.

- It is hypothesized that there may be significant improvement on cardio respiratory endurance due to the relative effect of skill training methods in KHO-KHO performance and development of skills among University male KHO-KHO Players.

- It is hypothesized that there may be significant that improvement of explosive power due to related effect of skill training methods performance and development of skills in KHO-KHO among University male KHO-KHO Players.

Need of the study

⇨ The effect of skill training methods performance in KHO-KHO and development of skills among University male KHO-KHO players its commendable contribution to one's level of ability.

⇨ It is that concurrent of the effect of skill training methods in KHO-KHO performance programme may have significant influence to know the efficacy and development of skills among University male KHO-KHO players.

Methodology

The main purpose of the study is " Effect of skill training methods in KHO-KHO and development of skills among University male KHO-KHO players" Hence, it is to achieve that the purpose of the study 60 Male KHO-KHO players were selected from different Universities In Andhra Pradesh served as subject. The subject was selected at random by lot method. The age groups of the subjects were ranged between 18 to 25 years.

Subjects & Variables

- 60 male KHO-KHO players from Various Universities from Andhra Pradesh in the age groups 18 to 25 years were selected their consent.

- The selected subjects were randomly assigned to both the concurrent training and control groups of fifteen each.

- The selected criterion subjects were assessed using standard tests and procedures, prior to and immediately after the training.

Training Protocol

⇨ The training period the experimental groups underwent their respective training programme four days per week for eight weeks in addition to their selected subjects and regular activities.

⇨ Every day the workout lasted for 30 to 45 minutes approximately including warm–up & warm-down period.

Experimental Design

- ⇨ The experimental design used in this study was random group design involving sixty subjects who were divided in to four groups of fifteen each.

- ⇨ This study consisted that such as the effect of skill a training methods in KHO-KHO performance and development of skills among University male KHO-KHO players.

- ⇨ The data collected from the four groups before and after the experimental period were statistically examined for significant improvement by dependent 't' test.

Statistical Technique

The analysis of covariance **(ANCOVA)** was used as a statistical procedure with four groups were involved the **'F'** ratio was found to be significant for adjusted post means, **Scheffe's** test was followed as a post hoc test to determine which of the paired means difference was significant. In all the cases, the level of confidence was fixed at 0.05 level for significance.

Conclusion

- The result of the study revealed that all the skill items such as, Dribbling - Passing, Rolling – Flick and Stopping - Hitting are reliable.

- The finding of the study explored that all the effect of skill training methods in KHO-KHO performance and development of skill test items are having validity and objectivity.

- As the skill tests have fully satisfied the scientific authenticity such as reliability, validity, objectivity and norms, the battery of skill test in KHO-KHO performance and development skills can use widely for the different Universities of male University KHO-KHO players of Andhra Pradesh.

- With the help of these training skill test items, the Physical Educationists and Coaches can classify and identify the effect of skill training methods in KHO-KHO performance and development of skills among University male KHO-KHO players.

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Effect of Sand Training and Spring Board Training on Selected Strength Endurance Variable of Football Players

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Abstract

The purpose of the study was to find out the effect of sand training and springboard training on selected Strength endurance parameters of football players. The subjects taken for the present study were sixty men football players from different colleges in Andhra Pradesh, who had represented their college in the inter-collegiate football competitions. The subjects were selected on a random basis and were allotted to three groups (control, sand training and springboard training) by random assignment. The age of the subjects ranged from 19 to 24 years with mean age of 21 years., the investigator got the individual consent from each subject. The primary responsibility of the investigator is to adopt the appropriate experimental methodology before proceeding with data collection. A pre-test - post-test randomized group design was used. Each group consisted of twenty subjects (n=20). Before the training pre-test was taken for all the groups on the selected criterion variables, strength endurance. The control group did not undergo any type of training. Sand training was given to the experimental group-I and springboard training was given to the experimental group-II on alternate days in the morning for a period of twelve weeks. At the end of experimental period, the post-test was conducted and data collected on criterion variables. The difference between the initial and final means of the groups was considered as the effect of respective treatments. The data obtained were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance.

Key words: - Sand Training, Springboard Training, Strength Endurance Parameters, Football Players.

Introduction

The ancient philosopher Aristotle of Greece proclaimed the quality of people, quoted by Bucher as follows: "The body is the temple of the soul and to reach harmony of body, mind and spirit, the body must be physically fit". The efficiency of the human body depends upon many factors. With the enhanced status of sports in society the provision of sports training has become very important although the need for competent training has long been recognized.

Over three thousand years ago, the Greeks saw the need to provide effective and efficient training for the athletes taking part in the Olympics games. But since 1950s many countries have recognized the importance of an effective sports training programme in a wide range of activities not only for the success in major international competitions but also for the development of healthy participants comprehensive sports training programme is the key factors in producing the skillful high performance.

Day-to-day life needs graceful movement of the body segments in a normal men and much more in athletes. The efficiency of the human body depends upon many factors. Physical fitness is an important factor as it is a pre-requisite to skill-teaching and performance in sports and games.

Sand Running:

In physical geography, a dune is a hill of sand built by aeolian processes. Dunes occur in different forms and sizes, formed by interaction with the wind. Most kinds of dunes are longer on the windward side where the sand is pushed up the dune and have a shorter "slip face" in the lee of the wind. The valley or trough between dunes is called a slack. A "dune field" is an area covered by extensive sand dunes. Large dune fields are known as ergs.

Benefits of Sand Running:

Sand, mud, dirt, grass and trails are excellent training surfaces. They force to run slower for the same heart rate, giving the main benefit of altitude training that is, lower risk of injury as high running intensity is the second best predictor of injury. Half the purpose of 80% of running is to develop a big pump and to maximize the bellows. The heart and lungs don't care if one is swimming, biking, or running at 10 minute miles in 6 inches of mud. However, the running and biking muscles do need some training at 1-2 minutes per mile (for running) slower than race pace, at race pace and also at faster than race pace. The trouble with deep sand is that it gets in to the shoes. It can also mess with the running form. But it gives one a tough workout with very low mileage; the back and shoulders get a workout because one has to maintain balance.

Spring board training:

A springboard or diving board is used for diving and is a board that is itself a spring, i.e. a linear flex-spring, of the cantilever type. Springboards are commonly fixed by a hinge at one end (so they can be flipped up when not in use), and the other end usually hangs over a swimming pool, with a point midway between the hinge and the end resting on an adjustable fulcrum. Because of the need to be light and flexible, springboards are usually made of fiberglass. Most springboards are painted, usually blue, and texture is often added to the surface by mixing crushed glass or sand with the paint to provide additional grip. To improve the jumping ability athletes tend to do springboard exercises. In this study, the investigator was interested to find out the effect of spring board exercises on the performance of long jumpers (Singh, 1984).

Benefits of Springboard Training:

Springboard training enhances upper and lower extremity power production for the components of the diving approach, hurdle, and take off. The primary purpose is to increase the diver's time of flight. Increases power production in upper extremity, lower extremity and trunk to maximize velocity of twist spins, and velocity (and compactness) of pike and tuck somersault spins. Increases strength of trunk musculature to stabilize the spine, thereby enabling the diver to maintain posture and withstand impact trauma during entry. Maintains a lean, muscular physique for aesthetic performances purposes. Spring board training is excellent for cross-training. Runners, swimmers, cyclists, rowers, soccer (or football), and others find to be helpful with its total workout.

Football:

Football is not a matter of life and death. It is much more important than that. Almost all the countries play it and of course millions of people watch it. It is apparently one of the ancient sports and it is the direct ancestor of American Football, Canadian Football, Rugby and several other similar sports. The game of football is one of the most popular games in the world. The game began in England in the 12th century, but Edward-II banned it in 1324. His successor Edward-III in 1349, Richard-II in 1389 and Henry-IV in 1401 as also the Scottish rulers

forbade people from playing football. In the beginning there were no definite rules of the game. Each team played with its own rules. An attempt was made by Thring and Dewinton to frame a uniform set of rules and the first set of football rules were framed in 1862 and revised in 1863. The football Association of England was formed and new rules of this game were framed in 1864.

Strength Endurance:

This is the ability of the muscles to continue to exert force in the face of increasing fatigue. Strength endurance is simply the combination of strength and duration of movement. Performing an exercise, such as sit-ups, to exhaustion would be a test of strength endurance. This strength characteristic determines an athlete's performance where a movement is repeated over a fairly long period of time. Runs between 60 seconds and 8 minutes, for example, require a lot of strength endurance.Weight training and resistance training will both develop strength. If there is an increase in muscle mass as a result of training this is called hypertrophy. Muscle hypertrophy is associated more as a result of training for maximal and elastic strength rather than strength endurance. When strength training stops the law of reversibility indicates that some strength will be lost and the muscle mass may reduce. Reduction in the muscle mass is known as atrophy. Muscle atrophy is a direct result of low, or no, activity and may be a factor in injury rehabilitation. Maximum strength is best developed by exercises which involve a low number of repetitions and a large resistance or loading. Elastic strength is developed through fast repetitions using a medium loading and strength endurance is developed using a high number of repetitions with a low resistance.

Need of the Study

Physical fitness helps to enjoy physical activity sustain skills, learning and enhance performance on the athletic field. Specific physiological systems of the body should be adopted to support a particular game. Since different games make different demands upon the organism with respect to neurological, cardio-respiratory systems are highly adaptable to exercise. For a good performance in any sports or athletic event, the high standard of fitness is a basic requirement. More participation in sports activity is not enough to improve fitness. The fitness must be gained through conditioning programme. The athletes and coaches advocate different training and coaching methods to improve their physiological, strength and endurance variables. The investigator was interested to find out the effect of sand training and spring board training on selected endurance parameters of football players.

Statement of the Problem

The purpose of the study was to find out the effect of sand training and springboard training on selected Strength endurance parameters of football players.

Methodology

Selection of subjects:

The subjects taken for the present study were sixty men football players from different colleges in Andhra Pradesh, who had represented their college in the inter-collegiate football competitions. The subjects were selected on a random basis and were allotted to three groups (control, sand training and springboard training) by random assignment. The age of the subjects ranged from 19 to 24 years with mean age of 21 years. The requirements of the experimental procedures, testing as well as exercise schedules were explained to them so as to avoid any ambiguity of the effort required on their part and prior to the administration of the study, the investigator got the individual consent from each subject.

Selection of Variables:

The research reviewed the various scientific literature pertaining to the sand training and springboard training on selected endurance variables from books, journals, periodicals, magazines and research papers. Taking into consideration of feasibility criteria, availability of instruments and the relevance of the variables of the present study.

Experimental Design

The primary responsibility of the investigator is to adopt the appropriate experimental methodology before proceeding with data collection. A pre-test - post-test randomized group design was used. Each group consisted of twenty subjects (n=20). Before the training pre-test was taken for all the groups on the selected criterion variables, strength endurance. The control group did not undergo any type of training. Sand training was given to the experimental group-I and springboard training was given to the experimental group-II on alternate days in the morning for a period of twelve weeks. At the end of experimental period, the post-test was conducted and data collected on criterion variables. The difference between the initial and final means of the groups was considered as the effect of respective treatments. The data obtained were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance.

Statistical procedure:

The following statistical tool, i.e., one way Analysis of Covariance ANCOVA was followed to estimate the effect of sand training and springboard training on selected endurance parameters of football players. As suggested by Thomas and Nelson.(1990)

$$\text{F-ratio} = \frac{(MSy.x)b}{(MSy.x)w}$$

Where,

(MSy.x)b is the final adjusted mean squares between, and

(MSy.x)w is the final adjusted mean squares within

When significant differences were noted, the Scheffe's post hoc test was used to find out the paired means significance difference.

Results and discussions:

Results on Strength Endurance

The statistical analysis comparing the initial and final means of Strength Endurance due to Sand training and Spring board training among football players is presented in Table-I.

Table-I Ancova Results On Effect of Sand Training and Spring Board Training Compared With Controls on Strength Endurance

	Sand training	Spring board training	Control group	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre-test Mean	35.35	35.80	36.00	Between	4.43	2	2.22	0.07
				Within	1899.75	57	33.33	
Post-test Mean	37.25	38.00	36.35	Between	27.30	2	13.65	0.54
				Within	1442.30	57	25.30	
Adjusted Post-test Mean	37.57	37.93	36.11	Between	37.18	2	18.59	29.98*
				Within	34.72	56	0.62	
Mean Diff.	1.90	2.20	0.35					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16.

*Significant at 0.05 level.

As shown in Table- I, the obtained pre-test means on Strength Endurance on Sand training group was 35.35, Spring board training group was 35.80 was and control group was 36.00. The obtained pre-test F-value was 0.07 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Strength Endurance on Sand training group was 37.25, Spring board training group was 38.00 was and control group was 36.35. The obtained post-test F-value was 0.54 and the required table F-value was 3.16, which proved that there was no significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 29.98 was greater than the required value of 3.16 and, hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-II

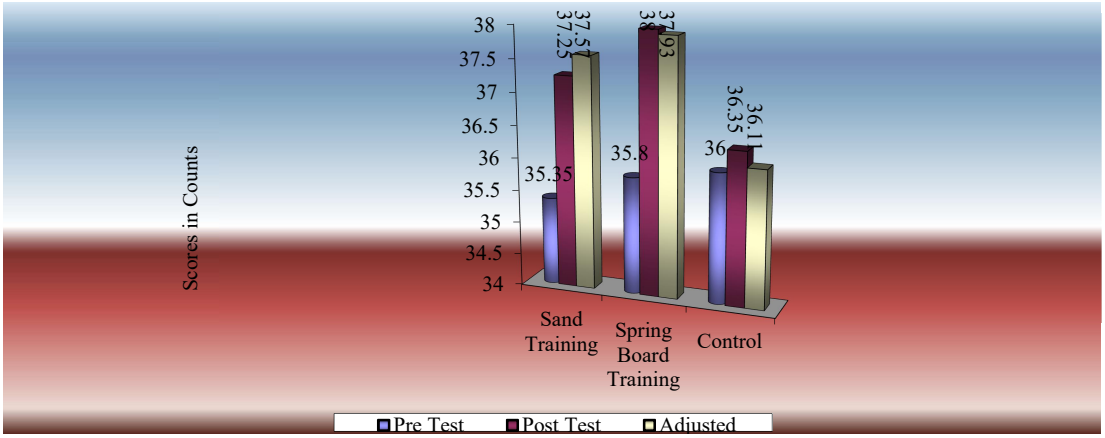
Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Strength Endurance

MEANS				Required C.I.
Sand training Group	Spring board training Group	Control Group	Mean Difference	
37.57	37.93		0.36	0.63
37.57		36.11	1.46*	0.63
	37.93	36.11	1.82*	0.63

* Significant at 0.05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Sand training group and control group (MD: 1.46). There was significant difference between Spring board training group and control group (MD: 1.82). There was significant difference between treatment groups, namely, Sand training group and Spring board training group (MD: 0.36). The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-I.

Figure-I: Bar Diagram Showing Pre-Test, Post-Test And Ordered Adjusted Means On Strength Endurance



Discussions on Findings on Strength Endurance

In order to find out the effect of sand training and spring board training on Strength Endurance the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test. The effect of Sand training and Spring board training on Strength Endurance is presented in Table-I. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 29.98 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-II proved that there was significant difference between Sand training group and control group (MD: 1.46) and Spring board training group and control group (MD: 1.82). Comparing between the treatment groups, it was found that there was no significant difference between Sand training and Spring board training group among football players. Thus, it was found that Sand training and spring board training were significantly better than control group in improving Strength Endurance of the football players.

Findings:

The study proved that 12 weeks sand training and spring board training significantly improved selected endurance parameter, strength endurance compared to control group among college level football players

Conclusions:

It was concluded that twelve weeks sand training and spring board training significantly improved endurance parameter, such as, strength endurance of the college level football players compared to control group. Comparison between treatment groups proved that there was no significant difference between sand training group and spring board training group in altering strength endurance of the football players.

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Role of Sports Psychology in Sports and Games

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Abstract

Psychology of the sportsperson is very important for achieving the heights in sports. It includes various components physical, mental, spiritual and good emotional health of the sportsperson. Psychology includes the various components like personality; attitudes, anxiety, aggression and stress also play an important role in sports. This paper identifies all these factors and their importance for the sportsperson to become the elite and successful sportspersons in their life.

Key Words: Sports, Psychology, Personality, Attitude, Anxiety, Stress etc.

Introduction:

Sport psychology is the understanding of how the mind influences an athlete's performance in their chosen sport. Within the principles of sport psychology are various concepts such as how do athletes prefer to learn, what is their personality, how can they attain states of relaxation and concentration (narrow and broad focus), how does an athlete learn to visualize a successful performance, do they understand and overcome their limiting beliefs and how does an athlete develop high levels of self-awareness. The importance of a sports psychologist as an integral member of the coaching and health care teams is widely recognized. In the past, it was assumed that these skills were genetically based, or acquired early in life. Now, it is commonly accepted that athletes and coaches are capable of learning a broad range of psychological skills that can play a critical role in learning and in performance.

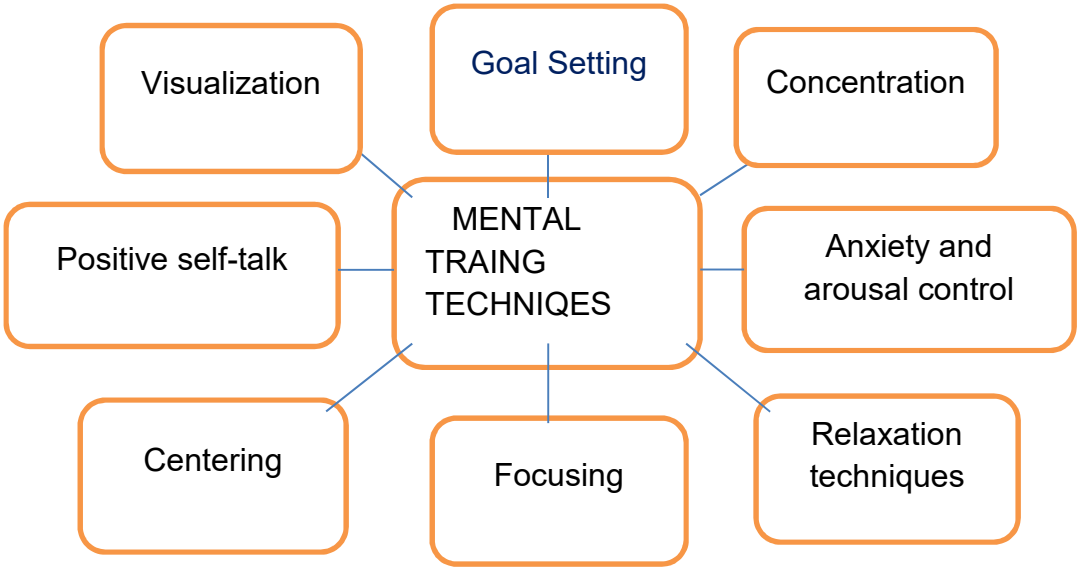
Role of Sports Psychology:

Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete's holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice. There is a powerful force guiding athletes to these super performances. It is the subconscious mind. The athlete must allow their subconscious mind to become the dominant driving force when they perform. When the athlete is able to control their subconscious, they become better at tapping their mental power to perform more consistently at a high level. Only when tapping into your mind's power will your body be able to operate on pure instinct and more consistently under stress. The result is more opportunities to achieve peak performances. Elite athletes are constantly looking to improve their performance to acquire an edge on their competitors. No matter

how physically prepared an athlete is, it is their mental preparedness that makes the difference when competing against each other. Conditioning the mind is just as important as conditioning the body! Think of your mental attitude as the ultimate secret weapon that gives you an edge.

Psychological factors effecting physical performance:

Physical performance or performance in sports is no longer dependent on physiological well-being of the athlete. It is well established by now that there are numerous psychological factors which effect and improve the physical performance. The point where physiological response potential reaches the dead end, the psychological process seems to make the athlete click, by providing the boost or energy to achieve the goal, which physiologically seemed impossible. That is why psychological training and conditioning are now-a-days a part and parcel of total sports training programs.



Important Psychological Factors Which Effect The Physical Performance Are:

Individual differences among the athletes:

Each athlete is unique to oneself. Apart from physiological differences such as height, weight etc. they are bound to the psychological differences as well. Some athletes may be outgoing and extrovert whereas others may be shy, introvert and withdrawn, and they may also differ in their levels of perception. Some athletes are born strong psychologically while others have weak dispositions. Athletes with weak dispositions fail to accomplish their task. Thus individual differences in sports performance are an inevitable phenomenon, and the teacher/coach has to modify his approach according to the nature of each individual athlete.

Personality:

The human personality is a marvelously intricate structure, delicately woven of motives, emotions, habits and thoughts, into a pattern that balances the pulls and pushes of the outside world. It is the totality of his being that includes his physical, mental, emotional, and temperamental makeup. His experience, perception, memory, imagination, instincts, habits, thoughts, and sentiments constitute his personality. Therefore, personality differences

are inevitable, as two individuals cannot possess similar personality traits. Personality traits are basic to sports excellence. It is necessary to identify and cultivate those personality traits which are most conducive to the performance in sports. Hence personality is an important psychological factor which, to a great extent, determines the result of any athletic output.

Intelligence:

Intelligence is the aggregate mental capacity or energy of an individual to act purposefully, to think rationally, and to deal effectively with one's environment, Intelligence involves awareness, is goal directed, and has value. It is an ability to undertake the activities that are difficult, complex, and which lead to the creation of something new and different. Intelligence of an individual plays an important role in effecting physical performance.

Stress:

Stress is defined as a physical, mental or emotional, demand which trends to disturb the homeostasis of the body. It is an everyday part of life, if there were no stresses, we would probably "dire of boredom". Stress is inevitable in life and sport, and all performing actors, artists and athletes perform their tasks with varying stress levels. Used rather loosely, the term may relate to any kind of pressure, be it due to one's job, schoolwork, marriage, illness or death of a loved one. The common denominator in all of these is change. Loss of familiarity breeds this anxiety with any change being viewed as a "threat", Hans Sale developed a model for the possible effects of chronic stress on the body. His model is the general adaptation syndrome, Which occurs in three stages alarm, resistance, and exhaustion.

- The alarm stage is triggered when the individual encounters a threatening stimulus or situation. The alarm stage is a relatively short period of activation of the fight-or-flight response. If the threat is avoided, the stage ends and the body returns to a more relaxed state.
- If the threat does not end, and the initial reaction turns into a prolonged state of stress, the resistance stage begins. This is a chronic, moderate state of activation. It cannot be kept indefinitely.
- The exhaustion state starts when the individual's energy and strength are used up as a result of maintaining a prolonged state of resistance. believed that vital resources were drained from the immune system, leaving the organism vulnerable to illness, fatigue and injury.

Attitude:

Attitudes are about thoughts and feelings. Attitude is often thought to predict behavior attitudinal responses are also evaluative in nature. They are significant in deciding the kind and extent of the learning that takes place and reflect the likes and dislikes concerning a specified object of action. For example, if a child says "Like running", it reflects his attitude towards running, and if a child says, "I don't like running" it shows this child's attitude towards running. Attitudes involve knowledge and beliefs. Attitudes are developed through direct experience and interpersonal communication. Positive beliefs and values concerning physical activity result in development of good and positive attitudes, enabling the athlete to strive hard for better performance.

Motivation:

Motivation is a force, a drive which prompts, compels, and energizes an individual to act or behave in a particular manner, at a particular time, for attaining the specific goal or purpose. In the absence of motivation, either there will be no learning, or very little learning, and the learned activity or skill will be forgotten very soon. Motivation is the first requisite of efficient learning. Motivation is basic to overcome the hurdles which otherwise could have influenced the performance negatively. Without proper attention, keen interest, setting of right attitude,

and the resulting optimum level of motivation, many top class athletes have failed to accomplish their task. It is thus necessary to find out ways and means of motivating athletes for better physical performance.

Aggression:

Aggression is a part of human behavior and is necessary for an individual to live and struggle for higher achievements. Struggle for supremacy, dominance, and excellence in sports obviously involve aggression. Aggression, in one form or the other, is inevitable and inescapable in sports activities. When hostility takes over aggression, the situation becomes alarming and it becomes an anti-social behavior. Aggression may help in the performance of an athlete because it arouses the athlete to put in harder effort for the success of the team. Athletes must be helped to reduce and control aggression in order to play calmly and perform the best. Appropriate level of aggression, as permitted under the rules governing the game, tend to improve the skill and enhance the effort, and on the other hand, high or low level of aggression will hamper and retard the performance

Arousal and Activation:

The term arousal reflect the varying degrees of readiness to perform physically, intellectually, or perceptually. Activation is a short term change of energy mobilization, and implies raising of energy above an individual's arousal, baseline, for a brief period. Arousal and activation are the bodily states and feelings that indicate the degree to which an athlete is physically and emotionally ready to perform. With appropriate levels of activation and arousal athletes tend to see better, think more clearly, and concentrate longer regarding the impending situations. Over-excitement over-activation and Over-arousal of an athlete may result in reduction of performance, or even in an inability to perform at all, whereas, optimum levels of arousal and activation at the relevant time may definitely help in better performance. It is, therefore, necessary to know what are the real activating forces that push and pull an athlete to move or act for achieving the goal..

Anxiety:

Anxiety means a disturbed state of mind; emotional reactivity; arousal; nervousness; and unrealistic and unpleasant state of mind. Anxiety is an essential ingredient of any competitive situation and without certain level of anxiety, there cannot be competitive performance. Neither too high, nor too low level of anxiety is conducive to sports performance. Adequate level of anxiety produces best results. Unless sports persons learn to cope up with stressful competitive situations by managing anxiety, they would fail to achieve their goal.

Attention and Concentration:

Attention is the concentration of consciousness upon one object. It is the process of getting an object or thought clearly before the mind. It helps in bringing mental alertness and preparedness, and as a result, one becomes alert and alive, and tries to exercise one's mental and physical power as effectively as possible. Giving high quality attention to the skill /task during sports competition is important for effective performance. Various cognitive strategies and intensive over learning of skills may enhance the capacity to focus attention on the task at hand resulting in better performance. There are number of factors which distract and reduce attention and concentration, which in turn will result in poor performance.

Mental Imagery:

Mental ability and imagery help the athletes to mold their emotional state, and the way they approach the physical efforts. Such mental activity enables the athlete to improve the execution and precision of the given skill or task by thinking and imagining about it. Mental imagery of critical competitive situations is essential to boost the fighting spirit to help an athlete to organize himself in a better way. Mental rehearsal of competitive situations certainly help in improving athlete's emotional state as well as his physical performance. It also help in the smooth flow of energy as and when required.

Group Dynamics:

A sports team is comprised of various individual athletes, each having different orientations and perceptions, and at times, these differences may interfere with performance of the team. Better performance will result if each member of the team merges his personal feelings and abilities into a total team effort. Success of a team depends on adjustment within i.e. how closely the team seems to be working and feeling together. Psychological togetherness among the members of the team does reflect on the outcome of the performance. Group dynamics and performance are thus mutually influential, and are further influenced by the stability of the personnel concerned with the team. It has been found that better group cohesion, generally tend to produce better performance.

Conclusion:

The importance of sports psychology has been realized for decades, however many coaches and athletes pay too little attention to how it can help them perform better. Many coaches and athletes still focus on the physical aspect of sporting performance but sports performance is determined by a combination of physiological factors, technical skill, tactical insight and state of mind. All four factors are critical to peak performance. One could argue however that the last of these is the executive function, as it is the mind which determines whether or not what you have trained in over the past few years, is brought out on the day – at that moment when it matters most, yet it is this aspect of sports performance which has traditionally been paid the least attention in preparation for competition. Hence, in a world where many athletes are physically, technically and tactically increasingly similar, it is the mind which offers perhaps the greatest scope for a competitive advantage. The role of mind has become even more important with the rapidly increasing commercialization of sport, which has presented new pressures for athletes across many levels and ages. To conclude we can say that sports psychology plays a vital role in enhancing the performance of the players.

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A Comparative Study of Anthropometric Variables and Motor Fitness Components between Cricket Players and Hockey Player's In Palamuru University.

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Abstract

The purpose of the study was to compare the Anthropometric variables and motor fitness components between cricket and hockey players in palamuru university for that 20 male cricket players and 20 male hockey players randomly selected in palamuru university anthropometric variables of players recorded and 12 minutes run - walk test administered and recorded ,50yards dash administered and recorded the main objective of the study was to find out anthropometric variables and motor fitness components

Key Words: Anthropometric, motor fitness, cricket players, hockey players

Introduction:

Anthropometrics was first used in the 19th and early 20th century in criminalities, to identify criminals by facial characteristics. Francis Galton[1] was a key contributor as well, and it was in showing the redundancy of Bertillon's measurements that he developed the statistical concept of correlation. Bertillon's system originally measured variables he thought were independent—such as forearm length and leg length—but Galton had realized were both the result of a single causal variable (in this case, stature).

The French savant and Alphonse Bertillon (1853)[2], gave this name in 1883 to a system of identification depending on the unchanging character of certain measurements of parts of the human frame. He found by patient inquiry that several physical features and the dimensions of certain bones or bony structures in the body remain practically constant during adult life. He concluded from this that when these measurements were made and recorded systematically every single individual would be found to be perfectly distinguishable from others. The system was soon adapted to police methods, as the immense value of being able to fix a person's identity was fully realized, both in preventing false impersonation and in bringing home to any one charged with an offense his responsibility for previous wrongdoing. "Bertillonage," as it was called, became widely popular, and after its introduction into France in 1883, where it was soon credited with highly gratifying results, was applied to the administration of justice in most civilized countries. England followed tardily, and it was not until 1894 that an investigation of the methods used and results obtained was made by a special committee sent to Paris for the purpose. It reported favorably, especially on the use of the measurements for primary classification, but recommended also the adoption in part of a system of "fingerprints" as suggested by Francis Galton, and already practiced in Bengal.

Anthropometric studies are today conducted for numerous different purposes. Academic anthropologists investigate the evolutionary significance of differences in body proportion between populations whose ancestors lived in different environmental settings. Human populations exhibit similar climatic variation patterns to other large-bodied mammals, following Bergmann's rule, which states that individuals in cold climates will tend to be larger than ones in warm climates, and Allen's rule, which states that individuals in cold climates will tend to have shorter, stubbier limbs than those in warm climates. On a micro evolutionary level, anthropologists use anthropometric variation to reconstruct small-scale population history. For instance, John Relethford's studies of early twentieth-century anthropometric data from Ireland show that the geographical patterning of body proportions still exhibits traces of the invasions by the English and Norse centuries ago. [3]

Anthropometric techniques are used to measure the absolute and relative variability in size and shape of the human body. Depending on the objective, anthropometric instrumentation may include weighing scale, anthropometer, skinfold calipers, body volume tanks, and bioelectrical impedance analyzers. Similarly, radiographic instruments and x-ray scanners such as dual-energy-ray absorption meters and ultrasound densitometers are used for quantifying cortical bone density, bone mass, subcutaneous fat density, and lean body mass.[4]

Motor fitness components

Harrison Clarke was one of the first to write extensively about motor fitness components. Indeed, we would consider him and his contemporaries such as Tom Cureton, Wilhelm Raab and Arthur Steinhaus as the leaders in changing the way we view physical fitness today. The definition of fitness in 1958, when the first national youth fitness test was developed is considerably different from our current definition of physical fitness. In addition, new terms have been developed such as metabolic fitness and wellness. Landmark documents such as the Healthy People series of national health objectives (U.S. Department of Health & Human Services, 2000; U.S. Department of Health & Human Services, 1990; U.S. Department of Health, Education, & Welfare, 1979) have helped standardize some terms as have other documents such at the two international consensus conference volumes (Bouchard, et al., 1990, 1994) and the more recent Surgeon General's Report on Physical Activity and Health (U.S. Department of Health & Human Services, 1996). We have drawn from these and other sources some common current definitions for key terms in our field. We focus on those terms that typically reoccur in the Digest from issue to issue. It is not our intent to suggest that the terms, as defined in this document, are the only definitions that are appropriate for use. Neither is it our intent to suggest that the terms defined in this issue is a comprehensive list of all relevant terms. Rather, it is our notion to define some of the most commonly used terms in the field (and commonly used in the Digest) and to use definitions that are consistent with experts in our field.[8]

Physical fitness combines good health and physical development. The object of any program of physical fitness is to maximize an individual's health, strength, endurance, and skill relative to age, sex, body build, and physiology. These ends can only be realized through conscientious regulation of exercise, rest, diet, and periodic medical and dental examinations. Exercise should be regular and vigorous, but begun slowly and only gradually increased in strenuousness. Popular exercise methods include jogging, cycling, and the use of body-building machines. It is more important that periods of sleep be regular and restful than that they extend any fixed number of hours. A properly balanced diet in proteins, carbohydrates, vitamins, and minerals is essential. Conscientious dental hygiene and periodic checkups are also strongly advised. Complete and regular physical examinations should be the basis of any program of physical development. Tobacco smoking, as well as alcohol and drug consumption are counterproductive to any physical fitness program. Although sports are related to physical fitness, care must be

taken that injuries do not occur, and that the skin is adequately protected against the cancerous effects of solar radiation.[9]

Physical fitness is the functioning of the heart, blood vessels, lungs, and muscles at optimum efficiency. In previous years, fitness was defined as the capacity to carry out the day's activities without undue fatigue. Automation increased leisure time, and changes in lifestyles following the industrial revolution meant this criterion was no longer sufficient. Optimum efficiency is the key. Physical fitness is now defined as the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo-kinetic diseases, and to meet emergency situations. Fitness can also be divided into five categories: aerobic fitness, muscular strength, muscular endurance, flexibility, and body composition.[10]

Physical fitness should be the result of the balance of activities that are provided in the physical education programs at school and continued by the family and in other community activities outside of school. The four performance objectives can be practiced at home with a minimum of adult supervision. Practicing at home initiates the opportunity or parents and students to exercise and be physically active together, making fitness a family activity.[11]

Importance of Cricket

Cricket is a bat-ball team sport that is first documented as being played in Southern England in the 16th century. By the 18th century, cricket had developed to the point where it had become the national sport of England. The expansion of the British Empire led to Cricket being played overseas and by the mid 19th century the first international matches were being held. Today, the sport is played in more than 100 countries. It is estimated that more than two billion people watched the last cricket world cup. The rules of the game are known as the laws of cricket. These are maintained by the International Cricket Council (ICC), the governing body of cricket, and the Marylebone Cricket Club (MCC), the club that has been the guardian of the laws since it was founded in 1787.

A cricket match is played on a cricket field at the center of which is a pitch. The match is contested between two teams of eleven players each. In cricket, one team bats, trying to score as many runs as possible without being dismissed ("out") while the other team bowls and field, trying to dismiss the other team's batsman and limit any runs being scored. When the team that is batting have used all their available overs or have no remaining batsman the roles become reversed and it is now the fielding teams turn to bat and to outscore the opposition.

There are several variations in the length of the game of cricket. In professional cricket this ranges from a limit of 50 overs per side (limited overs cricket) to a game played over 5 days (Test cricket). Depending on the length of the game being played, there are different rules that govern how a game is won, lost, drawn or tied.

Importance of Hockey

Morphological parameters (stature, weight, segment lengths, diameters, circumferences, body composition), functional characteristics (work capacity, respiratory performance, static strength of hand) and asperespiratory performance, static strength of hand) and aspects of health-and skill-related fitness (explosive strength, speed, anaerobic and aerobic endurance, agility) of 141 well-trained young female field hockey players (10

to 18 y) were examined and analyzed. The main purpose of the investigation was to study growth trends of these parameters of female field hockey players and to analyze the character and feature of their development. Given the importance that morphological and functional parameters and aspects of health- and skill-related fitness of athletes can play on performance, the purpose of this study is to examine growth trends of morphological and functional parameters of female field hockey players (10 to 18 y) and to analyze the character and feature of their development.[13]

Statement of the Problem

The purpose of the study was to select the cricket players in the university team. The purpose of the study was to find out the difference between selected anthropometric variables and selected motor fitness components among cricket and Hockey men players.

Hypothesis

It was hypothesized that there would be a significant difference on selected anthropometric variables and selected motor fitness components variables among cricket and Hockey men players.

Delimitations

The study was delimited in terms of contents and sample as follows:

1. The study was restricted to 10 cricket and 10 Hockey men players from Palamuru University.
2. The number of subjects in each game was fixed as 10 which was Considered to be large enough for this study.
3. The study was confined to those in the age group of 18 to 25 years.
4. The study was restricted to four anthropometric variables which were height, weight, dominant hand length, dominant leg length and motor fitness components which were restricted to speed, agility, cardiovascular endurance.
5. 50yards dash, shuttle run, and the 12 minutes run and walks are the test used.

Limitations

1. Heredity and environmental factors which might have influenced the results of this study could not be controlled.
2. Emotional status of subjects and motivational status of the subjects was accepted as limitations.
3. Socio-economic status was not taken into consideration.
4. Previous training and experience was not taken into consideration.
5. Certain factors like habits, lifestyle, daily routine work, diet, sleep and rest of the subjects were not taken into consideration

Health related fitness focuses on optimum health and prevents the onset of disease and problems associated with inactivity.[24]

Review of Related Literature

Maaroos and Landor (2001)[1] has stated that physical activity and fitness have important health promoting effects with respect to Atherosclerosis and coronary heart disease in particular. An intervention study of physical status and physical activity in university undergraduates (University of Tartu) has been carried out. The physically inactive (Group I) consisted of 310 undergraduates (235 females and 75 males) of the Faculty of Medicine. The physically active (Group II) was recruited from among undergraduates (22 females and 23 males) of the Faculty of Exercise and Sport Sciences, who participated in training sessions regularly, 3 to 5 times per week. Anthropometric body measurements, arm force, vital capacity and exercise test on the bicycle Ergometer (PWC170) were performed. There were no statistically significant differences between the mean values of anthropometric indices in case of physically inactive and physically active female subjects. In the group of physically active male undergraduates, weight and shoulder width were larger than in students with physically sedentary lifestyle ($p < 0.05$). Most of the female and male students had normal BMI. There were statistically significant differences in the mean values of vital capacity, arm force and aerobic working capacity between the study groups, while physically active students had higher physical capacity ($p < 0.001$). Mean anthropometric indices demonstrated a statistically significant increase in both female and male university undergraduates after the interval of 30 years. Normal BMI and anthropometric indices do not serve as a guarantee of physical fitness for university undergraduates who are involved in a sedentary lifestyle. Regular physical activity has a strong positive impact on physical fitness, particularly on aerobic capacity which is the most important health promoting component of physical fitness with respect to coronary heart disease.

Arroyo, et al., (2006)[2] has done research on anthropometric, body composition and functional limitations functional limitations limit the independence and jeopardize the quality of life of elderly subjects. AIM: To assess the association between anthropometric measures and body composition with functional limitations in community-living older people. MATERIAL Cross-sectional survey of 377 people > or = 6 5 years old (238 women), randomly selected from the SABE/Chile project. Complete anthropometric measurements were done. Handgrip muscle strength was measured using dynamometers. Body composition was determined using Dual-Energy X-Ray Absorptiometry. Functional limitations were assessed using self reported and observed activities. Body mass index was strongly associated with fat mass (men r =0.87; women r =0.91) and with lean mass (men r =0.55; women r =0.62). Males had significantly greater lean mass (48.9 kg vs 34.9 kg), and bone mass than females (2.6 kg vs 1.8 kg) and women had higher fat mass than men (26.3 kg vs 22.9 kg). The prevalence of functional limitations was high, affecting more women than men (63.7% vs 37.5%, $p <0.01$). Functional limitations were associated with lower handgrip strength in both sexes. In the multiple regression models, with functional limitations as dependent variable and anthropometric measures as contributing variables, only hand grip strength had a significant association (negative) with functional limitations in both genders. Age was also a significant risk factor for functional limitations among women. Hand grip strength was strongly and inversely associated with functional limitations. Handgrip dynamometry is an easy, cheap and low time-consuming indicator for the assessment of functional limitations and the evaluation of geriatric interventions aimed to improve functional ability.

Fray and Chow (1998)[3] has evaluated the negative impact of obesity on physical fitness and motor abilities has been documented in youth of various ages; however, this issue has not been explored in youth with mild intellectual disabilities (ID). Youth with ID are considered more overweight, less physically fit, and less motor proficient than peers without ID, so it is important to determine if these variables are associated in this population. The purpose of this study was to examine the relationship between body mass index (BMI), physical fitness, and motor skills in a large sample of youth with mild ID. A systematic, stratified sampling method was used to select 444 youth with mild ID, aged 6-18 years, from eight special education schools in Hong Kong . Physical fitness was assessed using items from the national Hong Kong assessment: 6- (ages 6-8 years) or 9- (ages 9-18 years) minute run, sit-up, isometric push-up, sit and reach, and sum of skinfold. Functional motor skills were assessed in 244 youth

from the fitness sample using the Test of Gross Motor Development-II. Subjects were categorized into normal or overweight/obese BMI groups based on international cutoff points. Approximately 20% of the sample was classified as overweight/obese (average BMI normal = 17.47+/-2.69; overweight/obese = 24.78+/-4.05). ANCOVA controlling for age and gender revealed group differences in the run (P = 0.001) and push-ups (P = 0.05), but not in the motor or other fitness variables. After controlling for age and gender, BMI was correlated with the run (r = -0.27, P < 0.001) and push ups (r = -0.18, P = 0.008). Age and gender were entered as the first block in hierarchical regression and accounted for most of the variance in all dependent variables, except sit and reach. The inclusion of BMI in the second block added to the model for run and push-ups only (deltaR2 run = 0.04, push-ups = 0.03, P<0.001). Overweight/obesity is minimally associated with aerobic fitness and muscular strength in youth with mild ID. BMI did not impact other fitness measures (sit-up, sit and reach) or motor skills in the sample. The undesirable level of overweight/obesity in this sample requires increased attention and immediate intervention.

Methodology:

Sample:

For the present study 25 male Cricketers will be selected from palamuru university Telangana state between the age group of 18 years to 25 years.

Procedure of data collection

Motor Fitness variables Test

- Speed: 50 meters dash
- Agility: Shuttle run 10mts
- Cardiovascular endurance: 12minutes run and walk

Reliability of the Data

The reliability of the data is established by ensuring instrument reliability and tester competency.

Reliability Instrument

Instruments such as stadiometer, weighing machine and stop watches were used for this study. All the instruments were in good working condition.

Subjects Reliability

The correlation value test and retest method was used and for the subject's reliability the same subjects were used under similar conditions by the same tester.

Orientation of the Subjects

The subjects for this study were oriented and the purpose of the study was explained. The method of performing each test item was explained to them before conducting the test. The researcher herself explained and demonstrated

each test. The recordings of the measurements were made known to the subjects with a view to familiarize them with their performance.

Anthropometric Variables

Height

Purpose:

The purpose of the study was to measure the height of the subjects.

Equipment's:

Stadiometer and score sheets were used.

Procedure:

The subject stood on the stadiometer barefoot. At the time of measuring the heels were on the platform without elevating it. The scale was brought down firmly in conduct with vertex. A mark was made with a chalk piece on the side of the scale on the stadiometer. After that the subject stepped away from the stadiometer stand board.

Scoring:

The vertical distance from the stadiometer stand board to the chalk piece mark was measured. The measurement was taken to the nearest one centimeter.[1]

Weight

Purpose:

The purpose of the study was to measure the weight of each subject.

Equipment's:

Weighing machine and score sheets.

Procedure:

The subjects stood on the weighing machine barefoot and ideal clothes at the time of weighting. The sole of the foot was on the weighing machine without elevating it and the body was kept in erect position. After the scale vibration was stopped the reading was taken.

Scoring:

The weight was recorded to the nearest kilograms.[2]

Independent variable: Cricket players and hockey players

Dependent Variable: Anthropometric variables and Motor fitness components

Statistical Treatment:

The Mean, Standard Deviation, Standard Error, t-ratio or other Suitable Statistical techniques will be used to analyze the data. Summary, Conclusion and suggestion for the further research. At the end of result will be summarized, conclusion will be drawn and few suggestions will be given for further research in this field.

Conclusion

Within the limitation of the study and on the basis of the obtained results from this study, the following conclusions had been drawn:

1. It was concluded that the cricket players were better than hockey players on height, body weight, and dominant arm length.
2. The hockey players are better than the dominant leg length, stock speed and agility.

Recommendations

On the basis of observations and conclusions drawn from this study, the following recommendations were made:

1. A study may also be conducted to evaluate the inter college team on physical fitness variables.
2. Similar studies may also be conducted for men players.
3. Similar studies may be conducted in various games and sports and compared.
4. Similar studies may be conducted on different age groups and sex.

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A Comparative Study on Physical Fitness (Speed, Endurance, Agility) Among the Basketball and Handball Players (Boys) Between Age Group of 18-22 Years In Warangal District

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Abstract

The purpose of the study was to compare the speed, endurance, agility of the Basketball and handball players' boys' age group of 18-22 years in Warangal district. A total of 40 player (each 20 basketball and 20 of handball) were randomly selected from different degree colleges in Warangal district .Selected variables, that is speed, endurance, agility were measured using respective techniques and equipment.

Introduction

"Education" contributes to the development and perpetuation of the nation's culture. Education is not only confined to the limits of schools, colleges and universities, but it is present in all the experiences of an individual at home, clubs, playgrounds and in the society at large. Physical Education" has much to contribute during the school years, as when an individual can develop his body into a strong and beautiful machine, endowed with skillful movements and co-operated action. It has a major contribution to make in the growth and development of all youth. Cureton has discussed physical fitness into three aspects (1) physique, (2) organ efficiency, (3) motor efficiency. Physical fitness is the capacity for activity, it is a positive and dynamic quality and is closely related to diet, exercise, rest and emotional outlook.

Wiligoose defines physical fitness as the capacity for any activity. The greater the physical fitness, the greater the physical endurance and precision of movement, the longer a Person will be able to keep going, he will be able to perform more efficiently and at greater speed and to recuperate faster from fatigue. "Harrison Clarke" points out that physical fitness is an organic soundness consisting of three components;. (1) Muscular strength, (2) Muscular endurance, (3) Circulatory and respiratory endurance. The effectiveness of all body movements depends upon the status of their interrelated components. Physical fitness refers to the organic capacity of an individual to perform the task of daily living without tiredness and fatigue and still have a reserve of strength energy available to meet satisfactory sudden genera placed upon him.

Advantages of Physical Fitness

1) Improved health
2) Improved status of well being
3) Improved appearance
4) Increased stamina

"Habit of regular exercises' '. Significance evidence has been produced that the general physical performance ability of the people depends mainly on their physical fitness.

According toe Victor Fitness is a transitory state and the physically fit persons of the movement can be unfit tomorrow, if he fails to keep up the 'Barrow' and `Mogee' have defined education as "a change, a modification or an adjustment on the part of an individual as a result of experience"Early Greek and Chinese civilizations were concerned with the physical development of the individual. Each change in civilization through the ages brought about change in the need of physical fitness. Fit persons are the nation's pride and they are an asset to the country in all respects of progress and development. In fact countries like the USA, Germany, China, France etc., have insisted on military training for the people because of the importance of "Physical Fitness" to the people of the respective countries who can work hard for trade and business and also will extend a helping hand in protecting the country at the time of invasion by the enemies.

Physical fitness is a capacity for sustained physical activities. It is the key to success, in every walk of life, the progress of any country depends mainly on the degree of physical fitness of the people. In order to make the people fitness conscious, the government of India has introduced a scheme of National Physical efficiency Drive". Physical fitness will be general and specific physical fitness. It can be health and skill related to physical fitness. Physical fitness is one of the basic requirements of life. Broadly speaking it means the ability to carry out our daily tasks without being fatigued.

The aim of "physical fitness" must be immovable to the qualities of the educated person. The aim of physical education is the optimum development of physically, socially and mentally integrated and adjusted individuals through participation in large muscle activities. Physical fitness is the capacity for activity. It is a positive and dynamic quality and it is closely related to diet, exercise, rest and emotional outlook. Physical fitness is demonstrated through physical performance the greater the physical fitness, the greater the physical endurance and precision of movement.

History of Basket Ball

Basketball is the game of modem times as on none of its form was played in past .Dr James Naismith was a physical education teacher in YMCA Training School at Springfield USA He invented this fast paced offensive game in 1891 initially a bladder ball was used to put into the basket which wise hung at the the end lines of the court ,Ball can be moved either by bounce or by passing to score of a basket this game gained popularity after sum years. When it was played as a demonstration game in 1924at Paris Olympics later set rules were framed it was officially introduced in 1936 Berlin Olympics games at world level it rules and technicality is regularity by federation international de basketball association (FIBA). In India the development of basketball is regulated by basketball federation of India (BFI) after it was constructed in 1950 at tin Asian games it was also completed in 1951 at Delhi. Today this is a very popular game among Europeans and Americans as it requires high fitness standards. Americans have developed a new form of basketball named as NBA. With fast paced rules and dimensions women basketball is also popular among Americans and Europeans Australians. India has picked up this game very slowly. The standards of Indian players as compared to international standards are low at the court. This game is popular among tall individuals as they gain height advantage.

History of Handball

Handball has become one of the leading ball games all over the world today. It is a game with 'action' every second. The complexion of the game takes a sudden turn with every action. This game originated in 'Germany' at the end of the 19th century by "Konard Kocch", a gymnastic master. But it was actually developed during the 20th century. Handball is an international and Olympic game. In the year 1928, eleven nations of handball teams met in

Amsterdam on the occasion of the Olympic games and formed the International Amateur Handball Federation. Handball has been included as one of the regular events of the Olympic games from Munich from Montreal Olympic in the year 1976. Since then it is a regular event for the men and women in the Olympics. The Asian Handball Federation was formed in the year 1974 at the time of "Teheran Asian Games", Since then the Asian Handball Federation was trying to included this game as a regular events in the Asian Games. This game was introduced in India in the year 1972 by Amateur Handball Federation of India (AHFT). The Indian Federation came into existence at Robtak, Haryana state in the year 1972.

Today the game has undergone a number of changes and modifications in such a way that it has become the fastest game in the world. Handball consists of skills that redress specialized and intensive training and dedication from the coach as well as the players' side. The skills that are required to make a learner or player successful are passing, shooter 1, jumping, throwing and rebounding.

Statement of the Problem

The purpose of the study was to find out whether there is any significant difference in physical fitness among the basketball players and Handball players in warangal District. In the age group 18-22years.

Hypothesis

It was hypothesized that the Handball players might possess physical fitness significantly higher than the basketball players in Warangal District.

Significance of the Study

1. This study will help to estimate the physical fitness of the basketball players and Handball players in warangal District.
2. This will also help to compare the fitness level of basketball players and Handball players.
3. This study may help the physical education teachers, physical directors, coaches and other physical education personnel.
4. This research may also help in bringing new scope relating to physical fitness of both the groups, which may be investigated by future research scholars.
5. This study may motivate the students to improve their physical fitness.

Objective of Study

This research will help to estimate physical fitness of basketball players and handball players In warangal District.

Limitations

1. This study is limited to Basketball players and Handball players in warangal District.
2. The food habits, the climatic conditions, physiological factors which may influence the results of the study could not be controlled by the researcher
3. These subjects were continuously involved in their routine activities, which is kept as a limitation of the study.

Delimitations

1. The study is limited to age group of 18 to 22years boys of basketball players and Handball players boys in degree college at warangal District.
2. The Study is limited to three components of physical fitness: Agility, Speed and Endurance.

Summary

The purpose of this study was to compare the physical fitness among age groups of 18to 22years of Basketball and handball and ball Players boys in degree college warangal District. For this study the investigator considered PHYSICAL FITNESS COMPONENTS on the Handball and Basketball Players boys in degree college warangal District. To test the physical fitness among Handball & Basketball Players degree college Boys. The investigator calculated Mean, Standard deviation, standard error and t-ratio for significance of the study.

The Physical fitness components consist of the following items.

Tests	**Variables**
50 yard dash	Speed
10 x 6 meters shuttle run	Agility
600 meters run	Endurance

Physical skill is well established and based upon physical fitness like speed, agility and endurance. Application. of appropriate physical fitness is essential to ensure success in one endeavor for success in sports and games. 20 Basketball and 20 Handball Players in degree college warangal District were randomly selected for conducting the test. They were briefed about t rPt'se 01 the lowly anti demonstrated test of the physical fitness components. They were given preliminary practice before the conduct of the test and afterwards the collection of data for this study was done. The tests were conducted under the direct supervision of the investigator. After analyzing the test results the investigator derived some of the conclusions.

Conclusions

The following conclusion may be drawn from the results of the study.

1. The results of the study shows the physical fitness of Basketball and Handball players are above the average.

2. The Basketball players possess more physical fitness when compared with Handball Players.
3. The Basketball players are superior to the Handball players in two components of physical fitness.

Recommendations

In the light of the facts presented above the investigator has made the following recommendations.

- Educational institutions are the main agencies to promote players and childhood educational institutions must provide adequate facilities to the children to become fit by taking part in various physical activities.

- Government sports organizations must come forward to provide opportunities to talented individuals to improve their performance through active participation in tournaments, by opening sports hostels, providing funds to voluntary clubs etc.

- All the physical education teachers who are conducting the games and sports must be specialized in their own field, so that the best learning can be made possible among the participants.

- The investigators make the above recommendations for the benefit of children and also for the pride of the nation. Through games, sports one develops discipline, peace, friendship, self confidence, leadership qualities and other important physical and mental fitness.

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Effects of Plyometric Training for the Development of Explosive Strength among the Kabaddi Players of Nalgonda District.

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Abstract

This study was concluded to find out the Effect of Plyometric Training for the Development of Explosive Strength. This was an experimental study. For concluded this study, N=40 District Kabaddi players were selected as subject age about 18-22 years. The selected thirty subjects were divided into two equal groups of fifteen each as one experimental group and one control group, in which experimental group – I (n=20) underwent plyometric training (Male Kabaddi players) for three days per week for eight weeks, group – II (n=20) and acted as control who are under general training. The experimental group's performance on standing broad jump improved from pre-test to post-test Mean S.D. After 8 weeks of plyometric training, it is concluded that significant effect in experimental group I and whereas the control group exhibits a stagnation in their performance. Key Words: explosive strength, Plyometric training, standing broad jump.

INTRODUCTION:

Plyometrics also known as jump training or plyos, are exercises in which exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle to a in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by, especially, sprinters, and, to improve performance, and are used in the fitness field to a much lesser degree.

kabaddi is a Played between two teams of seven players, the objective of the game is for a single player on offence, referred to as a "raider", to run into the opposing team's half of a court, tag out as many of their defenders as possible, and return to their own half of the court, all without being tackled by the defenders, and in a single breath. Points are scored for each player tagged by the raider, while the opposing team earns a point for stopping the raider. Players are taken out of the game if they are tagged or tackled, but are brought back in for each point scored by their team from a tag or tackle. It is the popular in the Indian subcontinent and other surrounding of Asia countries. Although accounts of kabaddi appear in the histories of ancient India. The game was popularized as a competitive sport in the 20th century. Game of Andhra Pradesh, Bihar, Haryana, Kerala, Maharashtra, Odisha, Punjab, Tamil Nādu, Telangana and Uttar Pradesh.

Dharod et al. (2020) investigated the effect of traditional Kabaddi training and combined it with plyometric training. They had chosen the sixty-one sub-elite male kabaddi players, and they have tested the variables such as explosive power, agility, strength, balance, and aerobic performance. The training period was stipulated for 12 weeks. The traditional kabaddi training with plyometric training group players shows significant improvement in explosive power, flexibility, balance, agility, and aerobic capacity when compared to the control

group. Plyometric training alone has a significant impact on specific physical fitness in male Kabaddi players by improving explosive power, flexibility, agility, and muscle strength, which is speculated to positively impact raiding and defence performance. Hence, the results of the study suggested that plyometric training be integrated with traditional kabaddi training to enhance the performance of Kabaddi players.

Bogdanis et al. (2019) examined the impact of 8 weeks of plyometric training on power, speed and agility performance. For this purpose, the researchers elected the 50 female gymnasts, and they were undergoing plyometric training twice per week apart from their regular training. The age of the gymnast was ranged from 7 to 9 years. The following test were conducted to test the power, speed and agility, were one-leg and two-leg countermovement jump (CMJ), drop jump (DJ), squat jump (SJ), and standing long jump (SLJ), 10 and 20 m sprints, 5 + 5 m and 10 + 10 m agility. There was a significant improvement in jumping performance in all factors. And also, sprinting time and agility performance were improved significantly compared to the control group. The study suggested that the additional plyometric training increased jumping, sprint and agility performance more than regular gymnastics training

Objectives of the study:

The objective of the study is to find out the effect of plyometric training for the Development of explosive strength among Kabaddi Players of Nalgonda District.

Hypothesis:

It was hypothesized that there would be significant difference in Effect of Plyometric Training for the Development of explosive strength among Kabaddi Players of Nalgonda District

Methodology:

This study was concluded to find out the Effect of Plyometric Training for the Development explosive strength. This was an experimental study. For concluded this study, N=30 District players aged about 18-22 years were selected as subjects'N-30 divided in to two groups experimental group I, and Controlled group II.

Assessment of Performance

The Experimental groups was engaged with an intervention based on plyometric, which was employed for 8 weeks with three session per week. At the same time, the controlled group engaged in General training, they were tested on Standing broad jump before the intervention and the performance Variable were retested again after the 8-week intervention

Tool

Standing jump

Purpose: to measure the explosive strength

Results and Discussion

The Experimental group and the Controlled group were given pre- and post-tests to see if there was an improvement in explosive strength after 8 weeks of Strength training, whilst the Controlled group received general training.

T-Test

Paired Samples Statistics

Standing Broad jump Kabaddi players		Mean	N	Std. Deviation	Std. Error Mean
Control Group	Pre-Test	2.3580	20	.02003	.00448
	Post Test	2.3540	20	.02469	.00552
Experimental Group	Pre-test	2.3590	20	.01875	.00419
	Post-test	2.4380	20	.02003	.00448

Data Measurements in centimeters Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Experimental group	Pre-test Post-test	-.08	.023	.005	-.09007	-.06793	-14.94	19	.000
Control group	Pre-test Post-test	.00400	.01107	.00248	-.00118	.00918	1.615	19	.123

The analysis of the data reveals that the subjects with the Plyometric Training have shown improvement in the performance of Standing Broad Jump test from pre to post-test Mean S. D Experimental group pre-test result shown (2.3590) and Controlled group (2.3580) after 8 weeks of Plyometric Training there is Improvement in the subject's Experimental Group (2.4380) plyometric Training, and Controlled group (2.3540). the measurement of standing jump in centimeters

Conclusions and Discussion

Based on our study results, it was concluded that there was significant alteration in explosive strength due to eight weeks of plyometric training compared with controlled group. Further there is significant improvement in explosive strength. I concluded the assessment process can be conducted every 3 months and 6 months to update the progress of player's performance and to ensure that it is up to date with the plyers training needs requirements. It is recommended that coaches assess their player's performance on a regular basis in order to ensure better compliance with the training programme.

Recommendations:

Based on the findings of the present study the following recommendations have been made.

1) Similar studies may be conduct in female section.
2) Similar studies may be conduct between individual and team sports
3) This study also helps the physical educators and coaches to improve their training regime to excel in kabaddi games.

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Effect of Resting Pulse Rate through Yogic Practices among University Women Kabaddi Players

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Abstract

These studies examined the changed of Resting Pulse rate through yogic practices among the university women kabaddi players.To achieve this purpose of the study thirty female kabaddi players were selected from Kakatiya University College of physical educaton, Hanmakonda, Telangana. And they were randomly assigned into one experimental group and another one is control group of fifteen each, such as yogic practices (group-I) and control group (group-II). The experimental group I underwent yogic practices training for four days per week for the period of six weeks training programme and group as control group was not taking any part of training during the course of the study. The dependent variable namely resting pulse rate was selected as a criterion variable and it was measured by radial artery. The data were collected from each subject before and after the six weeks training period. Statistical technique't' ratio was used to analysis the means of the pre –test and post-test data of experimental I group and control group. The result revealed that was a significant difference found on the criterion variables. The difference found is due to yogic practices training given to the experimental group on resting pulse rate when compared to the control group.

Keywords: Yogic practices, resting pulse rate, radial artery.

Introduction

Today, Physical exercise can improve both your mental and physical health. Since yogic practices directly relates to lowering blood pressure that is what we will focus on. The benefits of yogic practices include cholesterol and blood pressure, improve muscular endurance, reduced body fat and increased metabolism. Exercise pumps more blood through your veins. This increases the size of your arteries, prevents fat from clogging your arteries and helps prevents blood clots. The important idea behind cardio or yogic practices today, is to get up and do it if you want to reap the benefits of yogic practice.

Yoga is universally benefiting all people of all ages. The study of yoga is fascinating to those with a philosophical mind and s defined as the silencing of the mind's activities which lead to complete realization of the intrinsic nature of the Supreme Being. It is a practical holistic philosophy designed to bring about profound state as well is an integral subject, which takes into consideration man as a whole. The aim of yoga is to devise ways and means of helping the better emotional and intellectual concentration.(Malhotra,2011)

Methodology

The purpose of the study was to find out the changes of Resting pulse rate through yogic practices among the university women kabaddi players. To achieve this purpose of the study thirty female kabaddi players were selected from Kakatiya university college of physical educaton,Hanmakonda ,Telangana state and they were randomly assigned into one experimental group and another one is control group of fifteen each, such as yogic practices (group-I) and control group (group II). The experimental group I underwent yogic practices training for four days per weeks for the period of six weeks training programme and group II as control group was not taking any part of training during the course of the study. The dependent variable namely resting pulse rate was selected as a criterion variable and it was measure by radial artery. The data were collected from each subject before and after the six weeks training period. Statistical technique't' ratio was used to analysis the means of the pre-test and post-test data of experimental group and control group. The't' test was used to analysis the significant differences, if any, in between the groups respectively. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

Result

The significance of the different among the means of the experimental group was found out by pre- test. The data were analysed and dependent's' test was used with 0.05 level as confidence.

Table-I: Analysis of 't' ratio for the Pre-test and Post-Test of Experimental and Control group on Resting pulse rate scoring(Number of Beats/one minutes)

Variables	Group	Mean		SD		Sd Error		df	't'ratio
		Pre	Post	Pre	Post	Pre	Post		
Resting pulse rate	Control	75.20	74.93	1.42	1.58	0.37	0.41	14	1.29
	Experimental	75.47	72.53	1.77	1.96	0.46	0.46		19.14*

*Significance at 0.05 level of confidence.

The Table –I shows that the mean values of pre-test and post-test of the control group on Resting pulse rate were 75.20 and 74.93 respectively. The obtained 't' ratio was 1.29, Since the obtained 't' ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to the statistically in significant. The mean values of pre-test and post-test of the experimental group on Resting pulse rate were 75.47 and 72.47 respectively. The obtained' ratio was 19.14* since the obtained' ratio was greater than the required table value of 2. 14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group n resting pulse rate. It may be concluded from the result of the study that experimental group improved n resting pulse rate due to six weeks of the yogic practices.

Discussion

The result of the study indicates that the experimental group, namely yogic practices group had significantly improved the selected dependent variable, namely resting pulse rate, when compared the control group. It is also found that the improvement caused by yogic practices when compared to the control group.

Conclusion

- There a significant different between the experimental and control group on Resting pulse rate after the training period.
- There was a significant improvement in resting pulse rate. However the improvement was on favour of experimental group due to the six weeks of yogic practices.

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Relationship between Body Types and Physical Fitness Variables among Engineering College Students in West Telangana

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Abstract:

There is an essential view that the training concepts have changed from general to specific and from simple to complex. The earlier methods of training are not result oriented involving lot of time and effort. Therefore, it is essential to take a serious look into various determining factors that are responsible in the training and upcoming of future sports persons against set objectives and targets. These factors shall include physical, physiological, psychological and morphological variables.

Keywords: Body types, Physical fitness, Psychological and Morphological variables.

Introduction:

Modern physical education should contribute much for the welfare of the children, youth and adults. The processes of the physical education should be changed with the environmental changes in the surroundings. There are many factors which influence growth basically; heredity furnishes the frame of reference. Some characteristic combinations of genes from the parents and make up heredity and place limits upon the individual. Environmental factors which can significantly influence growth and development of a student are: Nutrition, climate, out-door living, fresh air, sun shine, exercise and rest. Both heredity and environment provide for great variations in growth. These variations complicate the job of the education but especially the physical educator. In fact, even within one family we observe many physiques and structural differences.

Body Types:

The combination of genes in one family is almost limitless. This great variation in heredity is one of the bases for the principle of individual differences. Thus, variation in heredity is followed by variations in body types and these body types follow a continuous distribution. In general, the youngsters follow a rather definite growth and development. There are several methods of classification for body types. Probably the best known method to the physical educator is the one proposed by Sheldon, patterned somewhat after a method presented by **Kretschmer** a German psychiatrist, where body builds were classified into three categories: Asthenic, Athletic and Pyknic.

W.H. Sheldon an American psychologist also divided people into three types depending upon the tissue and skin composition namely the Ectomorph, Mesomorph and Endomorph. Sheldon had proposed a 7 point scale to categorize all individuals under the above three body types. Physical fitness is composed of many complex factors; complex evaluation cannot be done by testing a single factor. Many variables, such as those included in measuring

cardio respiratory and cardio vascular endurance, muscular strength, muscular endurance, neuro-muscular skills, agility, co-ordination, balance, flexibility and nutrition reflects each in a special way, some aspect of total physical fitness.

Statement of the Problem:

The purpose of the study will determine the relationship between body types and physical fitness variables among engineering college students in west Telangana.

Hypotheses:

It was hypothesized that there is significant difference on Pull-ups (Arm and Shoulder strength) , Sit-ups (Abdominal Strength and Endurance), Shuttle run (Agility), Standing broad jump (Power and Lower explosive strength), 50 yard Dash (Speed), 600 yard Run (Endurance) on different body types among engineering college students in west Telangana.

Delimitations:

The present study is delimited to subjects chosen from engineering college students of different streams. The physical efficiency test is conducted for the age group ranges from 18 to 21 years. Study is delimited to male students only.

Limitations:

Environmental conditions among the various students participating in the study. Sociological and economical status of the students. Nutritional status (food consumption) among students. Family case history of the subjects.

Significance of the Study:

Aspiration to excel in higher levels of competitions is a natural urge among sports persons. However, in the present day's competitive world, one has to be more specific and systematic in pursuing ones goal. To analyze the difference in physical fitness parameters of different body types among engineering students of west telangana.

Methodology:

The subjects were 90 male students of JNTUH University Sultanpur engineering college. Aged between 18 to 21 years; male students only. A total of 90 students were randomly chosen for the study. (N= 30 Endomorph, N= 30 Mesomorph and N= 30 Ectomorph). The subjects had their regular schedule of training in physical education sports and games as per the programmers of the college. There was no control on the individual practice of sports and games in specific disciplines during their non- college hours. Classifying the individuals on the basis of physical characteristics associated with the body built prescribed by **Sheldon** while presenting his **7 point scale** for the three principle body types. Once the subjects were assigned to one of the three body type groups by observation method, they were again subjected to final assessment to confirm their suitability in a particular body posture by taking the above listed structural aspects into consideration. While selecting the subjects for each of the three bodies type groups the following physical characteristics were taken into consideration: Bodily features, structure of the face, structure of the skeletal frame & bone mass, type of the skin, body fat, musculature and structure of the extremities. AAHPER Youth fitness test is incorporated for assessing the physical fitness components among different body type engineering students of Telangana.

The Test: In order to relationship of body types and the physical fitness variables among the subjects selected for the purpose of the present study, the AAHPER Youth fitness test has been conducted.

AAHPER Youth Fitness Test:

AAHPER Youth fitness test has been originally developed in the United States of America with a specific purpose of finding an effective means to measure status and achievements in physical fitness objective. The test

items were selected by a team of experts committee. Originally, the test was conducted upon 90 male students of JNTUH University College of engineering Sultanpur at a certain ranging ages from 18 to 21 years. The test can be conducted in two following sessions. During the first session, Pull-ups, Standing broad jump and Shuttle run can be conducted. At second session, Sit-ups, 50 yard dash and 600-yard run walk can be preceded. The test if felt to be the most simple and effective means to test the achievements and the physical fitness among the youth. The test is more economical in terms of space and the time aspects.

General Procedure:

All the subjects should be given an appropriate amount of warm-up before testing begins. When a student is not medically fit, he shall be exempted from the testing. Uses of the AAHPER Youth fitness test. The test results may be used to indicate present status in fitness. When there is a retest, progress may be noted. From such status and achievement records, many other uses are obvious, such as motivation, grading, guidance. Comparisons may be made between a student's score and those of others in the group or those of others in the colleges throughout the country. Such comparisons may be undertaken using the norms developed using percentiles based on age.

Analysis of Data:

The statistical analysis of the data (number of Pull-ups performed in one continuous effort, number of Sit-ups performed in 60 seconds, the distance covered in feet and inches in Standing broad jump, the elapsed time during Shuttle run, 50-yard Dash and 600-yards Run-walk in seconds and tenths of seconds) on conducting the AAHPER Youth fitness test collected to 30 Endomorph type, 30 Mesomorph type and 30 Ectomorph type of engineering college students of JNTUH University Sultanpur within the age groups of 18 to 21 years.

Statistical Analysis: In the present study random group design will be used. The statistical analysis of variance (ANOVA) through SPSS. The level of significance is fixed at 0.05 levels to test the hypothesis.

Results and Discussion:

The Mean, covariance of scores and 'F' values of the investigated Endomorph, Mesomorph and Ectomorph body types in AAHPER Youth fitness test are given in the table No. 1 and 2 and their analysis and interpretation follows them.

Table – 1: Mean Scores of Endomorph, Mesomorph and Ectomorph Body Types in AAHPER Youth Fitness Test:

Body Type Group :	Mean Scores :
Endomorph	61.3
Mesomorph	154.75
Ectomorph	113.42

*Significant at 0.05 level.

The mean score of the Mesomorph body type is higher than the other two groups, while the mean score of Ectomorph body type is higher than that of Endomorph body type.

Table – 2: Analysis of Covariance of Scores of Endomorph, Mesomorph and Ectomorph in AAHPER Youth Fitness Test:

Test Statistics:	Endomorph:	Mesomorph:	Ectomorph:	'F'-value
$\sum x$	3680	9285	6805	73.85**
$\sum x2$	2,52,875	15,90,475	9,06,125	
$\frac{\sum \sum x2}{(xn - x\text{-}2)}$	2,25,706.6	14,36,853.75	7,71,800.42	
	27,168.3	1,53,621.25	1,34,324.58	

*Significant at 0.05 level of confidence with degrees of freedom between means 2 and degrees of freedom within sample means 177.

Conclusion:

1. Body types referred as somatic types of the adulthood students in the age group of 18 to 21 years have a strong relationship to the physical fitness.
2. 19 years old students are physically less fit compared to the 18 and 21 year old students.

Recommendations:

In the light of the conclusions drawn from this investigation it is recommended that body types shall be given due weight age in the selection of individuals for specific events and also for general training in physical activities and sports, as a strong relation has been found between the body types and physical fitness of the adulthood students in the age group of 18 through 21 years. Further, the following recommendations are also made for further investigations:

- The investigation may be repeated by taking larger samples.
- The investigation may be repeated by adopting other means of testing.
- Similar studies may be made with the subjects belonging to other ages of adulthood that is older students.
- Similar investigations may be undertaken combining the body types with other physical, physiological and psychological variables.

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Effects of Plyometric and Circuit Trainings on Selected Performance Variables Among School Kho-Kho Players.

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Abstract

The aim of this study was to find out the effects of plyometric training and circuit training on selected performance variables of school kho kho players. For this purpose randomly selected 75 school level kho kho players from Andhra Pradesh was selected and the performance variables selected were single chain run and double chain run. The study was formulated as a true random group design consisting of a pre-test and post test. The subjects (N=75) were randomly assigned to three equal groups of twenty five school boys. The groups were designed as experimental group I – plyometric training group, experimental group II Circuit training group and control group respectively. Pre test was conducted for all the 75 subjects on selected performance variables. The experimental groups (plyometric and circuit training) participated in respective training for a period of six weeks. The control group did not participated in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected to statistical analysis using ANCOVA. When significant F values obtained the results were further subjected to post hoc analysis using Scheffee's confidence interval test. RESULTS: adjusted post test means were determined and analysis of covariance was done and the obtained F value 66.95 on single chain run and 101.10 on double chain run were greater than the required value of 3.13 and hence it was accepted that the plyometric training and circuit training, significantly improved the performance variables of kho kho playersd. The post hoc analysis on single chain run and double chain run on the obtained ordered adjusted means proved that there was significant differences existed between control group and plyometric training group and control group and circuit training group. This proved that due to six weeks plyometric training single chain run of the School Kho Kho players improved significantly.While comparing between the two experimental groups, it was found that plyometric training group was significantly better than circuit training group in improving single chain run and double chain run of school kho kho players. CONCLUSIN: Based on the results of this study, it was found plyometric training was better than circuit training in improving performance variables of school kho kho players.

Key Words: Plyometric training, Circuit Training, Single Chain run, Double Chain Run

Introduction

Kho Kho is one of the most popular traditional sports in the country. Some of the interesting facts about the game. The position of the players sitting is random; one will never find the same set of players sitting in the same order as when the game starts. The game requires immense stamina and speed. It is a tag game of our country. Its

roots are as old as the epic Mahabharata, with plans and strategies likely derived from the epic itself. As the tale narrates, on the 13th day of the war, the Kaurava Guru Dronacharya planned the sole tactics 'Chakravyuh', a special military defensive plan broke by Abhimanyu. Unfortunately, he died as he had to fight alone against 7 warriors and he was badly injured. His style of fighting reflected the concept of ring play – a defensive tactic in the game. The game during age-old times involved 'raths' and chariots and was named Rathera.

The Asian Kho Kho Federation first came into existence in 1987 at the time of the third SAF Games in India. The Kho Kho game gained international credit with the first Asian Championship which was held in Kolkata in 1996. The second championship was held in 2000 which added further shine to the game.The modern-day game was invented in the Indian state of Maharashtra. The Deccan Gymkhana of Pune tried to lend a sense of reliability and recognition to the game by introducing certain rules and regulations to make it more formal. As a result, countries such as Pakistan, Bangladesh, Nepal, Sri Lanka, and the Maldives also participated in the game. Sitting in squares, diving, chain formation, making circles, pole dive, giving Chou, turning round the pole, running, dodging, sudden change of direction are basic skills of the game. (https://www.kreedon.com/kho-kho-game/)

Athletic performance has dramatically progressed over the past few years. Performance levels unimaginable before are now common place, and the number of athletes capable of outstanding results is increasing. One factor is that athletics is a challenging field, and intense motivation has encouraged long, hard hours of work. Also, coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. A broader base of knowledge about athletes now exists, which is reflected in training methodology (Bompa, 1999) .

Plyometric training is one of the best methods of developing explosive power in sports. Basically plyometrics provide a method of training for the optimum relationship between strength and speed which will ultimately manifest in self as explosive power. Today plyometric movement are performed in almost all sports. Basic strength level must be attained before starting plyometric training programme. The choice of exercise must correspond to age, sex and biological development of sports person. These should be gradually increase stress during a complete training cycle. Body weight should be the determining factor in assigning the value of jumps in ork out. Generally the number of sessions to devote the plyometric training is 2 or 3 times per week (Will and Freeman (1980) ,

Circuit training employs a series of exercises stations that consists of weight training, flexibility, calisthenics, and brief aerobic exercises. In circuit training the subjects can move rapidly from one station to the next and perform whatever exercise is to be done at that station within a specified time period. A circuit would consist of 8 to 12 stations and the entire would be repeated within three of four times, concentrating on the legs, abdomen, back, arms, shoulders and trunk. These exercises should be organized so that the subject moves from one muscle group to another. This method allows working hard on a muscle group and then resting it, while the other groups have their own work out (Tancred, 1987) .

Raju. S./S (2019) determined the effect of plyometric training on agility. Sixty Kho-Kho (N=60 were randomly selected as subjects and their age ranged between 16 and 18 years. The selected subjects were randomly assigned into two equal groups with thirty subjects each (N=30). Group I experimental, Group II Control group the experimental groups underwent their respective experimental treatment for twelve weeks 3 days per week and a session on each day. Control group was not exposed to any specific training apart from their curriculum. Agility was taken as variable for this investigation. The pre and posttest were conducted one day before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analysis the collected data. Scheffe's test was used as a post hoc test to determine which of the paired mean differed significantly. The results revealed that there was a significant difference between experimental groups on speed ($P \leq 0.05$) Further it related that the

plyometric training and plyometric training produced significant improvement($P \leq 0.05$) on agility as compared to control group.

Shahram Alam et.al. (2012) fond out the effect of plyometric circuit exercises on the physical preparation indices of elite handball player in the city of Behbahan. The participants' records were registered in 4 pre- and post-tests and compared. The results of the study revealed that 6 weeks plyometric circuit exercises have meaningful effect on the participants' records in four tests (vertical jump- shuttle briskness- medicine ball throw- 30 meters speed run) and have caused improvements in the results of these four tests. Therefore, it seems that plyometric circuit exercises have been effective on the physical preparation indices of handball players and can improve the athletes' performance of this field.

Clutch et al. (2001) examined the effect of depth jumps and weight training on leg strength and vertical jump in two studies. It was found that weight plus jumping produced no added beneficial performance improvement than the jumping alone group. The weight training programme did not provide added benefit.

Fletcher and Hertwell (2002) examined the effect of an 8 week combined weights and plyometrics training program on golf drive performance. Eleven golfers were randomly assigned to control and experimental group. The control group continued their current training programmes. The experimental group performed combined weight and plyometric training twice in a week. The treatment group showed significant changes in head speed and driving distance.

Hortobagyi, et al., (1991) examined the effects of simultaneous training for strength and endurance on upper and lower body strength and running performance. High Resistance (HR), Low Resistance (LR) and Control groups of college men were used as subjects without the difference in body compositions in fitness. It was concluded that gains in strength were compromised by simultaneous endurance training. High resistance or low resistance training did not affect the gains in strength and endurance. It would appear to be unproductive to mix strength and endurance training because an athlete would gain maximum benefits in the mixed training.

Padder, M.W.J and Ramesh, G. (2021) determined the impact of ladder training and plyometric training on speed and agility among school level Kho-Kho players in Kashmir. Forty-five male Kho-Kho players from higher secondary school Vessu Anantnag, higher secondary school Wanpoh Anantnag and higher secondary school Kelam kulgam in Kashmir, who had participated in interschool competition, were selected as subjects at randomly and their age ranged from 14 to 17 years. The subjects (N=45) were randomly assigned in to three equal groups of fifteen Kho-Kho players each as experimental group-I, experimental group-II and control group. The experimental groups and control group underwent normal routine KhoKho practices and in addition the experimental group-I underwent ladder training and experimental group-II underwent plyometric training for one hour in the morning session. The control group was not given any special training apart from their normal daily exercises. The period of training was twelve weeks in a schedule of weekly three days for alternative days. The data was collected on selected dependent variable before and after the training period. The collected data were statistically analysed by using analysis of covariance (ANCOVA) was used to find the significant difference among the groups. The scheffe's post hoc test was used to find the paired mean difference if any. The level of confidence was fixed at 0.05. Based on the study it was conclude that ladder training and plyometric training were significantly improved the speed and agility among school level Kho-Kho players

Most scientific knowledge, whether from experience or research, aims to understand and improve the effects of exercise on the body. Exercise is now the focus of sport science. Research from several sciences enriches the theory and methodology of training, which has become a branch of science. Thus, this study was intended to fi9nd out the effect of plyometric training and circuit training on selected performance variables of school level kho kho players.

Methodology

Subjects

To facilitate the study, 75 school kho kho players from different schools from Andhra Pradesh were randomly selected as subjects and their age ranged between 16 to 18 years. They were further divided into three groups namely Plyometric training group, circuit training group, and control group (CG), on random basis.

Selection of Variables

Taking into consideration the feasibility and availability of instruments kho kho game performance variables, single chain run and double chain run were selected.

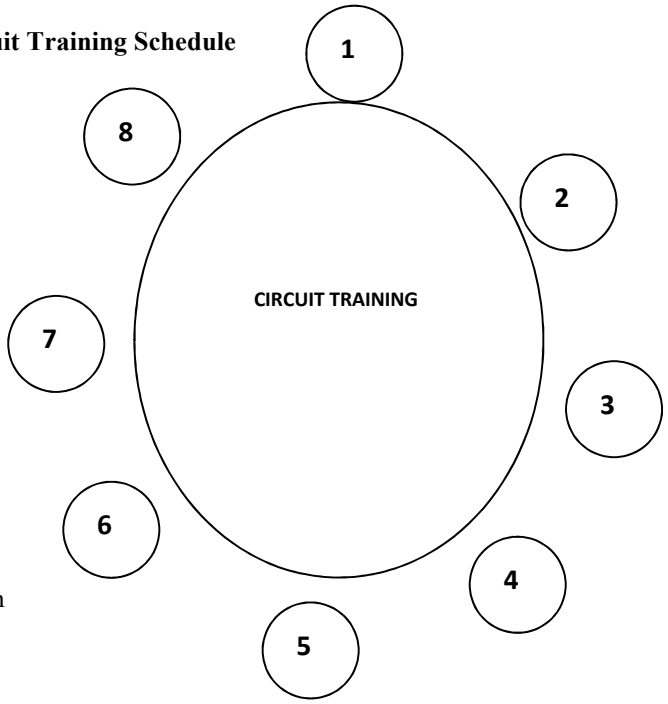
Training Programme

Tab 1: Training Schedule for Plyometric Training

Name of Exercise	Repetitions			Rest
	I & II	III & IV	V & VI	
Squat Jumps	10	12	14	2 minute
Jump to Box	10	12	14	2 minute
Box Jumping Both Legs	10	12	14	2 minute
Lateral Jump to Box	10	12	14	2 minute
Medicine Ball Chest Push with Partner	10	12	14	2 minute

Training Schedule for Circuit Training

Diagram Showing Circuit Training Schedule



1. High knee action
2. Pouncing

3. Hopping
4. Skipping
5. Push ups
6. Sit ups
7. Squat thrust
8. Full Squat Jump (Forward and backward)

Training Schedule for Circuit Training

Day	First three weeks		Fourth to Sixth Weeks	
	Each Station	Set	Each Station	Set
Monday	45 Sec	2	45 Sec	3
Tuesday	50 Sec	3	50 Sec	4
Wednesday	55 Sec	4	55 Sec	5
Thursday	50 Sec	5	50 Sec	5
Friday	55 Sec	4	55 Sec	4
Saturday	60 Sec	3	60 Sec	3

Measuring Single Chain Run and Doiuble Chain Run

In a kho kho game situation, the chaser was asked to stand in the first post line and the subject for whom the single chain test was administered was asked to sat in the first box. On command 'go', the chaser run to the subject and gave 'Kho'. The timer was asked to start the stop watch at the moment of giving 'kho' to the subject. Immediately the subject began to run in single chain form in zig zag manner crosses the second line post and came back in the same way and cross the first line post. And the timer was asked to stop the stop watch which formed the single chain run time.

Similarly for double chain run, the subject began to run in double chain form in zig zag zag manner which forms the double chain time. Score was the time elapsed from the moment the subject was given 'kho' and moment of time crossed the line post.

Experimental Design and Statistical Analysis

The study was formulated as a true random group design consisting of a pre-test and post test. The subjects (N=75) were randomly assigned to three equal groups of twenty five school boys. The groups were designed as experimental group I – plyometric training group, experimental group II Circuit training group and control group respectively. Pre test was conducted for all the 75 subjects on selected performance variables. The experimental groups (plyometric and circuit training) participated in respective training for a period of six weeks. The control group did not participated in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected to statistical analysis using ANCOVA. When significant F values obtained the results were further subjected to post hoc analysis using Scheffee's confidence interval test.

Results:

Tab III: Computation of Analysis of Covariance on Single Chain Run In Seconds

	Plyometric	Circuit training	Control	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre Test Mean	17.34	16.99	17.16	Between	1.8	2	0.90	0.78
Standard Deviation	0.97	1.18	0.94	Within	83.7	72	1.16	
Post Test Mean	15.04	14.04	17.34	Between	127.1	2	63.54	59.60*
Standard Deviation	0.87	1.25	0.97	Within	76.8	72	1.07	
Adjusted Post Test Mean	14.13	14.99	17.13	Between	118.0	2	59.02	66.95*
				Within	62.6	71	0.88	
Mean Diff	-2.30	-2.95	0.18					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.13, 2 and 71(df) =3.13 . *Significant

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table iv

Tab IV: Post Hoc Analysis on Scores on Single Chain Run

MEANS			Mean Difference	Required. C I
Plyometric Training	Circuit training	Control		
14.13	14.99		0.86*	0.67
14.13		17.13	3.00*	0.67
	14.99	17.13	2.14*	0.67

* Significant

Tab V: Computation of Analysis of Covariance on Double Chain Run In Seconds

	Plyometric	Circuit training	Control	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre Test Mean	17.14	16.72	17.28	Between	6.2	2	3.10	2.26
Standard Deviation	1.17	1.08	1.16	Within	98.6	72	1.37	
Post Test Mean	15.04	13.13	17.14	Between	215.6	2	107.79	83.74*
Standard Deviation	0.96	1.26	1.17	Within	92.7	72	1.29	
Adjusted Post Test Mean	13.35	15.02	17.09	Between	164.7	2	82.37	101.10*
				Within	57.8	71	0.81	
Mean Diff	-2.10	-3.59	-0.15					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.13, 2 and 71(df) =3.13. *Significant

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table XV

Tab VI: Post Hoc Analysis Scores on Double Chain Run

MEANS			Mean Difference	Required C I
Plyometric Training	Circuit training	Control		
13.35	15.02		1.66*	0.64
13.35		17.09	3.73*	0.64
	15.02	17.09	2.07*	0.64

* Significant

Discussions on the Findings

The ANOVA results shown in Tables III and V, there was no significant different at pre test scores of single chain run timings and double chain run timings which proved that the random assignment of the subjects were successful and their scores before the training were equal and there was no significant differences. However the post experimental scores F values were significant, which proved the experimental treatments significantly improved performance variables of kho kho players. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 66.95 on single chain run and 101.10 on double chain run were greater than the required value of 3.13 and hence it was accepted that the plyometric training and circuit training, significantly improved the performance variables of kho kho playersd.

The post hoc analysis results presented in Tables IV and VI on single chain run and double chain run on the obtained ordered adjusted means proved that there was significant differences existed between control group and plyometric training group and control group and circuit training group. This proved that due to six weeks plyometric training single chain run of the School Kho Kho players improved significantly.

While comparing between the two experimental groups, it was found that plyometric training group was significantly better than circuit training group in improving single chain run and double chain run of school kho kho players.

Conclusions

Based on the results of this study, it was found plyometric training was better than circuit training in improving performance variables of school kho kho players.

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Effect of Recreation Activity Programme on Speed and Explosive Power among Children

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Abstract

Primary intent of this study to find the impact of 6 weeks of recreational activity programme on physical parameter such as speed and explosive power among children in the age group of 8 to 10 years old. 40 children selected as subject to achieve the purpose from Bangalore. Subject split into two equal half n=20 as group A and Group B. Group A underwent 6 weeks of recreational activity training programme. Group B didn't involve any activity. Speed and explosive power selected as criterion variable. Dependent t test and Analysis of Covariance used to analysis the data at 0.05 level of significant. This findings concluded that there is a improvement on selected dependent variables due to 6 weeks of intervention programme.

Keywords: Recreational Activities, Speed, Explosive power, Children.

Introduction

Participation of children with physical disabilities in everyday activities is a goal shared by parents, service providers, and organizations involved in children's rehabilitation (Law, 2006). World Health Organization (WHO) defines participation as 'involvement in a life situation' (WHO 2001). The range of activities in which children and youths participate outside mandated school includes artistic, creative, cultural, active physical, sports, play, social, skill-based, and work activities (Sloper et al. 1990, Kalscheur 1992, King et al. 2004). For children, participation in day-to-day formal and informal activities is vital. Recognition of the importance of involvement in activity centers on its positive influence on the development of skills and competences, social relationships, and long-term mental and physical health (Werner 1989, Caldwell and Gilbert 1990, Lyons 1993, Larson and Verma 1999, Simeonsson et al. 2001).Recreational activities that people participate in their spare time seem to be very beneficial for their health (both mental and physical). Recreation, which means relaxing and pleasant activities that people do voluntarily in their free time, is a concept that provides the physical and psychological renewal of individuals (Aksoy, and Arslan, 2019).

Methodology

To obtain the purpose of this present study N = 40 children(8 to 10 years) were randomly (Simple random)selected as subjects for this experimental studyfrom Bangalore.Further selected samples were split into two separate groups.Such as Group A as Recreational Activity Group (RAG)n=20 and Group B as Control Group (CG) n=20. To measure the intervention, effect the following physical variables were selected as criterion variables such as Speedand Explosive power. 50 metre run and standing broad jump used to test the criterion variables for both the groups before and after the intervention period.

Intervention

RAG underwent 6 weeks of Recreational Activity training programme.6 weeks of RAG consist of 3 alternative days (Monday, Wednesday, and Friday)/ week. Intervention restricted to the morning session only (60 to 90 minutes).

Statistical Analysis

Dependent t test and Analysis of Covariance (ANCOVA)used to analysis the collected data from the RAG and CG. All the statistical results were at P 0.05 level.

Results

Table 1: Dependent t test on Speed

Group	Test	Mean	N	Std. Deviation	t	df	Sig. (2-tailed)
RAG	Pre test	8.690	20	.0718	11.414	19	.000
	Post test	8.450	20	.0513			
CG	Pre test	8.6800	20	.07678	1.101	19	.285
	Post test	8.7100	20	.07182			

Table 1 shows that the obtained Speed dependent t test ratio on RAG 11.414 >2.093 (0.00<0.05) table value with df 19, and CG 1.101< 2.093 (0.28>0.05) with df 19 at 0.05 level of Significant.

Table 2: Dependent t test on Explosive Power

Group	Test	Mean	N	Std. Deviation	t	df	Sig. (2-tailed)
RAG	Pre test	1.0560	20	.05933	5.398	19	.000
	Post test	1.1640	20	.04321			
CG	Pre test	1.0580	20	.05634	0.264	19	.795
	Post test	1.0630	20	.06148			

Table 2 shows that the obtained Explosive Power dependent t test ratio on RAG 5.398> 2.093 (0.00<0.05) table value with df 19, and CG 0.264 < 2.093 (0.79>0.05) with df 19 at 0.05 level of Significant.

Table 3: ANCOVA on Speed

Group	Adjusted post test Mean	Sum of Squares	df	Mean Square	F	Sig.
RAG	8.451	.662	1	.662	177.459	.000
CG	8.709	.138	37	.004		

Table 3 shows that the obtained Speed ANCOVA F ratio is 177.46 >4.11 (0.00<0.05) table value with df1 and 37 at 0.05 level of Significant.

Table 4: ANCOVA on Explosive Power

Group	Adjusted post test Mean	Sum of Squares	df	Mean Square	F	Sig.
RAG	1.164	.101	1	.101	36.846	.000
CG	1.063	.102	37	.003		

Table 4 shows that the obtained SpeedANCOVA F ratio is 36.85>4.11 (0.00<0.05) table value with df1 and 37 at 0.05 level of Significant.

Discussion

From the table 1 shows that the RAG 0.00<0.05 it indicates there is a significant improvement between pre and post test mean on speed due to the recreational activity training programme. Also,CG 0.285<0.05 it indicates there is no significant improvement between pre and post test mean on speed.

From the table 2 shows that the RAG 0.00<0.05 it indicates there is a significant improvement between pre and post test mean on Explosive powerdue to the recreational activity training programme. Also, CG 0.795<0.05 it indicates there is no significant improvement between pre and post test mean on Explosive power.

From the table 3 shows that the sig 0.00<0.05 on speed and 0.00<0.05 on explosive power it indicates that there is significant improvement difference between RAG and CG.

Previous studies support the findings of this present study Rolland, et al. (2004); Sala, et al. (2019); and Galan, et al. (2021).

Conclusion

It was concluded that 6 weeks of Recreation activity training programme shows improvement on Speed and explosive power between pre and post test. However, difference exists between the RAG and CG on speed and explosive power at 0.05 level of significant.

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Students Shape Up: A Scientific Approach On Age-Appropriate Physical Activity Program Of Physical Education On Selected Motor Abilities Among School Students.

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Abstract

Objective: To examine the scientific approach to the age-appropriate physical activity program of physical education on selected motor abilities among school students. **Method:** A sample of (N=180) subjects was selected by stratified random sampling method based on age categories. The Age ranges from 10 to 16 years. The selected subjects were divided into six groups i.e. three experimental groups 1, 2, 3 and three control groups 1, 2, 3 based on the three age categories (category I – 10 to 12 yrs., category II- 12 to 14 yrs. and category III- 14 to 16 yrs. of age) from school students of Medchal Dist. 12 weeks of Age-Appropriate Physical Activity Program (AAPAP) of P.E for 35 minutes duration of training was given. Pre-test and post-test were conducted on selected variables. I.e. Agility by administering a 10 M shuttle run test & Balance by stork balance test. The statistical technique of t-ratio was used in this study. **Results:** The results of the study indicate that improvement in Agility and Balance was significantly improved in experimental groups as a result of participating in an age-appropriate physical activity program of physical education.

Introduction:

In the modern school system, the Physical education curriculum plays an important role. A definite Physical Education curriculum must be formulated at the outset of the session and then carried out successfully in a coordinated fashion. A successful physical education curriculum will develop motor and physical skills effectively. "Physical education is an integral part of every student's education because it promotes overall development and helps students become fit citizens through physical activities". (Charles A bucher). Various commissions (kunzuru, Kothari, NEP 2020 etc.) on physical education program said that the physical education curriculum should be restructured and updated to reflect the children's ages and current state for the all-round development of the children.

It is no more a secret now, thus the researcher has planned an Age-appropriate Physical activity program of PE among the students. "**Age-appropriate**: it is suitable or right for people of a particular age or age group". – Cambridge dictionary. If children exposed to age-appropriate activities and experiences early on, they will gain the skills necessary for their present and future development stages. The physical activities you choose to use in your curriculum should be appropriate for the age and skill level of your students. Having these appropriate activities for your class promotes maximum participation. Activities in your curriculum should be aimed at improving the students of all age categories. Activities for younger students should promote basic motor skill development, which some students may still lack. This includes activities like jumping rope, hopscotch, tag games, and dodgeball, among others. All of these activities help students improve their physical fitness while also developing fundamental physical skills such as jumping, running, and throwing. In contrast, older students should participate in more

complex games that require social, cooperative, and cognitive skills in addition to basic motor skills. (*Physical Education Activities & Curriculum Development - Video & Lesson Transcript | Study.Com*, n.d.)

Significance of the Study

Due to the lack of studies in the age appropriate physical activity programs on school physical education curriculum the current study of students shape up: A scientific approach on age-appropriate physical activity program of physical education on selected motor abilities among school students of Medchal district was conducted.

Thus, this study may effectively develop the student progress in the respective age categories.

Methodology

Selection of the subjects

A sample of (N=180) subjects were selected by random sampling method based on their age categories. The subjects Age ranges from 10 to 16 years. The selected subjects were divided into six groups i.e. three experimental groups (AAPAP) 1, 2, 3 and three control groups (RPE) 1, 2, 3 based on the three age categories (category I – 10 to 12 yrs., category II- 12 to 14 yrs. and category III- 14 to 16 yrs. of age) from schools of Medchal Dist. Twelve weeks of Age-Appropriate Physical Activity Program (AAPAP) of P.E for 35 minutes for experimental groups and control group not participated in intervention program they take part in routine physical education. Pre-test and post-test were conducted on selected variable.

Selection of Variables

The investigator reviewed the available scientific literature on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present study variable. Selected Motor ability variables are – I.e. Agility by administering 10 M shuttle run test & Balance by stork balance test.

Experimental Design

1. The 180 subjects from the 3 age categories (category I – 10 to 12 years, category II- 12 to 14 years and category III- 14 to 16 years of age) of 60 each in each age category from 3 schools(ZPHS Kolthur, ZPHS Keshawaram, ZPHS Lalgadimalakpet) of Medchal district of the Telangana state.
2. The selected subjects will be randomly divided into 6 equal groups of 30 subjects each based on their age categories.
3. Three experimental groups of age appropriate physical activity program of physical education (AAPAP of PE) i.e. Experimental Group I(AAPAP-1) – (10 to 12 years), Experimental Group II(AAPAP-2)- (12 to 14 years), Experimental Group III(AAPAP-3)- (14 to 16 years) and three control groups of Routine physical education program (RPE-1)C.G-1,(R.P.E-2) C.G-2, and (RPE-3) C.G.-3 from same age category as Experimental groups.
4. Three control groups with routine physical education program. Control groups didn't participate in any training program of AAPAP.
5. Twelve weeks of training will be given to experimental groups for three days per week with 35 minutes duration per day and which excludes warming up and waring down.

Collection of Data

In order to collect the data test were administrated before and after Twelve weeks training, the score were recorded in the initial and final readings for the group.

Statistical Technique

The data collected from the group on the selected variables were statistically examined to find out whether there was any significant difference between the pre-test and post-test for experimental and control groups was employed by using Statistical Technique of T-test was used to compare the means scores and T-ratio for significant differences separately for each age categories i.e. between AAPAP-1, 2, 3 (E.G) and RPE-1, 2, 3(C.G), for three age categories for the differences in selected motor ability performance variables. The level of significance was fixed at 0.05 level of confidence.

RESULTS

The results of the study indicates that improvement in motor abilities for agility and balance, was significantly improved in all the 3 Experimental Groups, as a result of the participating in AAPAP of P.E. It was hypothesized that the training of Age-appropriate physical activity program of physical education would cause more improvement in motor abilities for agility and balance on all the 3 Experimental Groups. Hence the hypothesized was accepted.

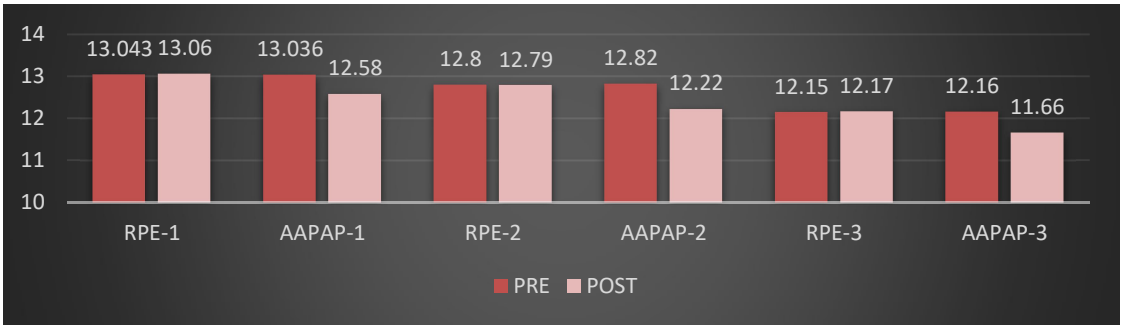
TABLE –I

Paired Sample 'T' Test Of Experimental Groups And Control Groups On Agility (Units In Sec.)

Sl. No	Parameters	N=180	Groups	Pre-Test		Post-Test		T ratio	Sig.
				Mean	SD	Mean	SD		
1.	Agility	30	**RPE-1 (C.G)**	13.043	0.18	13.06	0.20	1.09	0.281
		30	**AAPAP-1 (E.G)**	13.036	0.17	12.58	0.27	**10.31**	**0.000**
		30	**RPE-2 (C.G)**	12.80	0.37	12.79	0.33	0.62	0.536
		30	**AAPAP-2 (E.G)**	12.82	0.32	12.22	0.25	**10.39**	**0.000**
		30	**RPE-3 (C.G)**	12.15	0.22	12.17	0.20	1.36	0.182
		30	**AAPAP-3 (E.G)**	12.16	0.25	11.66	0.43	**6.69**	**0.000**

* Significant at 0.05 level of confidence, required table value is 2.05.

Figure – 1: Bar Diagram Showing the Mean Difference Between pre-test and post-test of the experimental and control groups on Agility For Age categories 1,2,&3



Discussion

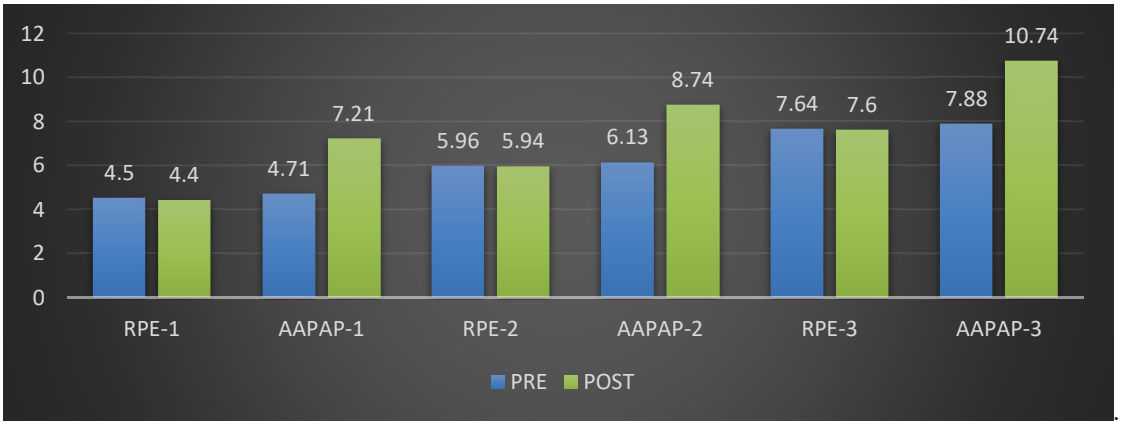
By observing the obtained results in **Table – 1** it shows that the mean scores of agility for experimental groups E.G-1,E.G-2,E.G-3 pre-test was 13.036, 12.82, 12.16 and post-test is 12.58,12.22,11.66. Whereas control groups C.G-1, C.G.-2, C.G-3 pre-test was 13.04, 12.80, 12.15 and post-test is 13.06, 12.79, 12.17. The obtained t-ratio's for EG-1, 2, 3 was **10.31**, **10.39**, **6.69** which was greater than the table value i.e. 2.05 for 29 degrees of freedom.so it is significant at 0.05 level of confidence.

Table –2 : Paired Sample 'T' Test Of Experimental Groups And Control Groups On Balance (Units in sec.)

Sl. No	Parameters	N=180	Groups	Pre-Test		Post-Test		T ratio	Sig.
				Mean	SD	Mean	SD		
1.	Balance	30	**RPE-1 (C.G)**	4.50	1.02	4.40	1.01	1.989	0.056
		30	**AAPAP-1(E.G)**	4.71	1.25	7.21	1.60	**18.446**	**0.000**
		30	**RPE-2 (C.G)**	5.96	1.47	5.94	1.39	0.212	0.834
		30	**AAPAP-2 (E.G)**	6.13	1.31	8.74	1.88	**16.959**	**0.000**
		30	**RPE-3 (C.G)**	7.64	1.97	7.60	2.04	0.687	0.498
		30	**AAPAP-3 (E.G)**	7.88	1.51	10.74	1.89	**20.134**	**0.000**

*** Significant at 0.5 level of confidence, required table value is 2.05.**

Figure – 2 : Bar Diagram Showing the Mean Difference Between pre-test and post-test of the experimental and control groups on Balance For Age categories 1,2,&3



Discussion

By observing the obtained results in **Table – 2** it shows that the mean scores of balance for experimental groups E.G-1,E.G-2,E.G-3 pre-test was 4.71, 6.13, 7.88 and post-test is 7.21, 8.74 10.74. Whereas control groups C.G-1, C.G.-2, C.G-3 pre-test was 4.50, 5.96, and 7.64 and post-test is 4.40, 5.94, 7.60. The obtained t-ratio's for EG-1, 2, 3 was **18.446**, **16.959**, **20.134** which was greater than the table value i.e. 2.05 for 29 degrees of freedom.so it is significant at 0.05 level of confidence.

Conclusion

Within the limitation of the study and on the basis of the obtained results from this study, the following conclusions had been drawn:

It was concluded that the participating in 12 weeks of AAPAP of P.E training program had significantly improved on motor abilities i.e. agility and balance on all the 3 Experimental groups when compared to 3 control groups.

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Effect of Interval Training on Development of Resting Pulse Rate and Breathe Holding Time of Tribal Students of Telangana State.

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Abstract:

The purpose of the study was to find out the Effect of Interval training on development of Resting pulse rate and Breathe holding time of Tribal Students of Telangana State. To attain this 30 Male Tribal students were randomly selected from Tribal welfare Degree College Manuguru @ Bhadrachalam, Telangana State. The age of the subjects were from 18 to 22 years. All the subjects were hostlers of TTW Residential Degree College, they had a similar academic work and regular activities in accordance with the requirements of their curriculum. The Interval training schedule were given to the Tribal students of Telangana state for 12 weeks training schedule on alternate days on Monday, Wednesday and Friday, one hour per a day. This study was restricted to Resting pulse rate and Breathe holding time. The pre test was taken, and then the post test was administered after the systematic training of interval training of 12 weeks. The collected data were statistically analyzed by using independent 't' test. Based on the analysis of statistical results, it was proved that there was a significant difference in Resting Pulse rate and Breathe holding time.

Keywords: Interval Training, Resting Pulse rate and Breathe holding time.

Introduction:

Interval training is a type of physical training that involves bursts of high intensity work. This high intensity work is alternated with periods of incomplete rest or low activity, the eponymous intervals. The term can refer to any cardiovascular workout (e.g. cycling, running, rowing, etc.) that involves brief bouts at near maximum exertion interspersed with periods of lower-intensity activity.

Physiology is the scientific study of functions and mechanisms in a living system. As a sub-discipline of biology, physiology focuses on how organisms, organ systems, individual organs, cells, and bio molecules carry out the chemical and physical functions in a living system. Physiology is the science of functioning of all the organs and systems of an organism. For the physiological system of the body to be fit, they must function well enough to support to specific activity that the individual structures and functions are changed as a result of exercise. It applies the concept of exercise physiology to training the athlete and enhancing the athlete's sports performance. Human physiological parameters, such as Pulse rate, breathe holding time, blood pressure, body temperature, blood , and various electro physiological signals, represent the operation of a human body and are thus useful as reference values in human health monitoring.

High level of performance in sports and games might be dependant upon the physiological make up and it was recognized that physiological proficiency was needed for the high level performance. How much athletic ability particular person is attributable to genetics and how much is determined by training and other adaptations made by the athlete. There are a number of critical training factors constructed upon the inherent individual physical traits that will influence success.

Purpose of the study:

The purpose of the study was to assess the "Effect of Interval training on development of Resting pulse rate and Breathe holding time of Tribal students of Telangana State".

Methodology:

The study was to assess the Effect of Interval training on development of Resting pulse rate and Breathe holding time of Tribal students of Telangana State. For this study, 30 Students, those who are studying Bachelor's degree in the Telangana Tribal Welfare Residential Degree College, Manuguru @ Bhadrachalam, Telangana State were randomly selected as subjects. The age of the selected subjects were ranged from 18 to 22 years. All the subjects gave a written consent and no compulsion was made to take part in the training programme. A qualified physician examined the subjects and declared that they were medically and physically fit to participate in the training programme. Since, all the subjects were hostlers of TTW Residential Degree College, they had a similar academic work and regular activities in accordance with the requirements of their curriculum. High-intensity interval training (HIIT) method was given to the subjects. This type of exercise offers many health benefits. It's a great way to improve your pulse rate, breathe holding time as well as build and maintain muscle and lose weight. The Interval training schedule was given to the Tribal students of Telangana state for 12 weeks training schedule on alternate days on Monday, Wednesday and Friday one hour per a day. The pre test was taken, and then the post test was administered after the systematic training of interval training of 12 weeks.

Selection of Variables and it's Criterion measures:

S.No.	Variable	Test Item	Unit of Measurement
1	Resting Pulse rate	Radial pulse	No. Of counts
2	Breath Holding Time	Holding breath time	In seconds

Results & Discussions:

Table 1 showing the Mean values, SD, 't' value and p-value between pre test and post test on Tribal students of Telangana State in relation to their Resting pulse rate.

S.No.	Test condition	N	Mean	S.D.	't' ratio	P value
1	Pre test	30	94.56	2.12	2.461	0.00
2	Post test	30	73.88	1.36		

Table 1 showing that the Tribal Students of Telangana State pre test mean value is 94.56 and Standard deviation is 2.12. And post test mean value is 73.88 and Standard deviation is 1.36. And the 't' ratio and p value is 2.461 and 0.00 respectively in relation to their Resting pulse rate. And the results revealed that there is a significant difference in resting pulse rate of Tribal students of Telangana State.

Table 2 showing the Mean values, SD, 't' value and p-value between pre test and post test on Tribal students of Telangana State in relation to their Breathe holding time.

S.No.	Test	N	Mean	S.D.	't' ratio	P value
1	Pre test	30	32.67	1.62	2.682	0.01
2	Post test	30	57.98	3.79		

Table 2 showing that the Tribal Students of Telangana State pre test mean value is 32.67 and Standard deviation is 1.62. And post test mean value is 57.98 and Standard deviation is 3.79. And the 't' ratio and p value is 2.682 and 0.01 respectively in relation to their Breathe holding time. And the results revealed that there is a significant difference in Breathe holding time of Tribal students of Telangana State.

Conclusion:

Interval Training is a good training method to develop physiological variables such as Resting pulse rate and Breathe holding time. It is also develops physical fitness variables such as speed, strength, agility, power as well as physiological variables such as vital capacity, respiratory endurance etc. It was started with low intensity workouts and ended with high intensity workouts and gradually increased number of repetitions. And this study finally concluded that Interval training have yielded significant difference on the resting pulse rate and breathe holding time of tribal students of Telangana state.

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Plyometrics for enhancement of performance in Soccer Players: A Review

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Abstract:

Football is a game of constant action that requires continuous adaptation to changing situations by the team as a whole, as well as by individual players. A successful performance is dependent on the basic abilities, in particular, repeated explosive burst, strength, power, kicking, tackling and their derivatives such as jumping, turning, sprinting and changing pace, all making important contributions to the performance of the soccer player. The concept of "total football" applies skill development, tactical development, development of all important motor components and physiological parameters which are closely associated and contributed to performance in football. Using plyometrics for Soccer players is one of the most effective ways to increase explosive speed and power. Soccer plyometrics are jump-training exercises that focus on exerting maximum muscular force in short intervals, the nature of training increases the efficiency of fast twitch muscle fibres resulting in gaining in both power and strength. Some basic and advanced plyometric exercises for Soccer players have been reviewed.

Keywords: Soccer, Plyometric, Power, Explosive burst, Speed and Strength.

Introduction:

Football is a game of constant action that requires continuous adaptation to changing situations by the team as a whole, as well as by individual players. Although, it is a team game, there is an ample room for players to display their brilliance through individual performance with the ball as well as through play involving improvisations and tactical knowledge. It is the most coordinated game that carries high motor abilities. Football is an intermittent highly intensive and complex sport. A successful performance is dependent on the basic abilities, in particular, repeated explosive burst, strength, power, kicking, tackling and their derivatives such as jumping, turning, sprinting and changing pace, all making important contributions to the performance of the soccer player. With the constant demand for "high sports performance". The concept of football today has been changed. The concept of "total football" applies skill development, tactical development, development of all important motor components and physiological parameters which are closely associated and contributed to performance in football. The existing literature in the field of football shows that endurance, speed, agility, maximum leg strength, upper body strength, leg power, muscular endurance, flexibility, coordination and reaction time are important prerequisites for efficient Soccer performance (Uppal and Ray, 1986, pp 46-49).

Speed and strength are integral components of fitness found in varying degrees in virtually all athletic or sports movements. Simply put, the combination of speed and strength is power, for many years, coaches and athletes have sought to improve power in order to enhance performance by jumping, bouncing and hopping exercises. In

recent years, this distinct method of training for power or explosiveness have been termed as “plyometrics”. This method of training which seeks to enhance the explosive reaction of the individual through powerful muscular contraction as a result of rapid eccentric contraction. Using plyometrics for Soccer players is one of the most effective ways to increase explosive speed and power.

Soccer plyometrics are jump-training exercises that focus on exerting maximum muscular force in short intervals, the nature of training increases the efficiency of fast twitch muscle fibres resulting in gaining in both power and strength.

Some basic plyometric exercises for Soccer players:

Squat jump:

Knees bent, jump straight up. Concentrate on powerful leaps and smooth landings, transitioning quickly into next jump. Arms are usually in front, hands close together just below the chin. Weights can be held in the hands to build progression. Do short series of quick squat jumps. Brief rest and repeat.

Tuck jump:

Same positioning as the squat jump, but in jumping, also tuck the knees upward in the jump, thrusting the arms downward for maximum core impact. Again, perform in quick series of repetitions.

Lateral Bench Hops:

Leaning forward, firmly grip a workout bench with both hands. Keeping your feet together, hop from one side of the bench to the other in continuous back-and-forth bursts, landing on the toes and pushing off and back over quickly. Keep your chin up to keep your spine extended. Perform a series of rapid repetitions.

Side Lunge Bench Hop:

Again, using the short workout bench, place one foot atop the bench from the side of the bench. Jump up to replace your foot on the bench with your other foot, dropping off the other side of the bench, then jump back, alternating sides quickly. Stay upright and balanced, weight over the one foot on the bench.

Some Advance plyometric exercises for Soccer players:

Jumping Lunges

From a standing position, jump and come down one leg forward, the other knee coming down towards the ground. Immediately relaunch, alternating legs. Emphasis is on explosiveness out of the landing crouch back into the next jump. This exercise enhances stability and explosiveness. The optimal range of work is 3-to-4 sets with 5-to-8 repetitions in each set.

Single Leg Lateral (Skater) Jumps

This is another lateral jumping technique performed by jumping from one side to the other, pushing off one foot and jumping to the side, landing on the other, then jumping back again. The planting of the landing foot and then powering back up again is another stability-enhancing move. Experts recommend 3-to-4 sets with 10-12 jumps each time. The more power you put into the jumps, the more improvement you will get.

Lateral Box Jumps

From the side of an elevated platform – ideally a foam or wood "plyobox" or stacked boxes – jump bilaterally onto the top of the target and then return to the starting position, repeatingthe jump trying to maximize height. Ideal repetitions are 4-to-6 times in 3-to-4 sets on each side of the box. Steps or other types of platforms can also be utilized as a target where exercise boxes are not available.

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Effect of Plyometric Training on the Development of Physical Fitness among University Athletes in Mahatma Gandhi University, Nalgonda

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Abstract:

The purpose of the study was to identity the effect of plyometric training on development of physical fitness among university athletes Mahatma Gandhi University Nalgonda. Plyometric training is also known as jump training it is a training technique designed improve physical fitness among the university men Athletes for this purpose 100 athletes were randomly selected from sprinters jumpers and throwers from mahatma Gandhi University, Nalgonda, Telangana state and their age group 18-22 years .the selected subjects were randomly assigned to experimental group A and control group B each group consisted of 50 subject each .group A acted group as experimental group and were subjected to training for 12 weeks and group B acted as control group the variables selected for this study was speed, agility endurance and explosive power was 50 yard run, 4x10 mts shuttle run,12minutes run (cooper test,) and standing broad jump test was administered. The results of pre and post test were statistically treated by using mean SD after 12 weeks systematic plyometric training there is ,significant effect in experimental group A and whereas the control group exhibits a stagnation in their performance.

Key words: plyometric training, explosive strength, standing broad jump

Introduction

"Physical activity is probably the most enjoyable and yet most inexpensive form of preventive medicine." Participation in daily physical activities results in the proper growth and maintenance of good health and physical fitness. Running, jumping, throwing, climbing and hanging from the basic pattern of motor movements in regular mode is important. Physical activity promotes muscular strength, endurance, agility, speed and coordination.

Sports are a part of life and perhaps a more important part like education. It is the education through physical activity or physical literacy. Sports training are also part and parcel of education.

Plyometric Training

Plyometric Training is a type of training method to reduce the timing of eccentric and concentric concentration of the muscle which helps in fast running, explosive jumping and rapid movements. This type of training is very much helpful for better performance in Athletics. Plyometric Training helps the Athletes to improve the motor qualities. Speed and burst strength are essential qualities for athletes. While there are a number of drills tailored to develop motor abilities. By combining a basic strength-training regimen with burst workouts (plyometric training) practically any athlete can see improvements in his/her power, quickness and overall developmentpractice and dedication (Cho 1990).

Objective of the study:

The purpose of the study was to find out the effect of plyometric training whether or not any significant difference found between pre-test and post-test of selected physical fitness variables on Athletes of men and their performance.

Significance of the Study

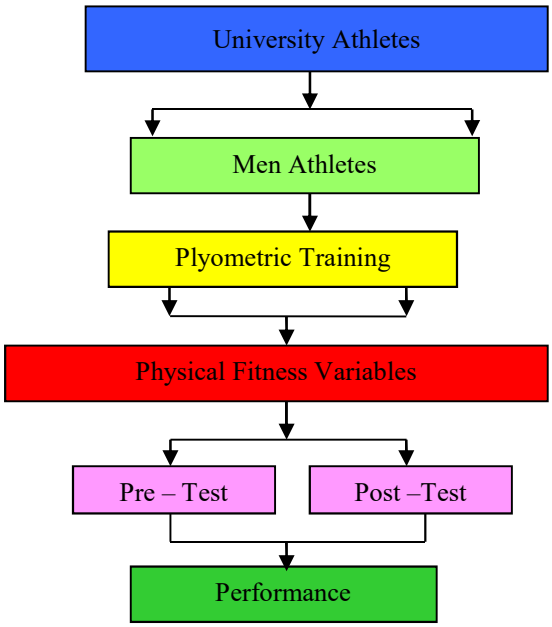
The study investigates the existing difference between pre-test and post-test in relation to their effect of plyometric training on selected physical fitness variables among men Athletes and their performance. The finding of the study may provide guidance to the physical education teachers and coaches to prepare training programmes on the basis of the study. It may further help the researchers who are interested in sports and games. The findings of the study may add to the quantum of knowledge in the area of sports and physical education.

Hypothesis:

There may not be any significant difference between pre – test and post on effect of Plyometric training program among men athletes in Mahatma Gandhi University, Nalgonda in relation to physical fitness variable.

Design of the study

The diagrammatic presentation was presented hereunder.



Methods and materials:

The University athletes consisting 50 athletes from Mahatma Ganndhi University, Nalagonda district, Telangana State. India The pre-test was conducted and the post-test was administrated after the experimental treatment of the plyometric Training on university athletes for 12 weeks. The researcher has collected the data separately from experimental group and control group for pre -test and post –test of 50 university athletes of men athletes from Mahatma Gandhi University, Nalagonda district, Telangana State. The subjects were measured with physical fitness variables i.e speed, agility, endurance, explosive strength were administrated on university athletes after systematic training of plyometric training.

Tools Used:

The following selected physical fitness variables i.e speed, agility, endurance, explosive strength, was administrated on university athletes after systematic training of plyometric training. The subjects of the study were in the age group between 18 to 22 years from two groups i.e., experimental group and control group.

Results & Discussions:

Table showing the significance between Pre- Test and Post – Test on effect of plyometric training program on development of university exp. grop men athletes in relation to physical fitness i.e. speed.

Sl. No.	Subjects	N	Mean	SD	df.	't' value	Sig. (2-tailed)
1.	Pre - Test	50	9.94	0.818	98	16.187	0.000
2.	Post - Test	50	7.98	0.553			

The mean value of pre test of university exp. group men athletes is 9.94, SD value is 0.818, and for post test of university men athletes the value is 7.98 and SD value is 0.553. It is very clear a significant difference was found between pre-test and post-test of university men athletes at Mahatma Gandhi University, Nalagonda district of Telangana state with regards to the physical fitness i.e. speed.

Table Showing the significance between Pre- Test and Post – Test on effect of plyometric training program on development of university exp.men athletes in relation to physical fitness i.e. Agility.

Sl. No.	Subjects	N	Mean	SD	df.	't' value	Sig. (2-tailed)
1.	Pre - Test	50	14.22	0.932	98	29.770	0.000
2.	Post - Test	50	9.70	0.580			

The mean value of pre test of university exp. men athletes is 14.22, SD value is 0.932, and for post test of university exp. men athletes the value is 9.70 and SD value is 0.580. It is very clear a significant difference exists between pre-test and post-test of university men athletes at Mahatma Gandhi University, Nalagonda district of Telangana state with regard to the physical fitness i.e. agility.

Table Showing the significance between Pre- Test and Post – Test on effect of plyometric training program on development of university exp. men athletes in relation to physical fitness i.e. Endurance.

Sl. No.	Subjects	N	Mean	SD	df.	't' value	Sig. (2-tailed)
1.	Pre - Test	50	4852.44	326.798	98	13.130	0.000
2.	Post - Test	50	5952.16	529.358			

The mean value of pre test of university exp. men athletes is 4852.44, SD value is 326.798, and for post test of university exp. men athletes the value is 5952.16 and SD value is 529.358. It is very clear that significant difference was found between pre-test and post-test of university men athletes at Mahatma Gandhi University, Nalagonda district of Telangana state with ire-respect of to the physical fitness i.e. endurance.

Table Showing the significance between Pre- Test and Post – Test on effect of plyometric training program on development of university experimental .men athletes in relation to physical fitness i.e. Standing Broad jump.

Sl. No.	Subjects	N	Mean	SD	df.	't' value	Sig. (2-tailed)
1.	Pre - Test	50	1.86	0.351	98	4.149	0.000
2.	Post - Test	50	2.12	0.328			

The mean value of pre test of university experimental. Group men athletes is 1.86, SD value is 0.351, and for post test of university men athletes the value is 2.12 and SD value is 0.328. It is very clear a significant difference was found between pre-test and post-test of university men athletes at Mahatma Gandhi University, Nalagonda district of Telangana state with regards to the physical fitness i.e. standing broad jump.

Conclusions:

Hence it is concluded that the pre test and post test of physical fitness variables i.e speed, agility, endurance and explosive strength on effect of plyometric training on the development of physical fitness among university men athletes in Mahatma Gandhi University, Nalagonda district of Telangana state in their related physical fitness . The science of sports training is a recent to field of sports science. The sports science discipline have improved at a very fast pace in the past few decades. The knowledge gained by these disciplines has to be understood by the coaches and trainers to apply it correctly to the training process. Sports training aims to improving the performance of sports persons, Weight training and Plyometric training are very popular now a days and effective training methods to promote higher performance in sprinting and jumping events. Plyometric training exercises are included depth jumping, hopping, bounding drills etc. Are legs plyometric and medicine ball exercise are arms plyometric exercise; these exercises are used to improve speed, explosive strength and other motor ability components. Weight training is on activities of high intensity, short duration and opposite side low intensity and high volume or build muscle, strength and endurance.

In conclusion the major role **of recent modernization, commercialization and increased work schedule of an athlete's lifestyle has prompted the need for higher physical fitness levels. A key component of physical fitness in athlete is to maintain high agility levels.** Several study have shown the programs of PT, to increase physical ability and such training leads to increase of muscles power and boosts explosive needs in the bodies. The factors such as power and acceleration have the range of motion exercises that are useful for many sports movement. According to previous studies, this method in PT can be currently most useful training to increase the explosive power in athletes is the requirement for athletes to achieve high levels of performance. Plyometric training is a training strategy designed to improve the performance by incorporating the basic needs of agility and power, allows muscle to reach exponential increase in the maximum strength and speed of movement

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Effect of Astanga Yoga Practices on Selected Psychological Variables among Obese Men Advocates

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Abstract

The purpose of the study was to find out the effect of astanga yoga practices on selected physical fitness variables among obese advocates. To achieve the purpose of the study 30 men obese advocates were selected from Chennai. The selected subject age ranged between 25 to 35 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent astanga yoga practices for thrice a week for six weeks of training programme, in the morning from 7.00 am and the Group – II - acted as a control group (CG) they did not participate in any kind of training programme part from the daily activities. The selected criterion variables such as self esteem and self confidence were measured by using standardize questionnaire. The subjects of two groups were tested on selected variables prior and immediately after the training period. The data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference. The 0.05 level of confidence was fixed to test the level of significance difference, the result of the study showed that 6 weeks of astanga yoga practices significance improvement on selected psychological variables among obese men advocates.

INTRODUCTION

Yoga is the science of right living and, as such, is intended to be incorporated in daily life. It works on all aspects of the person: the physical, vital, mental, emotional, psychic and spiritual. Swami Sivananda of Rishikesh explained yoga as an "...integration and harmony between thought, word and deed, or integration between head, heart and hand". Through the practices of yoga, awareness develops of the interrelation between the emotional, mental and physical levels, and how a disturbance in any one of these affects the others. Gradually, this awareness leads to an understanding of the more subtle areas of existence.

Ashtanga is a traditional form of yoga combining vigorous exercise and controlled breathing with the goal of inducing a meditative state through its physical practice (Jarry, et al. 2017). Yoga has a very clear idea of the goal and its purpose. It has a systematic process to achieve the aim. According to Samkhya-Yoga philosophy, everything pre-exists in its cause. It means that we have the capacity in ourselves that needs to be manifested. To manifest our potential which we already have in ourselves Ashtanga-yoga is the procedure or method to bring it out. Yoga emphasizes on Ashtanga yoga which means eight limbs, for the holistic development and self-realization of students. Ashtanga Yoga is a structured system in which the first emphasis was given to physical health because the mind requires a healthy body to harness its potential. Ashtanga-Yoga helps to manifest their potential and let the ego disappear and senses in control. Ashtanga-Yoga is the best approach for India for a balance Nation. We have to combine the dynamics and scientific attitude of the Western countries with the spirituality of our country. Through all this, we can make our people well organized, happier, and grounded Trivedi (2022).

Methodology

To achieve the purpose of the study 30 men obese advocates were selected from Chennai. The selected subject age ranged between 25 to 35 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent astanga yoga practices for thrice a week for six weeks of training programme, in the morning from 7.00 am and the Group – II - acted as a control group (CG) they did not participate in any kind of training programme part from the daily activities. The selected criterion variables such as self esteem and self confidence were measured by using standardize questionnaire. The subjects of two groups were tested on selected variables prior and immediately after the training period. The data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference. The 0.05 level of confidence was fixed to test the level of significance difference, the result of the study showed that 6 weeks of astanga yoga practices significance improvement on selected psychological variables among obese men advocates.

Training Programme

In the beginning Starting Prayer 2min, Preparatory Practices including Warm up – 10min and astanga yoga (listed below) – 30 min loosing exercise -10 min Relaxation- 8 Minutes Closing Prayer - 2min

The following Astanga yoga were used in practice session

Urdhva hastasana, utanasana, urdvah utanasana, chaturanga dandasana, urdvah mukha svanasana, adho mukha svanasana, urdvah utanasana, utanasana, urdhva hastasana, virabhadrasana, Chaturanga dandasana

Statistical Technique

The collected data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference.

Results and Discussion

The data collected prior and after the experimental period on self esteem and self confidence of experimental group (Astanga Yoga Practice Group) and control group (CG) were analysed and presented in table – I and II.

Table – I: Analysis of Covariance for Pre and Post Data on Self Esteem

Test	EX- G	CG	Source of variance	Sum of Squares	Df	Mean square	F
Pre-test mean	45.33	45.26	Between	0.03	1	0.03	0.03
			Within	34.27	28	1.22	
Post-test mean	42.13	45.00	Between	61.63	1	61.63	**16.32***
			Within	105.73	28	3.78	
Adjusted mean	42.14	44.99	Between	61.434	1	61.434	**15.70***
			Within	105.652	27	3.913	

*Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4.19 and 4.21 respectively).

Discussion on Findings of Self Esteem

The obtained F value on pre test scores 0.03 was lesser than the required F value of 4.19 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the

randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 16.32 was greater than the required F value at 4.19. This proved th the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 15.70 was greater than the required F value at 4.21 to be significant at 0.05 level and hence it was accepted that there was significant difference among the adjusted post test means on self esteem due to the astanga yoga practices.

The pre, post and adjusted means on self esteem were presented through bar diagram for better understanding of the results of this study in Figure-1.

Figure 1: Pre, Post and Adjusted Post Test Differences of the Astanga Yoga Practices Group and Control Group on Self Esteem

Table – II: Analysis of Covariance for Pre and Post Data on Self Confidence

Test	EX- G	CG	Source of variance	Sum of Squares	Df	Mean Square	F
Pre-test mean	38.00	38.06	Between	.033	1	0.03	.002
			Within	424.933	28	15.176	
Post-test mean	41.00	38.26	Between	56.033	1	56.033	**4.08***
			Within	384.933	28	13.748	
Adjusted mean	41.03	38.23	Between	58.511	1	58.51	**37.61***
			Within	42.008	27	1.56	

*Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4.19 and 4.21 respectively).

Discussion on Findings of Self Confidence

The obtained F value on pre test scores 0.002 was lesser than the required F value of 4.19 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 4.08 was greater than the required F value at 4.19. This proved that the differences between the post test mean at the subjects were significant. Taking **into** consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 37.61 was greater than the required F value at 4.21 to be significant at 0.05 level and hence it was accepted that there was significant difference among the adjusted post test means on self confidence due to the interval training.

The pre, post and adjusted means on self confidence were presented through bar diagram for better understanding of the results of this study in Figure-2.

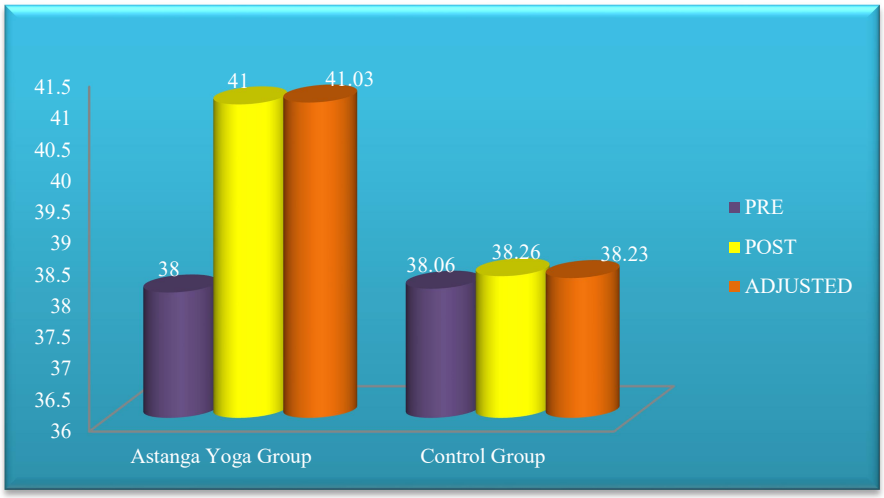

Figure 2: Pre, Post and Adjusted Post Test Differences of the Astanga Yoga Practice Group and Control Group on Self Confidence

Conclusion

The Ashtanga yoga practices are the most popular contemporary style of yoga it help to improve their physical and mental fitness variables. The one who follows this type of yoga system which brings them into wisdom, control, harmony and equanimity, which embraces the accumulation of knowledge, esoteric, experience, arusing of psychic powers, philosophy and meditation.

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The Role of Physical Activity in Stress Management in the Age of Adolescence.

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Abstract:

The purpose of this study was to investigate the role of Physical activity in stress management in the age of adolescence. Stress is the way human beings react both physically and mentally to changes, events, and situations in their lives. People experience stress in different ways and for different reasons. The reaction is based on your perception of an event or situation. Exercise can be an effective component of a stress management program, and all types of exercise can be beneficial for stress management. Exercise in almost any form can act as a stress reliever. Being active can boost your feel-good endorphins and distract you from daily worries. You know that exercise does your body good, but you're too busy and stressed to fit it into your routine. Virtually any form of exercise, from aerobics to yoga, can act as a stress reliever. If you're not an athlete or even if you're out of shape, you can still make a little exercise go a long way toward stress management. Discover the connection between exercise and stress relief — and why exercise should be part of your stress management plan. Exercise programs consistent with the current recommendations to improve health can be prescribed to manage stress. Fitness professionals should recognize that it might be necessary to refer a client to a psychologist or other health care provider to help develop strategies for managing stressors that produce chronic and acute episodic stress. Stress Reduction, Physical Activity, Mind-Body Exercise, Yoga, Chronic Stress, Aerobic Exercise can be an effective component of a stress management program, and all types of exercises can be beneficial for stress management.

Key words: Stress Reduction, Physical Activity, Mind-Body Exercises.

Introduction:

Stress is an organism's response to a stressor such as an environmental condition. This can affect the body physically or psychologically. Adolescence represents the transition from childhood to adulthood and is a period characterized by physical, physiological, psychological, and mental maturation; thus, this period is marked by an unstable psychological state. An unstable psychological state is caused by social factors such as schooling, personal appearance, reason and friendship, and career-related concerns; these factors can lead to stress and negatively affect the psychological state of adolescents. Exercise in almost any form can act as a stress reliever. Being active can boost your feel-good endorphins and distract you from daily worries. You know that exercise does your body good, but you're too busy and stressed to fit it into your routine. Hold on a second — there's good news when it comes to exercise and stress. Virtually any form of exercise, from aerobics to yoga, can act as a stress reliever. If you're not an athlete or even if you're out of shape, you can still make a little exercise go a long way toward stress management. Discover the connection between exercise and stress relief — and why exercise should be part of your stress management plan.

Purpose of the study:

The purpose of this study was to investigate the role of Physical activity in stress management in the age of adolescence.

Methodology:

Stress is the way human beings react both physically and mentally to changes, events, and situations in their lives. People experience stress in different ways and for different reasons. The reaction is based on your perception of an event or situation. If you view a situation negatively, you will likely feel distressed—overwhelmed, oppressed, or out of control. Distress is the more familiar form of stress. The other form, eustress, results from a "positive" view of an event or situation, which is why it is also called "good stress."

Eustress helps you rise to a challenge and can be an antidote to boredom because it engages focused energy. That energy can easily turn to distress, however, if something causes you to view the situation as unmanageable or out of control. Many people regard public speaking or airplane flights as very stressful—causing physical reactions such as an increased heart rate and a loss of appetite—while others look forward to the event. It's often a question of perception: A positive stressor for one person can be a negative stressor for another.

Causes of Stress:

The most frequent reasons for "stressing out" fall into three main categories:

1. The unsettling effects of change
2. The feeling that an outside force is challenging or threatening you
3. The feeling that you have lost personal control.

Life events such as marriage, changing jobs, divorce, or the death of a relative or friend are the most common causes of stress. Although life-threatening events are less common, they can be the most physiologically and psychologically acute. They are usually associated with public service career fields in which people experience intense stress levels because of imminent danger and a high degree of uncertainty—police officer, fire and rescue worker, emergency relief worker, and the military. You may not plan to enter a high-stress career, but as a college student, you may find that the demands of college life can create stressful situations.

The National Institute of Mental Health (NIMH) notes some of the more common stressors for college students:

Increased academic demands, Being on your own in a new environment, Changes in family relations, Financial responsibilities, Changes in your social life, Exposure to new people, ideas, and temptations, Awareness of your sexual identity and orientation & Preparing for life after graduation.

Symptoms of Distress:

Symptoms of stress fall into three general, but interrelated, categories—physical, mental, and emotional. Review this list carefully. If you find yourself frequently experiencing these symptoms, you are likely feeling distressed:

• Headaches • Fatigue • Gastrointestinal problems • Hypertension (high blood pressure)

• Heart problems, such as palpitations • Inability to focus/lack of concentration

• Sleep disturbances, whether it's sleeping too much or an inability to sleep

• Sweating palms/shaking hands • Anxiety • Sexual problems.

Even when you don't realize it, stress can cause or contribute to serious physical disorders. It increases hormones such as adrenaline and corticosterone, which affect your metabolism, immune reactions, and other stress responses. That can lead to increases in your heart rate, respiration, blood pressure, and physical demands on your internal organs. Behavioral changes are also expressions of stress. They can include:

• Irritability • Disruptive eating patterns (overeating or under eating) • Harsh treatment of others
• Increased smoking or alcohol consumption •Isolation

A sustained high level of stress is no laughing matter. It can affect every area of your life— productivity in the workplace and classroom, increased health risks, and relationships, to name just a few.

Managing Stress

As noted in the Introduction, you can learn to manage stress. The first step is understanding yourself better—how you react in different situations, what causes you stress, and how you behave when you feel stressed.

Physical activity in almost any form can act as a stress reliever. Being active can boost your feel-good endorphins and distract you from daily worries. You know that exercise does your body good, but you're too busy and stressed to fit it into your routine. Hold on a second — there's good news when it comes to exercise and stress. Virtually any form of exercise, from aerobics to yoga, can act as a stress reliever. If you're not an athlete or even if you're out of shape, you can still make a little exercise go a long way toward stress management. Discover the connection between exercise and stress relief — and why exercise should be part of your stress management plan. Get plenty of exercise. Eat healthy foods. Allow time for rest and relaxation. Find a relaxation technique that works for you—prayer, yoga, meditation, or breathing exercises. Exercise regularly to reduce muscle tension and promote a sense of well-being.

Physical activity and stress relief

Exercise increases your overall health and your sense of well-being, which puts more pep in your step every day. But exercise also has some direct stress-busting benefits.

- **It pumps up your endorphins.** Physical activity may help bump up the production of your brain's feel-good neurotransmitters, called endorphins. Although this function is often referred to as a runner's high, any aerobic activity, such as a rousing game of tennis or a nature hike, can contribute to this same feeling.
- **It reduces negative effects of stress.** Exercise can provide stress relief for your body while imitating effects of stress, such as the flight or fight response, and helping your body and its systems practice working together through those effects. This can also lead to positive effects in your body — including your cardiovascular, digestive and immune systems — by helping protect your body from harmful effects of stress.
- **It improves calmness:** As you begin to regularly shed your daily tensions through movement and physical activity, you may find that this focus on a single task, and the resulting energy and optimism, can help you stay calm, clear and focused in everything you do.
- **It improves your mood.** Regular exercise can increase self-confidence, improve your mood, help you relax, and lower symptoms of mild depression and anxiety. Exercise can also improve your sleep, which is often disrupted by stress, depression and anxiety. All of these exercise benefits can ease your stress levels and give you a sense of command over your body and your life.

Conclusion:

An earlier report by World Health Organization (WHO) and National Institute of Mental Health (NIMH) had drawn attention to the fact that Stress in the age of adolescence has reached higher rates globally and become an “exploding nightmare” in the developing world. Various India based research studies and surveys have also highlighted that there are various social, physical, physiological and psychological factors that are leading to this health issue. Schools and colleges particularly play a major role in the health and well being of its students. It is concluded that awareness about Stress may helps to early diagnosis of stress. And to take remedial measures easily. Prevention is better than Cure.

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How Strength and Plyometric Training Effects On Selected Physical Fitness Variables and its Benefits in Women Kabaddi Players in Telangana

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Abstract:

Plyometrics are crucial exercises for developing and improving power. From plyo pushups to jumping squats, these moves target the big muscle groups, harnessing the elastic energy in the stretch shortening cycle of muscle contractions to build brute power.In Kabaddi players require quick reflexes, dynamic balance, agility, neuromuscular coordination and individual proficiency. Plyometric exercises were utilized to enhance sportsperformance by eliciting numerous positive changes in neural and musculoskeletal system of healthyplayers. The purpose of this study was to evaluate the effects of Plyometric training. Kabaddi is a team contact sport demanding high endurance, explosive power, strength, agility, reaction time, spatial awareness, and speed. Plyometric exercises are known to improve explosive power, agility, aerobic capacity, trunk and lower-extremity muscle strength, and flexibility. It has demonstrated improved physical fitness in athletes playing contact sports such as soccer. The present study hypothesized that plyometric training integrated with conventional Kabaddi training would enhance explosive power, agility, strength, balance, and aerobic performance among Women Kabaddi players.

Key Words: Kabaddi Plyometric, strength, explosive power, agility, speed endurance and sports performance.

Introduction

Kabaddi is a contact team sport. Played between two teams of seven players, the objective of the game is for a single player on offence, referred to as a "raider", to run into the opposing team's half of a court, touch out as many of their defenders as possible, and return to their own half of the court, all without being tackled by the defenders, and in a single breath.[2] Points are scored for each player tagged by the raider, while the opposing team earns a point for stopping the raider. Players are taken out of the game if they are touched or tackled, but are brought back in for each point scored by their team from a tag or tackle.

It is popular in the Indian subcontinent and other surrounding Asian countries. Although accounts of kabaddi appear in the histories of ancient India, the game was popularised as a competitive sport in the 20th century. It is the national sport of Bangladesh. It is the state game of the Indian states of Tamil Nadu, Andhra Pradesh, Bihar, Haryana, Karnataka, Kerala, Maharashtra, Odisha, Punjab, Telangana, and Uttar Pradesh. This game is known by numerous names in different parts of the Indian subcontinent,suchas: kabaddi or chedugudu in AndhraPradesh and Telangana; kabaddi in Maharashtra, Karnataka and Kerala; kabadi or ha-du du in WestBengal and Bangladesh; bhavatik in Maldives, kauddi or kabaddi in the Punjab region; hu-tu-tu in WesternIndia, hu-do-do in Eastern India; chadakudu in South India; kapardi in Nepal; and kabaddi or sadugudu in Tamil Nadu.

Physical Fitness Components:

Strength, explosive power, endurance, agility, balance and speed.

Importance and need of the study:

In sight of the importance of motor ability as a basis for the development of any a game or skill, the researcher feels that Plyometric training can provide a very inexpensive and economic system to regulate and tone up this infrastructure to its optimum level. Unless this infrastructure is geared to its optimum level, the acquired skill like sports, games, gymnastics, or rhythmic will have sound basis to stand up on.

Significance of the study:

- The present study focuses on the impact of plyometric training on college student. The Physical fitness components and its effects, benefits will have a greater influence on sports performance. Hence the results of the study will help the Coaches, Physical Education Teachers and Sports Personnel to know the effect of plyometric training. The present study is significant in view of the following aspects:
- Strength is the basis of high-level performance in most sports. Speed, endurance, power, agility and quickness are some of the most significant, and visible, components that required for kabaddi players to excel in competition. This study would reveal the importance of carefully designed combined strength and plyometric training programs in improving overall performance of female kabaddi players.
- The present study would exemplify the importance of combined strength and plyometric training which can be administered to active and inactive individuals those wishes to reduce percent body fat and fat mass.
- Endurance plays a vital role in modern kabaddi game. This study would show the effectiveness of combined strength and plyometric training in enhancing endurance.

Objectives of the study:

- To find out the effectiveness of speed & endurance in kabaddi players of Telangana.
- To find out the overall effectiveness of Strength and power in the kabaddi players of Telangana.
- To find out the overall effectiveness of flexibility in women kabaddi players using physical fitness components.
- To find out the overall effectiveness of Agility in women kabaddi players using physical fitness components.

Benefits of the study:

Physiological Benefits:

• It benefits every aspect of your body, from your bones to your muscles to your organs.

• Regular exercise strengthens your muscles and bones which aids relief from common aches and pains, such as lower back pain and arthritis, as well as fighting osteoporosis and muscle loss.

It also improves your balance and flexibility, making everyday activities easier and supporting your physical independence as you age. It even helps with things you might not think about, such as boosting sexual stamina and relieving menstruation cramp pains.

Emotional benefits

Physical activity has been shown to stimulate chemicals in the brain that make you feel better. • Hence, playing sport regularly improves children's overall emotional well-being.

• Research shows there's a link between playing sport and self-esteem in children.

• The support of the team, a kind word from a coach, or achieving their personal best will all help children to feel better about themselves.

• It can control a player's emotional imbalance.

Social benefits:

• Playing in a team helps children to develop many of the social skills they will need for life.

• It teaches them to cooperate, to be less selfish, and to listen to other children.

• It also gives children a sense of belonging. It helps them make new friends and builds their social circle outside school and colleges.

Methodology

- In this chapter the methodology adopted for the selection of subjects, rationale for selection of subjects, selection of variables, justification of the variables selected, selection of tests, calibration of instruments, reliability of tests, orientation of testers, orientation of subjects, design of the study, collection of data, training interventions, administration of tests and statistical techniques have been elucidated.
- To accomplish the purpose of the study, sixty (60) female kabaddi players from Hyderabad & Ranga reddy
- Were selected from affiliated colleges of Osmania University. These players were classified into two groups namely combined strength and plyometric training group (30) and control group (30). These players represented their college in intercollegiate kabaddi and have more than six years of playing experience. The selected subjects gave willingness to participate in this study. After having got the consent, 60 female kabaddi players were medically examined and found that they were free from diseases and injuries to undergo training program.

Conclusion

It was also concluded that there is improvement in physical fitness components which we have taken into this study Improved Strength. Prevention of injuries. Improved coordination improved connection between our brains and our body movements, the mainly the study improves strength and explosive power as well as balance of our body posture.

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"A Combination of Selected Physical Fitness Variables Involved In Jump Shot Skill of Men Handball Players of Osmania University Hyderabad Telangana"

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Abstract:

The purpose of the study was to find out the combination between the selected physical fitness variables such as speed, agility, explosive power and speed endurance on jump shot skill. To achieve the purpose of these study thirty men handball players who were studying under Osmania University affiliated colleges students was selected as subject at randomly. Jump shot skill of handball players was measured by 9 meters (jumps and throw test). Physical fitness variables like speed, agility, explosive power and speed endurance were measured using 50 m, shuttle run test, vertical jump test and 600 yard run respectively. Pearson's product movement correlation was administered to find out the coordination. The result of the study showed the combination between jump shot skill and speed ($r = 0.631$, $p < 0.05$), agility ($r = 0.12$, $p > 0.05$), explosive power ($r = 0.350$, $p > 0.05$) and speed endurance ($r = 0.71$, $p < 0.05$). It is evident from the study that speed and speed endurance exhibited a significant combination with jump shot skill of men handball players. Keywords: Speed, agility, explosive power, speed endurance, handball and jump shot skill.

Introduction:

Handball is a team game; it is a second fastest game in the world. The game Handball is very popular in European countries. Which requires players to have well developed aerobic and anaerobic capacities? Motor ability, sprinting, jumping, flexibility and throwing velocity represent physical activities that are considered as important aspects of the game and contribute to the high performance of the team. Successful performance requires explosive power of the legs and arms, sprint velocity and kinesthetic feeling in ball control. On the other hand, for a modern model of a handball player, the pronounced longitudinal dimensions such as stature, arm span, hand spread and length are necessary. Such an anthropometric pometric profile plays a supportive role in helping athletes perform under actual competitive conditions. Longer upper extremities contribute to maximizing throwing velocity and longer hand spread and length influence specific motor abilities such as dribble, passing, catching and ball throwing. Goal shooting is the conclusion of the attack with hopes of scoring. The aim of the attack organization is to create an advantageous position from which one member of the team can execute a direct goal shot with a good chance of scoring. Goal shooting is most commonly attempted by the players from the area between the free-throw line and the goal line in presence of defense players and particularly from the back court position.

Table: Correlation between jump shot skill on selected physical fitness components

Variables	Jump shot skill
1. Speed	*0.631*
2. Agility	*0.12*
3. Explosive power	*0.350*
4. Speed Endurance	*0.71*

*Significant at 0.05 level of confidence (28df = 0.361)

The purpose of the study was to find out the combination between the selected physical fitness variables such as speed, agility, explosive power and speed endurance on jump shot.

Methodology:

Subjects and variables Thirty (30) men handball players who were studying in the Osmania University affiliated colleges students were selected as subject at randomly. The age of the subjects ranged between 18 to 24 years. Jump shot skill of handball players was measured by 9 meters (jumps and throw test). Physical fitness variables like speed, agility, explosive power and speed endurance were measured using 50 m, shuttle run test, vertical jump test and 600 yard run respectively.

Statistical techniques:

The data were analyzed using statistical package for social sciences (SPSS) for window version 11.5. Pearson product movement correlation was administered to find out the combination between the selected physical fitness components on jump shot skill of men handball players. Statistical significance was accepted at $p < 0.05$.

Results:

The table - 1 elicit the combination between jump shot and speed ($r = 0.631$, $p < 0.05$), agility ($r = 0.12$, $p > 0.05$), explosive power ($r = 0.350$, $p > 0.05$) and speed endurance ($r = 0.71$, $p < 0.05$). It is evident from the study that speed and speed endurance showed significant relation- ship with jump shot skill of men handball players.

Discussion:

According to Singh Hardayal, (1984) sports endurance ensures the optimum speed of motor actions. The ability to maintain pace or tempo of an exercise or during competition is impossible without the requisite level of endurance. Good endurance also ensures high quality of skill of movement execution, which finds expression in accuracy, precision, rhythms, consistency etc. Under condition of fatigue the sports men tend to lose motor coordination, concentration, mental alertness etc. This clearly points out the importance of endurance for tactical efficiency. From the findings of Beena Lal (1990) it was concluded that speed and speed endurance show negative correlation, which indicate that lesser the time taken better will be the performance. The findings of this study are also supported by Class and Broer (1988) who states that accuracy in basketball shooting is also determined by individual endurance level.

Conclusion:

The back court players require greater amount of speed and endurance to have better jump shot in men handball players.

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Effect of Weight Bearing Exercise on Selected Psychological Variables among Obese Engineering College Women Students

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Abstract:

The purpose of this study was to find out effect of weight bearing exercise (WBE) on selected psychological variables among obese engineering college women students. To achieve the purpose of this study thirty (n=30) engineering college women were selected from Chennai, Tamil Nadu. The selected subject's age ranged between 17 to 25 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent (WBE) for thrice in a week of six weeks, and each section lasted 45minutes and the Group – II - acted as a control group (CG) they did not participate in any kind of training programme apart from the daily activities. The selected criterion variables such as emotion regulation and empathy were measured by standardized questionnaire was used. The collected data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference. The results of the study showed that selected criterion variables were significantly improved due to weight bearing exercise among obese engineering college women students.

Keywords: Weight Bearing Exercise (WBC), Emotion Regulation & Empathy

Introduction

Weight bearing exercise (WBE) – which means exercise, one performs while on their feet that works the bones and muscles against gravity (**Scott Boden, 2006).** Weight bearing exercises are the one of the best exercise for the bone and this force the muscle to work against gravity. They include walking, hiking, jogging, climbing stairs, playing games, and dancing. Young women and men who exercise regularly generally achieve greater strength than those who do not.

"Emotion regulation" is a term generally used to describe a person's ability to effectively manage and respond to an emotional experience. People unconsciously use emotion regulation strategies to cope with difficult situations many times throughout each day.

Empathy is defined as "the intellectual identification with or vicarious experiencing of the feelings, thoughts, or attitudes of another" (Random House Unabridged Dictionary, 2008). According to Ioannidou & Konstantikaki (2008) Empathy is the capacity to share and understand another's state of mind or emotion. It is often characterized as the ability to put oneself into another's self, or in some way experience the outlook or emotions of another being within oneself.

Methodology

To achieve the purpose of this study thirty (n=30) engineering college women were selected from Chennai, Tamil Nadu. The selected subject's age ranged between 17 to 25 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent (WBE) for thrice in a week of six weeks, and each section lasted 45minutes and the Group – II - acted as a control group (CG) they did not participate in any kind of training programme apart from the daily activities. The selected criterion variables such as emotion regulation and empathy were measured by standardized questionnaire was used.

Training Programme

During the investigational period the experimental group (WBT) underwent six weeks of preparation programmes on Monday's, Tuesday's and Wednesday's, in addition to their daily routine activities as per the program. The duration of preparation were planned for 60 minutes that is from 4.00pm to 5.00pm. All the subjects actively involved in this study were carefully monitored throughout the training programmes. The following exercise was followed in the training session, the schedule consist of 15min jogging, 10min mobility exercise followed by squatting, stair case climbing, push up, plank, lunges (Variations), high knee walk and squat walk end with 10 min cool down exercise.

Statistical Procedure

The collected data were analyzed statistically through analyze of covariance (ANCOVA) to find the significance difference.

Results and Discussion

The data collected prior and after the experimental period on Emotion Regulation & Empathy of experimental group (weight bearing training) and control group (CG) were analysed and presented in table – I and II.

Table – I: Analysis of Covariance for Pre and Post Data on Emotion Regulation

Test	EX- G	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	44.80	43.07	Between	22.53	1	22.53	0.58
			Within	1071.33	28	38.62	
Post-test Mean	47.80	43.60	Between	132.3	1	132.30	**3.35***
			Within	1106.0	28	39.50	
Adjusted mean	47.10	44.29	Between	57.82	1	57.82	**3.78***
			Within	412.75	27	15.28	

* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 2 and 28 and 2 and 27 were 3.34 and 3.35 respectively).

The obtained F value on pre test scores 0.58 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the

randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 3.35 was greater than the required F value at 3.34. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 3.78 was greater than the required F value at 3.75 to be significant at 0.05 level and hence it was accepted that there was significant difference among the adjusted post test means on emotional regulation due to the weight bearing exercise.

The pre, post and adjusted means on emotion regulation were presented through bar diagram for better understanding of the results of this study in Figure-1.

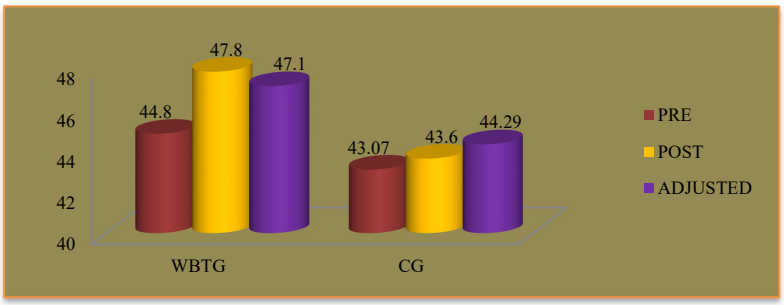

Figure 1: Pre, Post and Adjusted Post Test Differences of the Weight Bearing Training Group and Control Group on Emotion Regulation

Table – II: Analysis of Covariance for Pre and Post Data on Empathy

Test	EX- G	CG	Source of Variance	Sum of Squares	df	Mean square	F
Pre-test mean	29.40	29.73	Between	0.83	1	0.83	0.05
			Within	426.53	28	15.23	
Post-test Mean	36.13	31.07	Between	192.53	1	192.53	**12.29***
			Within	438.66	28	15.67	
Adjusted mean	36.21	30.98	Between	205.02	1	205.02	**16.68***
			Within	331.83	27	12.29	

* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 2 and 28 and 2 and 27 were 3.34 and 3.35 respectively).

The obtained F value on pre test scores 0.05 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 12.29 was greater than the required F value at 3.34. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 16.68 was greater than the required F value at 3.34 to be significant at 0.05 level and hence it was accepted that there was significant difference among the adjusted post test means on empathy due to the weight bearing exercise.

The pre, post and adjusted means on empathy were presented through bar diagram for better understanding of the results of this study in Figure-2.

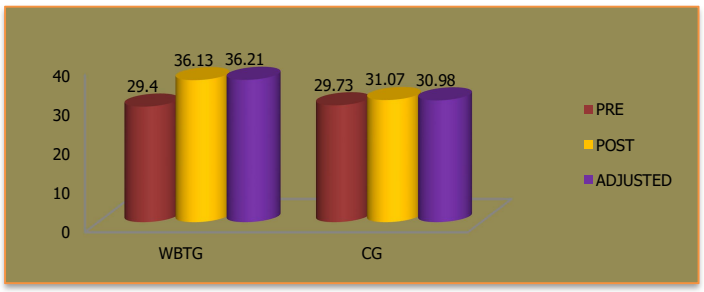

Figure 2: Pre, Post and Adjusted Post Test Differences of the Weight Bearing Training Group and Control Group on Empathy

Discussion on Findings

The present study examined the effect of weight bearing exercise (WBE) on selected emotion regulation and empathy among obese engineering college women students. The results showed a statistically significant ($p<0.05$) due to WBE in the value of the emotion regulation and empathy among engineering college women students. Pari , (2019) highlighted emotion regulation and empathy significantly increased due to yogic practices, Abdullah (2016) despited the correlation between psychological factors and performance, psychological factors alone could not determine the performance of elite soccer players. Singh (2016) revealed that significant differences were found between male Intercollege and Interuniversity male rowing players on the psychological variables.

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"Comparative Study on Anxiety and Aggression In Between Football Players of Professional Colleges and Degree Colleges in Telangana"

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Abstract:

The promotion of sport is no longer a matter of dispute. The importance has been recognized by all countries of the world. Performance in sports and games is purely based on one's physical as well as mental capacity. Over the last two decades psychology has become increasingly involved in athletics and sports. It focuses both on the individual athlete on the team. Psychology involved with athletes' coaches and trainees to enhance athletic performance through improved physical and mental training. Knowledge of psychology helps in understanding each individual anxiety and aggression. Anxiety and aggression plays paramount role in sports and two states of mind. The over anxiety individual has a high level of careful and emotional activity with neuromuscular tension that may eventually lead to the individual to the exhausted stage and perhaps to psychosomatic disorder. Aggression is one of those unfortunate terms in the behavioral sciences that have been taken over from everyday language and have variety of meanings.

Key words: Psychology, Athletes, Coaches, Trainees, Anxiety, Aggression and Foot ball Players.

Introduction:

Anxiety refers to the emotional state of mind where a fear of danger or loss or suffering is a prominent feature and is one of the greatest problems of modern trends in scientific knowledge. The intense anxiety which appears and disappears occasionally in Foot ball players is called has free floating anxiety. Aggression is behavior and action that usually seeks to inflect psychological or physical harm either on another person or on some individual possessions or dear one. Aggression is the attitude to dominant the college or opponent by virtue of stronger body, greater ambition. Some aggression directly inward and in its extreme form may culminate in self destructive behavior including suicide other aggressive behavior is directly outward towards others.

Hypothesis:

It was hypothesized that there might not be any significance difference in anxiety and aggression among Foot ball players of professional and degree colleges in Telangana.

Methodology:

The main purpose of the study was to compare the anxiety and aggression among Foot ball players of professional and degree colleges for the purpose of the study nearly 130 university Foot ball players from different professional colleges and degree colleges of various universities were selected as subjects. The age group of the subjects was below 25 years. Anxiety and aggression or the two psychological variables selected to compare the anxiety and aggression of professional and degree college's foot ball players. The players are watched individually without their

knowledge when they are performing in the game at the end of the game the layers involved or orally asked the questions which are in the questionnaire and also the questionnaire was served to bring out their responses related to the psychological variable selected. The rate of responses both oral as well as questionnaire are recorded twice and as same responses were all the times the data recognized as reliable.

Analysis of the Data:

The Psychological variables namely Anxiety and Aggression were assessed by using analysis of variance. The data was analyzed and dealt whether hypothesis formulated was accepted or rejected.

Table – I:

Source of variance	DF	SS	MS	F ratio
Within the group	148	1819.5	12.29	--
Between the group	1	6.82	6.82	0.55

Table – I: the analysis of data on Anxiety between the professional and degree college foot ball players shows that the calculate value of F ratios is 0.55 which is significant at 0.05 level of confidence. Hence it shows that there is no difference in Anxiety level between the professional and degree college foot ball players.

Table – II:

Source of variance	DF	SS	MS	OF	TF
Within the group	148	1063.26	7.18	--	--
Between the group	1	2.93	2.93	0.41	3.90

Table – II: shows the analysis of data on Aggression among professional and degree college foot ball players. The obtained values of F ratio is 0.41 is significant AT 0.05 LEVEL. Hence there is no difference in Aggression aware of the professional and degree college foot ball players.

Discussion on Hypothesis:

It was hypothesized that there might not be any significant difference in Anxiety and Aggression among foot ball players of professional and degree college. As the obtained "F" ratio of 0.55 and 0.41 was insignificant at 0.05 level of confidence the null Hypothesis is accepted.

The difference in level of Anxiety among professional and degree college players was comparatively insignificant at 0.05 levels. It was also concluded that the difference in level of Aggression among professional and degree college players was insignificant at 0.05 levels.

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Analysis on Mental Skill among Government and Private College Level Volleyball Players during Covid -19 Pandemic

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Abstract

The aim of the study was to find out the mental skill among government and private college level volleyball players during covid -19 pandemic in Kerala, aged between 17-22 years. From the total of 84 subjects, the subjects were further delimited to 42 subjects in each government and private college level volleyball players. The subjects were chosen at random and narrowed down using purposive sampling. By administering the questionnaire to the athletes directly, the data were obtained from them. The questionnaire consisted of Mental skill questionnaire (Bull,Albison &Shambrook,1996).The players were assured regarding the confidentiality of their responses. The data was analysed by computing descriptive statistics and using independent't' test at 0.05 level of significance. The research challenges were addressed through the testing and discussion of hypotheses. According to the study's findings, there was a substantial difference between the means of a few chosen psychological parameters, like mental skill, among college-level volleyball players from the government and private sectors in Kerala during the Covivirus 19 epidemic.

Keywords: Mental Skill, volleyball

Introduction

Volleyball is a competitive sport in the world which requires high level of physical, physiological and psychological fitness. It is a group activity, played by two groups comprises of six players on each side of the court, isolated by a net. The primary question of the diversion is pass the ball to the opponent. Over the net, in three hits and the other way around. The volleyball coordinate term last around an hour and a half comprise of five sets; during the match, players fail to meet expectations 250 to 300 activities with rapid developments and change of bearings. All the playing activities are overwhelmed by the explosive strength **(Kumar, 2014)**, the present study is concerned with the important psychological variable that is mental skills which is the dynamic ability to deal with issues brought on by one's own and other people's emotions As a result, greater mental skill values are connected with motivation for exercise and training. However, due to the lack of connection between the many competitors during competitions, this aspect may be adversely impacted by periods of inactivity in sports (players, coaching staff, opposite teams etc.). Therefore, increasing intrinsic motivation levels would be crucial during times of isolation in order to reduce levels of stress and anxiety.

Currently, an unanticipated pandemic is being caused by a virus known as Coronavirus (COVID-19), which has fast spread to too many nations worldwide. As a result, citizens have been subjected to periods of quarantine and isolation. The shutdown began in India on March 21, 2020. On the athletic fields, formal contests

and practises were put on hold or discontinued. All volleyball players, in particular, were required to stay at their own homes.

Depending on the sport and the athlete's profile, discontinuing training during the quarantine had varying consequences. The most significant changes in volleyball-specific jumping performance levels, attacking, maximal concentric strength of the upper limbs, and power of upper and lower limbs were identified as being induced by a time of non-competition (off-season). A team sport's isolation periods due to a lack of practises and competitions may also have resulted in a breakdown in communication between the coaching staff and the players as well as poor individual training conditions. Therefore, players' isolation periods may have caused a partial or complete reversal of the adaptations brought about by the training process, known as "detraining."

When combined, solitude and time away from sports frequently result in psychiatric issues. The most significant "stressors" that can cause negative mental impacts are things like the length of the quarantine, fears of infection, frustration, boredom, limited supplies, and incomplete information. The effects of an isolation period, however, are not equally prevalent in all parts of the population. Thus, during the COVID-19 quarantine, college-level athletes were the social group that experienced the most tension, anxiety, and sadness.

On March 11, 2020, the World Health Organization (WHO) proclaimed coronavirus disease (COVID-19) to be a pandemic. Previous research on infectious diseases demonstrated that these illnesses harm the general public's mental health in addition to the physical health of those who contract them. In order to support COVID-19-related mental health policies and highlight the importance of being ready for future infectious disease outbreaks, this study will analyse the factors that contributed to depression in the general population during the COVID-19 pandemic (**Ji Ho Lee, Hocheol Lee, 2021).**

Sport in Spain has been affected by the spread of COVID-19, causing athletes to train at home. The study's goals were to I evaluate training and recuperation conditions in handball players according to gender and competitive level before and during the isolation time, and (ii) examine the effects of psychological elements during the isolation period. 187 participants in all, including 66 women and 121 males **(Daniel Mon-López, 2020).**

The COVID-19 quarantine had an impact on the athletes' daily life and training routines on various levels (physical, physiological, and psychological). The significance of this study lies in the necessity to understand how a volleyball player's psychological state changes after extended periods of inactivity in order to develop effective ways for getting back into physical exercise.

Therefore, the objectives of this study were (i) to analyse the impact of psychological factor (mental skill) among volleyball players during the period. lot of research are already exist on impact on psychological variables among various sports and games, but in this covid-19 pandemic situation the impact of selected psychological variable (mental skill) among college level volley ball players few studies conducted, this research will clear the vagueness in that particular area.

Objective of the study

The objective of the study was planned with the aim to compare the selected psychological variable of mental skill among government and private college level volleyball players during covid -19 pandemic in Kerala.

Materials and methods

The subject of this study are total eighty four (42 government and 42 private college volleyball players) government and private college level volleyball players in Kerala state of age ranged from 17-22 years. To analysis

and compare mental skill among government and private college level volleyball players during covid-19 pandemic in kerala,'t' test was applied at 0.05 level of significance.

Description and administration of questionnaire

Bull, Albison, and Shambook's mental skills questionnaire, which has 28 items and measures participants on a six-point Likert scale from strongly agree to strongly disagree, was employed as a trait measure of mental abilities. The following mental competencies are measured by this instrument: Motivation, mental forethought, self-assurance, anxiety and worry management, concentration, relaxation, and imagery.

Data analysis

For the data analysis responses were expressed as mean standard deviation. Independent't' test was performed for analysis among two groups (government and private college level volleyball players), $p<0.05$ was considered statistically significant. Data analysis was performed using SPSS software under windows.

Result

To analysis mental skill among government and private college level volleyball players of mean, standard deviation and 't' test were computed. On mental skill, the mean and standard deviation of the two groups along with the significance of deference by't' test have been presented in table 1

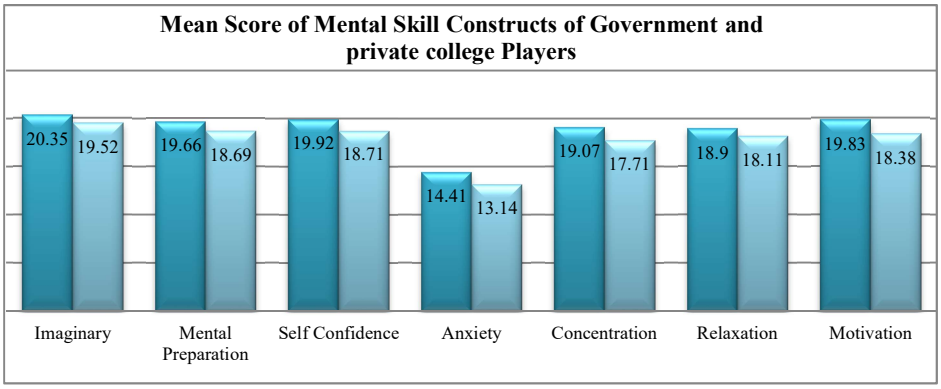
Table 1 Significant Difference between government and private college level volleyball players during covid-19 pandamic in kerala with regards to the level of Mental Skill

Mental Skill Constructs	Players							
	Government			Private			t value	P value
	N	Mean	SD	N	Mean	SD		
Imaginary	42	20.35	1.39	42	19.52	1.29	2.841	0.006**
Mental Preparation	42	19.66	1.47	42	18.69	1.74	2.767	0.007**
Self Confidence	42	19.92	1.42	42	18.71	1.56	3.721	0.000**
Anxiety	42	14.41	1.11	42	13.14	1.44	3.555	0.001**
Concentration	42	19.07	1.58	42	17.71	2.11	3.334	0.001**
Relaxation	42	18.90	1.80	42	18.11	1.88	1.948	0.055
Motivation	42	19.83	1.28	42	18.38	1.96	4.011	0.000**

*significant at 5% level of significance

Table 1 shows that there is a significant difference in relation to the Imaginary, Mental Preparation, Self Confidence, Anxiety, Concentration and Motivation between government and private college level volleyball players during covid-19 pandemic in kerala, as the calculated p and t values are 0.006** and 2.841, 2.767And 0.007**, 3.721 and 0.000, 3.555 and 0.001, 3.334 and 0.001, 4.011 and 0.000 respectively, The significance value (p) is lesser than that of 0.05 at 5% level of significance and the table shows that there is no significance difference in relaxation between government and private college level volleyball players during covid-19 pandemic in kerala, as the calculated p and t values are 0.055 and 1.948 respectively, The significance value (p) is 0.055 which is greater than that of 0.05 at 5% level of significance

Figure 1. mean score of mental skill constructs of government and private college level volleyball players



Discussion

The goal of the study was to analyse selected psychological parameter (mental skill) among government and private college level volleyball players during covid-19 pandemic in kerala with reference to compare with Level of Mental Skill. For the purpose of the study a total of 84 government and private college level volleyball players in Kerala, The age of selected players were from 12-17 years, among the eighty-four selected subjects there were 42 government and private college level volleyball players.

As a result of independent sample 't' test, the Level of Mental Skill It was found that the difference in sub variables of **Level of Mental Skill**(Imagery ability, Mental preparation, Self-confidence, Anxiety and worry management, Concentration ability, and Motivation) between government and private college level volleyball players. the measuring the 't' and 'p' value of independent 't' statistic, Therefore, it can be found that, there is a significant difference between government and private college level volleyball players with regarding all sub variables of level of mental skill. And it was founded that the difference in the sub variable on Relaxation ability of level of mental skill is there is no significance difference between government and private college level volleyball players with regarding all sub variables of level of mental skill.

Conclusion

Result of this study are consistent with previous research studies that have demonstrated that overall mental skill of government college level volleyball players are better than private college level volleyball players.

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Impact of Combined Strength Training and Endurance Training On Muscular Strength Endurance on Basket Ball Inter NIT Players of Warangal District

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Abstract:

The Impact of simultaneous quality and continuance preparing on Muscular quality perseverance on basket ball Inter NIT Players men from National Institute of Technology Warangal were chosen as subjects. The age of the subjects extended between 16 to 18 years. They chose subjects were separated into three gatherings of ten subjects each. Amass - I outlined quality preparing before continuance preparing, Group - II planned quality preparing after perseverance preparing and Group -III went about as control gathering did not take an interest in any extraordinary preparing program separated from their consistent exercises. The information was gathered at before and after the preparation program of twelve weeks. The investigation of covariance was utilized to break down the information. The aftereffects of the review demonstrated that the Muscular quality continuance was altogether enhanced because of the simultaneous quality and perseverance preparing.

Key words: Concurrent strength, Endurance, Muscular strength endurance, Bent knee sit-up

Introduction

The quality and continuance preparing is attempted by various competitors in basket ball with an end goal to accomplish adjustments particular to both types of preparing. Writing discoveries to date, researching the neuromuscular adjustments and execution changes related with simultaneous quality and continuance preparing has delivered conflicting outcomes. Demonstrated that simultaneous preparing restrains the improvement of quality and power, yet does not influence the advancement of high-impact wellness when contrasted with either method of preparing alone. Different reviews have demonstrated that simultaneous preparing has no inhibitory impact on the improvement of quality and perseverance. Strength and endurance adaptations. Strength and endurance training regimes represent and distinctly different adaptive responses when performed individually. Typically, quality preparing programs include expansive muscle gather initiation of high-resistance low-reiteration activities to build the capacity of skeletal muscle. Conversely, perseverance preparing is characterized as rehashed sub-maximal compressions with heaps of low resistance. When performed freely, these two particular types of preparing incite generally, inverse physiological adjustments inside the muscle. The adjustment to preparing that the muscle continues is particular to the preparation boost. At last, quality preparing upgrades drive generation of the skeletal muscles prepared. In this review an endeavor is made to discover the simultaneous quality and perseverance preparing on Muscular quality continuance.

Methodology

The preparation time frame, the trial bunches experienced their individual preparing program. Test aggregates in particular, Experimental gathering - I quality preparing before perseverance preparing, exploratory gathering - II quality preparing after continuance preparing and bunch - III went about as a control assemble, experienced their separate preparing program three days for every week for twelve weeks. Every day the preparation timetable was led just at night session that went on for 120 minutes. Earlier and after each instructional course

subjects of exploratory gatherings had 10 minutes of warm-up and 10 minutes of warm down activities including running, portability and extending works out. Quality continuance measured by twisted knee sit ups test and the unit of estimation was scores in number of sit ups played out the subjects.

Table-(A) demonstrates the dissected information on Muscular Strength Endurance. The pre-test method for Muscular Strength Endurance were 34.30 for trial amass I, 34.10 for exploratory gathering II and 33.90 for control assemble. They got "F" proportion of 0.14 was lesser than the table F-proportion 3.35. Consequently the pre-test was at 0.05 level of certainty for the degrees of flexibility 2 and 27.The post-test method for Muscular Strength Endurance were 41.50 for trial amass I, 36.20 for trial bunch II and 35.20 for control aggregate. They got "F" proportion of 63.36 was higher than the table F-proportion 3.35. Consequently the post-test was huge at 0.05 level of certainty for the degrees of opportunity 2 and 27.The balanced post-test method for Muscular Strength Endurance were 42.34 for exploratory gathering I, 36.20 for and trial bunch II and 34.36 for control aggregate. They got "F" proportion of 264.78 was higher than the table F-proportion 3.37. Consequently the balanced post-test was critical at 0.05 level of certainty for the degrees of flexibility 2 and 26.Since, three gatherings were looked at, at whatever point they got "F" proportion for balanced post test was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in Table-(B).

Analysis of covariance of pre-test post test and adjusted post test on muscular strength endurance of experimental group I experimental group II and control group (Scores in numbers)

Test	Exp. Group 1	Exp. Group II	Control Group	SV	SS	df	MS	F Value
Pretest Mean	34.30	34.10	33.90	Between	0.80	2	0.40	0.14
S.D.	1.73	1.58	1.51	Within	77.90	27	2.89	
Post test Mean	41.50	36.20	35.20	Between	284.60	2	142.30	63.36
S.D.	1.43	1.54	1.25	Within	59.70	27	2.21	
Adjusted Post test Mean	42.34	36.20	34.36	Between	258.92	2	128.96	264.78
				Within	12.71	26	0.49	

*Significant at .05 level of confidence.
(The table values required for significance at .05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively).

Table -A

Scheffe's post hoc test-mean differences on muscular strength endurance among three groups. (Scores in numbers)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
41.34	36.20	--	5.14*	0.18
42.34	--	34.36	7.95*	0.18
--	36.20	34.36	1.84*	0.18

*Significant at .05 level of confidence.

Table - B

Table-(B) post-hoc test comes about. The requested balanced final mean distinction for Muscular Strength Endurance of test gatherings I, II and control gathering were tried for importance at 0.05 level of certainty against classified interim esteem. The mean contrasts between test assemble I and test aggregate II, exploratory gathering I and control amass and test bunch II and control gathering were 5.14, 7.95 and 1.84 separately and it supposedly was more noteworthy than the classified interim estimation of 0.18. Thus every one of the examinations was huge.

The most vital purpose behind checking quality execution is to aid the assessment and movement of resistance-preparing programs. The measure of quality improvement relies on upon the underlying level of strong wellness, practice remedy, time accessible, and targets of the program. Standard appraisal of solid quality empowers legitimate assessment of the practice medicine and adjustments when proper. The rate of quality increment contrasts impressively amongst untrained and prepared people, with prepared people indicating much slower rates of change. A general audit of around 150 reviews uncovered that increments in solid quality, by and large, are roughly 40% in untrained people, 20% in reasonably prepared people, 16% in prepared people, 10%in propelled people, and 2%in first class people over periods going from 4 weeks to 2 years. In spite of the fact that the preparation projects, lengths, and testing strategies of these reviews contrasted extensively, these information demonstrate a specific incline towards slower rates of movement of quality advancement with preparing knowledge. Performing practices that include a low number of reiterations on a heap that is of high resistance adequately expands quality. (Dudley et al., 1985; Sale et al., 1990) It is of significance that competitors have elevated amounts of quality as well as perseverance. Hence many competitors' preparation programs include synchronous quality and perseverance preparing. Various reviews have been directed to research the conceivable obstruction impacts of performing quality preparing and continuance preparing simultaneously. Most have demonstrated that simultaneous quality and continuance preparing does in truth affect the advancement of quality or drive creation. Nelson (1990) directed a review on subjects in which one gathering; quality prepared 4 days/wk for 20 weeks while another gathering played out a similar routine additionally performed perseverance on that days. The outcomes demonstrated that albeit both gatherings indicated increments in constrain generation, yet the quality preparing bunch indicated more prominent upgrades. Similar outcomes were found by Kraemer et al. (1995). Subjects in both the quality and simultaneous gathering demonstrated increments in muscle quality, however the quality just gathering indicated essentially more prominent increments than that of the simultaneous gathering. In addition, in a 10-week think about by Hickson et al. (1980), subjects in both the quality and simultaneous gatherings demonstrated increments in constrain generation.

Be that as it may, while the quality gathering expanded compel for the whole 10 weeks, the simultaneous gathering showed a lessening in the most recent 2 weeks of the preparation program. These reviews display that preparation simultaneously for quality and perseverance affects the improvement of quality. Dudley et al. (1985),) additionally observed comparable outcomes in their reviews.

Table-(B) post-hoc test comes about. The requested balanced final mean distinction for Muscular Strength Endurance of trial gatherings I, II and control gathering were tried for centrality at 0.05 level of certainty against private interim esteem. The mean contrasts between test bunch I and test assemble II, trial aggregate I and control amass and test gather II and control gathering were 5.14, 7.95 and 1.84 separately and it apparently was more noteworthy than the private interim estimation of 0.18. Consequently every one of the examinations was huge.

Conclusion:

The simultaneous quality perseverance preparing has delivered critical change on quality continuance more noteworthy than control gathering of basketball Inter NIT men Players. Quality perseverance exceedingly supported to quality preparing before continuance preparing more prominent than quality preparing after

continuance preparing and control gathering to basketball Inter NIT men Players. Quality preparing after perseverance preparing likewise create little impact on strong quality continuance when contrast and control group

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An Analytical Study on Selected Physical Fitness Variables among Hyderabad District Basketball Players of Urban and Rural Areas

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Abstract

Physical fitness is now defined as the body's ability to function efficiently and effectively in work and leisure activities to be healthy, to resist hypo kinetics diseases and to meet emergency situations. The proposed objectives of the present level of Speed & Explosive Strength between Rural and Urban Basketball players of Hyderabad District. The hypothesis of the study is that there may not be any significant difference between rural and urban basket ball players in relation to Speed and explosive strength. The present study was delimited on the following aspects such as: Only 60 basket ball players (30 rural and 30 Urban) players were considered. The age of the subjects were ranged from 18 to 22 years. The physical fitness components i.e.- Explosive strength and speed considered for the present study. The mean score (2.38) of the Explosive Strength of physical fitness of rural basketball players is high than the mean score (2.31) of Urban basketball players of Hyderabad District. The mean score (7.79) of the speed component of physical fitness of rural basketball players is higher than the mean score (7.17) of Urban basketball players of Hyderabad District. On the basis of the analysis of data the Rural Basketball players were having better mean values among speed and Explosive strength than Urban Basketball players. Basketball Rural players performed better than the Urban male players.

Key Words: Speed, Explosive Strength & Physical Fitness

Introduction

Sports is all forms of usually competitive physical activity which, through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectators. Hundreds of sports exist, from those requiring only two participants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. Physical fitness is not an end in itself but it is a means to an end. It provides us with a basis for optimal physiological health and capacity to enjoy a full life. As we regularly need food, rest and sleep so do we need daily exercise for the maintenance of our physical capabilities. Physical fitness is a pre-requisite not only for excellence in competitive sport but is also closely related to defense and economic potential of a nation and for the quality of individual and social life. Physical fitness is a general concept defined in many ways by differing scientists. Here two major categories are considered: general fitness (a state of health and well-being), and specific fitness (a task oriented definition based on the ability to perform specific aspects of sports or occupations).

Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. Physical fitness used in two close meaning: General fitness (a state of health and well being) and Specific fitness (a task oriented

definition based on the ability to perform specific aspects of sports or occupation). Physical fitness is the capacity of the heart, blood vessels, lungs and muscles to function at optimum efficient. IN previous years, fitness was destined as the capacity to carry out the day activities without undue fatigue. Automation, increased leaisure time and changes in life style following the industrial revolution meant this criterion will be no longer sufficient. Optimum efficiency is the key. Physical fitness is now defined as the body's ability to function efficiently and effectively in work and leisure activities to be healthy, to resist hypo kinetics diseases and to meet emergency situations.

Objectives of the Study

The proposed objectives of the present research were follows.

- To measure the present level of Speed between Rural and Urban Basketball players of Hyderabad District.
- To measure the present level of Explosive Strength between Rural and Urban Basketball players of Hyderabad District.

Hypothesis of the study

- There may not be any significant difference between rural and urban basket ball players in relation to Speed.
- There may not be any significant difference between rural and urban basket ball players in relation to Explosive Strength.

Methods & Materials:

The present study was delimited on the following aspects such as: Only 60 basket ball players of Hyderabad district (30 rural and 30 Urban) players were considered. The age of the subjects were ranged from 18 to 22 years. The physical fitness components i.e.- Explosive strength and speed considered for the present study. The criterion measures were used to collect the data in a deal and systematic way to record in a correct unit and style for each test item. Explosive leg strength was measured by Standing Broad Jump test and scores were recorded in centimeters. Speed was measured by 50 Yards Dash and time was recorded to the nearest 1/100 of a second with the help of digital stopwatch. Statistical Techniques Used For the present study, the mean value, standard deviation, 't' test were applied to analyze the data.

Results and Discussion

Table 1 shows the Comparison of Explosive Strength Component of Rural and Urban Basketball male players of Hyderabad in Standing Broad Jump.

Variable	Rural		Urban		SEd.	t-ratio	Level of significant
	Mean	S.D.	Mean	S.D.			
Strength (Standing Broad Jump)	2.38	0.23	2.31	0.1	0.05	1.4	significant

Graph 1 showing Comparison of Explosive Strength Component of Rural and Urban Basketball players in Hyderabad district.

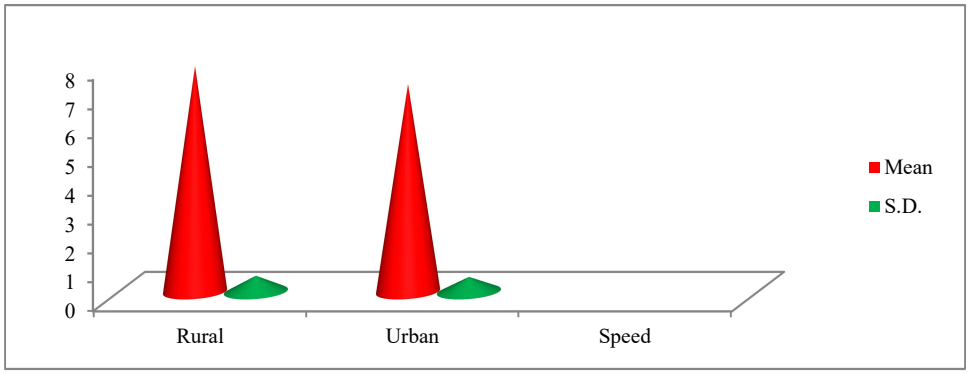
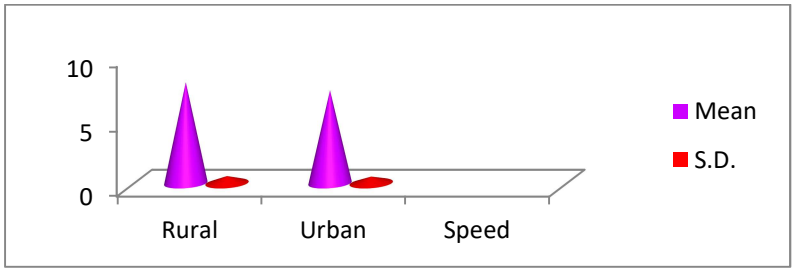


Table 2 showing the Comparison of Speed Component of Rural and Urban Basketball male players of Hyderabad in Standing Broad Jump.

Variable	Rural		Urban		S Ed.	t-ratio	Level of significant
	Mean	S.D.	Mean	S.D.			
Speed	7.79	0.55	7.17	0.51	0.16	3.88	significant

*Significant at .05 level

Graph showing Comparison of Speed Component of Rural and Urban Basketball male players of Hyderabad



Finding & Discussions:

The mean score (2.38) of the Explosive Strength of physical fitness of rural basketball players is high than the mean score (2.31) of Urban basketball players of Hyderabad District. However, the t-ratio is 1.4 which is significant at 0.05 level. High score better speed. It means that rural players of basketball players have better Explosive Strength of physical fitness than the Urban Basketball players of Hyderabad District. The mean score (7.79) of the speed component of physical fitness of rural basketball players is high than the mean score (7.17) of Urban basketball players of Hyderabad District. However, the t-ratio is 3.88 which is significant at 0.05 level. High score better speed. It means that rural players of basketball players have better speed of physical fitness than the Urban Basketball players of Hyderabad District.

Conclusion:

On the basis of the analysis of data the Rural Basketball players were having better mean values among speed and Explosive strength than Urban Basketball players. Basketball Rural players performed better than the Urban male players.

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Comparative Analysis of Self Confidence Level and Playing Abilities of Soccer Players

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Abstract

The aim of this study was to compare the self-confidence level and playing ability among soccer players. For this purpose initially, 200 participants were selected from Chennai District, Tamil Nadu, with the age group of 14 to 16 years old. A self-confidence questionnaire was given to the participants based on their responses five equal groups were formed by a simple random sampling method. Playing ability was measured with 10 points Judges rating scale. To analyze the data Analysis of covariance was used to find whether the difference exists or not. If existing follow-up tests were applied. All the statistics were applied at a 0.05 level of significance. The result of the study concluded that there is difference exist on a different level of self-confidence players in soccer playing abilities

Key words: Playing ability, Self-confidence, Soccer players.

Introduction

One of the most popular sports in the world is soccer (Tumilty, 1993). People who succeed to the highest level are frequently distinguished from others who are less successful by psychological factors (Morgan, 1979; & Morgan, 1979). In soccer as in other sports, sports administrators and coaches have sought to identify the psychological traits that set apart exceptional athletes from their counterparts (Morris, 2000).

Recent studies have used numerous personality evaluation tools to try to determine the psychological traits of different sports-related demographics. Soccer players, sportsmen, and players' performance levels are largely determined by psychological factors (Tufekcioglu et al. 2014).The top athletes tend to have better levels of self-confidence, more task-oriented focus, control over their anxiety levels, more determination and commitment, according to research into sports psychology and performance (Woodman, Lew, 2003). Self-efficacy or self-concept may have an impact on motivation in terms of the amount of effort and persistence a performer exhibits when working on a task (Bandura, 1977). This study designed to find the level of self confidence influence in the playing ability among the soccer players

Methodology

To select the participants Agnihotri‘s Self Confidence Inventory (Agnihotri, 1987) given to 200 soccer players used to assess the self confidence level among the players. Based on the 200 participants response 150 participants were randomly selected and classify as Very high self-confidence group (VHSCG) (score 7 and below), High self-confidence group (HSCG) (8-19), Average self-confidence group (ASCG) (20-32), Low self-confidence group (LSCG) (33-44) and very low self-confidence group (VLSCG) (45 and above). From the initial assessment by

using simple random sampling method group equalised with 30 participants such as VHSCG n=30, HSCG n=30, ASCG n=30, LSCG n=30, and VLSCG n=30. Age of the subject range between 14 to 16 years old boys. The participants of the study from Chennai District, Tamil Nadu. For this analysis playing ability were selected as dependent variables. It was measured with 10 points judges rating method. To analysis the data Analysis of Variance (ANOVA) were used at 0.05 level of significant. If difference exists follow-up test (Post hoc test) were used).

Analysis of data

Table 1: Represent the Descriptive statistics Mean and Standard Deviation (SD) value

Variable	N	Mean	SD
VHSCG	30	8.9333	0.78492
HSCG	30	7.4000	0.49827
ASCG	30	5.4333	0.50401
LSCG	30	4.5667	0.50401
VLSCG	30	4.5000	0.50855

Table 2: Represent the F ratio value on playing ability among the groups

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	451.533	4	112.883	346.048	0.000
Within Groups	47.300	145	0.326		

Table 2 reveals that the obtained f value 346.048 is greater than the f table value 2.434 with df f(4 and 145). Statistical results clearly mention that there is a significant difference exists among the groups such as VHSCG, HSCG, ASCG, LSCG, VKSCG among the soccer players in the age group of 14 to 16 years old boys.

Table 3: Scheffe's Post hoc test on Playing ability

VHSCG	HSCG	ASCG	LSCG	VLSCG	MD	CI
8.9333	7.4000				1.53333*	
8.9333		5.4333			3.50000*	
8.9333			4.5667		4.36667*	
8.9333				4.5000	4.43333*	
	7.4000	5.4333			1.96667*	
	7.4000		4.5667		2.83333*	0.46
	7.4000			4.5000	2.90000*	
		5.4333	4.5667		.86667*	
		5.4333		4.5000	.93333*	
			4.5667	4.5000	.06667	

Table 3 reveals that the paired wise mean difference (MD) such as VHSCG and HSCG is 1.53>0.46, VHSCG and ASCG is 3.50>0.46,VHSCG and LSCG is 4.37>0.46,VHSCG and VLSCG is 4.43>0.46,HSCG and ASCG is 1.97>0.46,HSCG and LSCG is 2.83>0.46,HSCG and VLSCG is 2.90>0.46, ASCG and LSCG is 0.87>0.46,ASCG and VLSCG is 0.93>0.46,& LSCG and VLSCG is 0.07<0.46 respectively.Statistical findings indicate VHSCG are better in playing ability when compare with all other group such as HSCG, ASCG, LSCG, VKSCG. However, there is a no difference between the LSCG and VLSCG among the soccer players on playing abilities. Finding also supported with previous findings such as Sheldon, & Eccles, (2005); Singh, & Singh, (2016); Needhiraja, & Kalidasan, (2013) and Otake, et al. (2006).

Conclusion

The statistical results concluded that the players who had Very high level of self confidence are good in their playing abilities. However players below the average level in the self-confidence their playing abilities also low when compare with other group of players

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Impact of Swiss ball Exercise Training on Selected Physical Fitness Parameters among High School Girls Hand Ball Players

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Abstract
This study was designed to investigate the impact of Swiss ball exercise on selected physical fitness parameters of adolescent girls. To achieve the purpose of the study 30 adolescent girls' basketball players were selected from govt. high school; girls were randomly selected as subject from Mahabubnagar district, Telangana The subjects was randomly assigned to two equal groups (n=20). Group- I underwent Swiss ball exercise training (SE) and Group - II was acted as control group (CG). The training was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of six weeks. The control group was not be given any sort of training except their routine work. The physical fitness parameters were muscular strength (sit ups), flexibility (sit and reach), balance (stoke balance test), agility (4x10 shuttle run). The data collected from the subjects was statistically analyzed with't' ratio to find out significant improvement if any at 0.05 level of confidence. The result of the muscular endurance, flexibility, balance, and agility improved significantly due to impact of Swiss ball exercise with the limitations of (diet, climate, life style) status and previous training the result of the present study coincide findings of the investigation done by different experts in the field of sports sciences. Swiss ball exercise training significantly improved muscular strength, flexibility, balance, and agility of high school girls hand ball players.

Keywords: Swiss ball exercise, muscular endurance, flexibility, balance, and agility

INTRODUCTION:-

Hand ball is a very physically demanding sport. Muscle strength important handball because while gaining strength, speed and endurance you are also tendon and ligaments which will reduce the changes of injuries, such as sprain and tears. The Swiss ball, otherwise called an activity ball or an exercise center ball is a preparation help pointed essentially at the extending and reinforcing of the stomach, crotch, lumbar (lower) back, and upper leg muscles of the body. Swiss balls are inflatable, and they are normally filled roughly 80-90%. The ball is developed from a thick rubber treated compound, accessible in varying sizes. For ideal impact, a Swiss ball should stand roughly 2 in (5 cm) over the client's knee from the surface. Arnheim et al., (2006). One of the main benefits of strengthening your core is increased balance and in stability. A strong core consists of muscles that work together in coordination to stabilize and support your body. Having strong core stabilizers enables you to maximize strength in your arms and legs. Upper body strength and even fingertip strength all dictate how well you shoot the handball. Developing muscle strength endurance, wrists and fingertips will allow you to shoot the ball from further away with greater accuracy and less effort. Grip strength is extremely important for hand ball players and should be a focal point of a player's hand ball training, simply stated, the stronger your hands are the better you are going to be at handling the basketball because stronger hands will give you a better feel for the ball and more control over it. The hypothesis argued in this

paper is that high school girl's handball players can significantly increase the physical fitness parameters of muscular endurance, flexibility, balance, agility by combining normal technical and tactical sessions with a Swiss ball exercise program over a consecutive 6 weeks period. Therefore, the object of this study was to investigate the changes in the parameters produced during 6 weeks of Swiss ball exercise training in 20 high schhol girls' hand ball players.

METHODS

EXPERIMENTAL APPROACH TO THE PROBLEM

The purpose of the study was to Investigate Impact of Swiss ball Exercise on Selected Physical Finess Parameters of High School Girls Hand Ball Players the test subject was forty high school girl students(N= 40) High school girls basketball players form govt. high school, girls were randomly selected as subject from Mahabubnagar district, Telangana. Were divided into two equal groups and named Group–I Swiss ball exercise training group (N=20) and Group–II as control group (N=20), each group consisting of twenty (N=20) subjects. The respective training was given to the experimental group the 3 days per week alternate days i.e. Monday, Wednesday and Friday for the training period of six weeks. The control group was not given any sort of training except their routine.

Design

The evaluated physical fitness parameters muscular Endurance assessed were by sit ups test and the unit of measurement was in counts, flexibility were assessed by sit and reach the unit of measurement was in centimeters and balance were assessedby stoke balance test the unit of measurement was in seconds and agility were assessed by 4x10mts shuttle run the unit of measurement was in seconds. The parameters were measured at baseline and after 6 weeks of Swiss ball training wereexamined

TRAINING PROGRAMME:-

The training programme was lasted for 45 minutes for session in a day, 3 days in a week for a period of 6 weeks duration. These 45 minutes included 10 minutes warm up, 15 Swiss ball exercises for 25 minutes and 10 minutes warm down. Every three weeks of training 5% of intensity of load was increased from 65% to 80% of work load. The volume of Swiss ball exercise training is prescribed based on the number of sets and repetitions.

STATISTICAL ANALYSIS:-

The collected data on above said variables due to the impact of Swiss ball exercise was statistically analyzed with't' test to find out the significant Improvement between pre and post test. In all cases the criterion for statistical significance was set at 0.05 level of confidence. ($P< 0.05$)

Table 1: Computation of t ratio on selected physical fitness parameters of high school girl's handball players on experimental group

Experimental Group						
		Mean	**N**	**Std. Deviation**	**Std. Error Mean**	**T ratio**
Muscular Endurance	Pre test	23.70	20	0.86	0.25	12.24
	Post test	27.00	20	1.36	0.25	
Flexibility	Pre test	15.88	20	0.65	0.20	16.58
	Post test	19.40	20	19.44	0.20	

Balance	Pre test	4.30	20	0.71	0.90	12.37
	Post test	5.40	20	0.73	0.09	
Agility	Pre test	25.36	20	0.95	0.12	15.33
	Post test	23.31	20	0.90	0.12	

*significant level 0.05 level (degree of freedom 2.13,1 and 13)

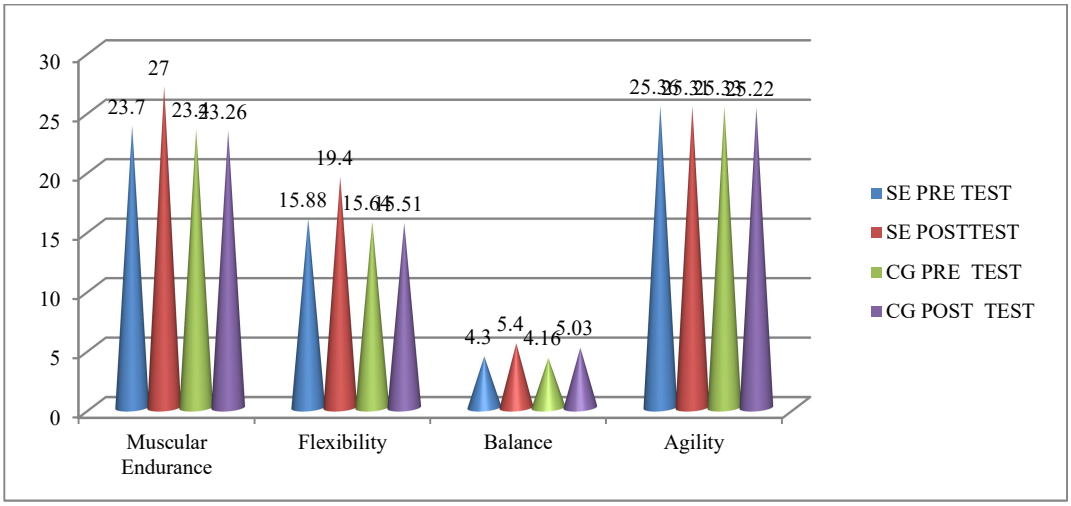
Table I reveals the computation of mean, standard deviation and 't' ratio on selected physical fitness parameters, namely muscular strength, flexibility, balance, and agility of experimental group. The obtained't' ratio on muscular strength, flexibility, balance, and agility were 12.24, 16.58, 12.37and 15.33 respectively. The required table value was 2.13 for the degrees of freedom 13 at the 0.05 level of significance. Since the obtained t values were greater than the table value it was found statistically significant.

Table 2: Computation of T Ratio on Selected Physical Fitness Parameters of High School Girls Hand Ballplayers on Control Group

		Experimental Group				
		Mean	**N**	**Std. Deviation**	**Std. Error Mean**	**T ratio**
Muscular Endurance	Pre test	23.40	20	0.82	0.10	1.86
	Post test	23.26	20	0.87	0.10	
Flexibility	Pre test	15.64	20	0.61	0.05	2.05
	Post test	15.51	20	0.65	0.05	
Balance	Pre test	4.16	20	0.70	0.80	1.45
	Post test	5.03	20	0.63	0.80	
Agility	Pre test	25.33	20	0.92	0.05	1.67
		25.22	20	1.00	0.05	

*significant level 0.05 level (degree of freedom 2.13,1 and 13)

Table II reveals the computation of mean, standard deviation and 't' ratio on selected physical fitness parameters, namely muscular strength, flexibility, balance, and agility of experimental group. The obtained' ratio on muscular strength, flexibility, balance, and agility were 1.86, 2.05, 1.45 and 1.67 respectively. The required table value was 2.13 for the degrees of freedom 13 at the 0.05 level of significance. Since the obtained t values were greater than the table value it was found statistically significant



Discussion and Findings

The present study experimented the impact of 6 Swiss ball exercise significantly improved the selected Physical fitness parameters of High school girls hand ball players. The results of this study indicated that Swiss ball exercise is more efficient to bring out desirable changes over the muscular endurance, flexibility, balance, agility of a high school girls basketball players. The finding of the present study had similarity with the findings of the investigators referred in this study. Based on the studies in the literature that suggest that exercises such as sit ups, double leg lowering, and push-ups performed on a Swiss-ball increase the level of muscular activity of the abdominals and oblique's more than curl-ups, double leg lowering, and push-up performed on a stable surface (Vera Garcia et al., 2000).) [1] examined the study was to find out the effect of swiss ball training significant improvement on agility among netball players. Nurten (2019) [2] Investigated the effects of core strength training on balance, explosive force and agility. Ajit (2017) [3] conduced the effects of wobble board and swiss ball training significant improvement on Balance among school students. Sarika (2019) [4] examined the effects of six weeks Swiss ball exercises & plyometric training techniques on speed & agility in inter-university level male field hockey players. Wonjong (2017).

Conclusions

It was concluded that 6 weeks of Swiss ball exercise significantly improved the muscular endurance , flexibility, balance, agility of the high school girls hand ball players. From the findings it is postulated that the Swiss ball exercise is suitable mode to bring out desirable changes over physical fitness parameters of high school girls hand ball players.

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Analysis of Motor Abilities Differences among Kabaddi and Kho-Kho Players

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Abstract:

The specialty of Indian games is to make players light bodied, agile, ready-witted, supple and daring. The games Kho-Kho and Kabaddi are most popular in rural India.The objective of this study is to analyze motor ability differences among kabaddi and kho-kho players of Govt. college of Physical Education, Domalguda, Hyderabad Telangana state. The selected variables for this study were motor ability: Muscular Strength, Muscular Endurance and Speed. These variables were tested before and after 12 weeks of plyometric training. There was a significant difference in mean between kabaddi and kho-kho players on motor abilities, the significance was .000 at $p<0.05$ level.

Keywords: Plyometric, speed, Muscular strength, Muscular endurance.

Introduction:

Most of young person's like sport and other forms of physical activity. They are also concerned with the nation's health and fitness. As a result many young persons are exploring the field of physical education and sport as a possible career. As part of this exploration process they want to know the realm of employment opportunities in physical education and sport and if they can contribute to this profession. They also want to know the developing trends in the field, and what the future holds for the profession and the personal and professional qualities that will help them to attain success if they choose physical education and sport as a career.

Kho-Kho, Kabaddi, Yogasana, Malkhamb, Lathi, Phari-gadga, Atya-Patya, Langadi, Viti-dandu, are peculiar indigenous activities preserved and handed over to the present generation. The specialty of Indian games is to make players light bodied, agile, ready-witted, supple and daring. Kho-Kho is one of the most popular traditional sports in India. Kho-Kho and kabaddi is an indigenous game. It is based on the natural principle of physical development. It is vigorous and fosters a healthy combative spirit among the youth. It is not merely running with speed but also a natural instinct to overtake, to pursue, to defence and offensive raids.

The individual who is physically fit has proportionate developed body and the posture i.e usually good. One performs the activities with a high degree of motor proficiency. It is true that any kind of physical work in day today life improves physical fitness. It depends upon the intensity of the' working does. Plyometric exercises are great for increasing overall muscular (explosive) strength and speed, giving you an acceleration and power advantage over the competition. They teach muscles to produce maximum force in a minimum amount of time by training the stretch reflex of the muscles being used. In this research study the scholar had experimented with plyometric training on motor abilities of kho-kho and kabaddi players.

Methodology

Selection of Subjects:

The present study was conducted on forty (40) Govt. College of Physical Education students ranging age between 19-21 years. The subjects were randomly selected and training was conducted at Domalguda, Hyderabad, Telangana, India. The subjects were divided into four equal groups namely: (1) First group was Kho-Kho Experimental Group (N=10) (2) second one was Kho-Kho Control Group (N=10),(3) Third group was Kabaddi Experimental Group (N=10) and (4) fourth kabaddi control group(N=10).

Table No.1 Physical characteristics results between Experimental and Control groups

Sl.No	Name of the group	Age(Yr)	Height(cm)	Weight(kg)
1	Kho-Kho Experimental Group	20.70	166.80	56.10
2	Kho-Kho Control Group	22.10	165.30	63.20
3	Kabaddi Experimental Group	20.90	166.20	59.90
4	Kabaddi Control Group	20.70	166.80	57.10

Selection of Variables:

The research scholar experimented with plyometric training for the improvement of motor abilities. The Administrating feasibility in terms of availability of instruments, time factor from point of view of subjects were considered for the collection of data. The following variables were selected. **The motor ability variables**: Speed, Muscular strength and muscular endurance.

Research Design:

The experimental groups were administered 12weeks duration with different types of Plyometric exercise program for the improvement of motor abilities among kho-kho and kabaddi players of Physical Education trainees, Hyderabad. A proper warming-up period of 10 minutes duration was given before training sessions (3 days per week). The control group was not allowed to participate in any of the training programme except their daily routine practice. Measurements of motor ability variables were taken before and after treatment with the informed consent of all subjects. The training load was increased in a progressive manner, after every two weeks. The motor fitness data was collected by administering 50mts Run test for speed, standing broad jump test for Muscular (explosive) leg strength and push-ups test for muscular endurance.

Statistical Technique:

After the data collected, they will be processed and critically analyzed to draw exact conclusions. In the present study, the collected data were analyzed using t ratio to find the mean differences and ANOVA was used to test the variance between groups. The significance was set at 0.05 levels.

3. Results

Table No.2 Mean values of research variables between Experimental and Control groups.

		Kho-Kho Players						Kabaddi Players					
Group		50mt Run		SBJ		Push-Ups		50mt Run		SBJ		Push-Ups	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Exp.	Mean	6.98	6.57	2.54	2.71	29.9	32.4	7.33	7.22	2.24	2.36	25.3	29.4
	M.I%	5.87%		6.69%		8.36%		1.50%		5.35%		16.20%	
Cont.	Mean	7.18	7.18	2.24	2.23	28.7	27.2	6.98	7	2.54	2.55	29.9	30.9
	M.I%	0%		-0.44%		-5.22%		-0.28%		0.39%		3.34%	

Above table shows the mean and Magnitude of increase(M.I) values of motor ability variables between pre-test and post-test of plyometric training and control groups. The experimental subjects were treated with plyometric exercises for twelve weeks training and control group subjects did not treat any specific training except regular respective game activities. After post test experimental subjects' motor ability variable were improved but in the case of control group subjects motor abilities did not find much difference. The magnitude of increase in speed (5.87%) and muscular strength (6.69%) was high in Kho-Kho players than kabaddi but in muscular endurance was high (16.20%) in kabaddi players than Kho-Kho players.

Graph No.1 M.I differences between Experimental and Control groups

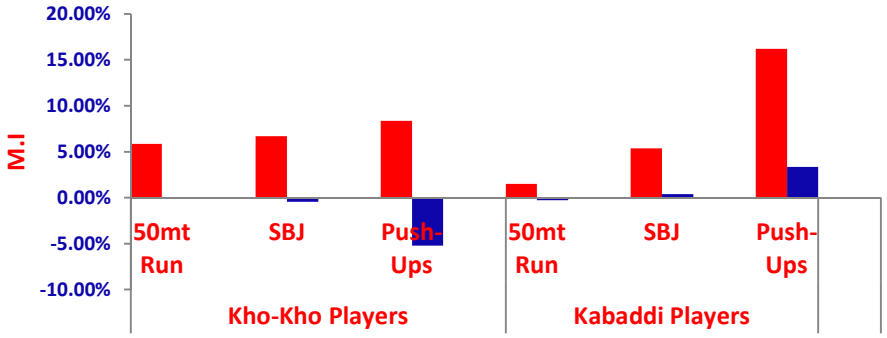

Table No.3 Statistical results between experimental and control group.

Groups	Push ups			SBJ			50M Run		
	t	sig	F	t	sig	F	t	sig	F
Kho-Kho Experimental	-11.18	.000	.864 .469	-9.027	.000	10.166 .002	9.313	.000	5.852 .002
Kho-Kho Control	6.708	.000		1.26	0.239		-0.921	0.381	
Kabaddi Experimental	-22.841	.000		-11.981	.000		17.367	.000	
Kabaddi Control	0			0			-11	.000	

Above table shows the statistical significance between pre test and post test on motor abilities between experimental and control groups. The significant difference was found between pre test and post test among kho-kho and kabaddi players. Statistical significance was .000, $p<0.05$ level. However no significant difference in control groups except push-ups. The one way ANOVA tested the differences between the means of four groups and found

there was significant difference in speed and muscular leg strength but no significance difference in muscular endurance among four groups.

Conclusions: the following conclusions are drawn from the present research work. The analysis explains through statistical interpretations were:

1. Muscular endurance was significantly improved among kabadddi players than kho-kho players through plyometric exercise.
2. Explosive leg strength was improved in kho-kho players than kabaddi players with plyometric training.
3. Remarkable speed improvement was found in kho-kho players than kabaddi players.

Recommendations:

1) Same type of research may be conducted for female kho-kho and kabaddi players.
2) The scholar also recommended that research may be conducted on physiological factors between kho-kho and kabaddi players.
3) The scholar further recommends that there is a correlation study between motor abilities and playing abilities of kho-kho and kabaddi.

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A study of exercises and certain yogic practices on health related physical fitness".

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Introduction

In the contemporary living style, physical fitness, health and nutrition seem to have gained a place of priority. One of the most important goals of physical education program is to develop physical fitness. Physical fitness is considered as a pre-requisite to healthful and recreational living and is not an end into itself. Physical fitness can be health related in as much as it preserves healthful function of the body over extended periods of time in adults‟ life. Health related physical fitness components are those developments which are related to certain diseases. Physical education acts as an intermediary between health and fitness, while the degree of physical fitness depends on the individual's state of health, constitution, present and previous activities.

Yoga

In Patanjali's Yoga-darsan an asana is defined as Sthirasukhamasanam (any posture that can be maintained with comfort is an 'asana'. Prayatnasaithil yanantsamapattibhyam (lack of effort and contemplation as if it is never going to end characterize it). Apart from contraction and relaxation, there is third state of muscle which is known as the 'Catch' state. It is the ligament like contracted state of muscle which has been well studied biologically in the bivalve mollusks. It is characterized by maintenance of high tension without consumption of energy. A catch state could be very useful for a yogi which in to stay in a single posture for prolonged period for other advanced practices.

Statement of the Problem

The purpose of this study was to investigate the response "A Study of Exercises and Certain Yogic Practices on Health Related Physical Fitness".

Methodology

Selection of Subjects

Eighty subjects of Arts and Engineering class students of Andhra University, Visakhapatnam, Andhra Pradesh were selected for the study. The average age of subjects were 18-23 years. The subjects were divided into four groups. Experimental groups A, B and C and a control group D, each group of 20 subjects. The subjects were equated before collecting the data. The experiment was conducted for a period of 12 weeks, excluding the period required for measurement in the criterion measures. It was begin and end within the experimental period. The experiment groups A done 12 yogic practices and pranayams. The experimental group B performed exercise program whereas „C‟ grouped done combined activities. The control group "D‟ was consists of daily routine. The

performance of all the subjects of AAPHERD health related physical fitness test was recorded prior and after the experimental period.

Criterion Measure:

The AAPHERD Health related physical fitness test contains four items intended to assess an individual's status on four components of health related physical fitness, brief statements indicating the reasons for their selection and the test items chosen to represent them.

Subscapular Skinfold

Procedure: Sub scapular skin fold thickness is a measure of subcutaneous adipose tissue and skin thickness on the posterior aspect of the torso. The sub scapular skin fold was picked up on the diagonal, inclined inferio-laterally, approximately 45 degrees to the horizontal plane in the natural cleavage line of the skin. The site was just inferior to the inferior angle of the scapula. The caliper jaws were applied one-centimeter inferio-lateral to the thumb and finger raising the fold. **Scoring:** Each measurement was taken three consecutive times and the median score was recorded to the nearest 0.5 millimeters.

Experimental Design

The subjects were assigned to four groups by random sampling procedure as suggested by Robert and James (l969).Training program for experimental groups *'*A*'*, „B‟ and „C‟ consisted of yogic practices, exercises and combined program. The controlled group „D‟ consisted of daily routine. The performance of subjects in AAPHERD health related physical fitness test was recorded prior and after the experimental period.

Statistical Procedures

To establish the comparative effect of the yogic practices, exercises and health related physical fitness, the data were examined by applying analysis of co-variance. The level of significance was .05 percent.

Analysis of Data and Result of the Study

Table – I: Significance of Difference between Pre-Test and Post Test Means Of Experimental Groups and the Control Groups in Subscapular Skinfold

Group	Pre-Test	Post-test	Mean difference	DM	't' ratio
Asanas	9.09	7.24	1.86	0.399	-4.65*
Exercise	9.46	7.76	1.71	0.19	-9.32*
Combined	10.26	8.46	1.81	0.17	11.29*
Control	10.32	9.85	0.46	0.50	0.94

*Significant difference at .05 level

Table – 2: Analysis of Covariance of the Means of Three Experimental Groups and the Control Group in Subscapular Skin Fold.

	GROUP				Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F
	Asanas	Exercise	Combined	Control					
Pre-Test Mean	9.086	9.456	10.256	10.32	Between	21.9029	3	7.30793	0.67
					Within	836.623	76	11.0082	
Post-Test Mean	7.236	7.756	8.46	9.846	Between	76.795	3	25.5932	2.48*
					Within	785.915	76	10.3409	
Adjusted Post - Test Mean	8.7036	7.8644	7.368	9.7430	Between	30.2763	3	10.0927	30.29*
					Within	159.98	76	2.1329	

*Significant at 0.05 level N=20, B: Between group variance , W: Within group variance, F ratio needed for significance at 0.05 level of confidence 2. 74.

The Analysis of co-variance for Sub scapular skin fold indicated that resultant F ratio of 0.67 was not significant in case of pre-test .Means indicating that initial means differences among the group were not significant. The post test means of all the four group yielded of F ratio 2.48 which was also not significant. The differences between the adjusted final means for four groups were found significant as the obtained F ratio was 30.29. The F ratio needed for significance at .05 level of confidence was 2.74. As the differences between the adjusted final means for all groups was found significant, the data was further subjected to scheffe's test to see, which group mean is greater than the other. Differences between the paired adjusted final means are shown in the table-9 Sub scapular skin fold.

Table-3: Paired Adjusted Final Means And Differences Between Means For The Three Experimental Groups And The Control Group Subscapular Skin Fold.

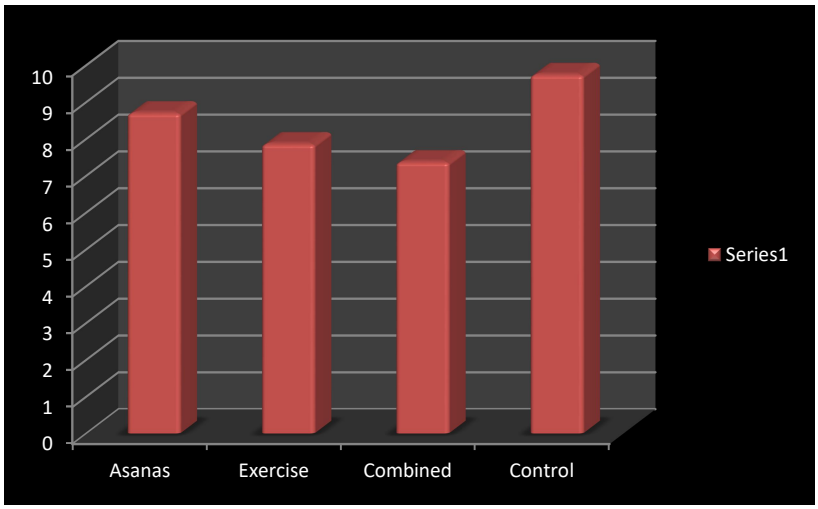
Mean				Difference between means	Critical difference for adjusted mean
Asanas	Exercise	Combined	Control		
8.71	7.87			0.840	0.915
8.71		7.38		1.337*	0.915
8.71			9.75	-1.031*	0.915
	7.87	7.38		0.498	0.915
	7.87		9.75	-1.879*	0.915
		7.38	9.75	2.375*	0.915

Significant at 0.05 level

Comparing the mean difference with critical differences, it is seen that combine yogic exercise program is more effective than yogic practice program. However exercise program is having insignificance difference in fat reduction of sub scapular region with yogic program and combined exercise yogic program

FIGURE-1

Comparison of paired adjusted final mean scores and difference between means for the three Experimental groups and the control group in Subscapular skin fold.



The result of study shows that yogic practices in combination with exercise program are more effective on performance of subjects on various test items of the study than the individual program of exercise. This leads us to partially accept our hypothesis.

Discussion of Findings

The analysis of data revealed that the three experimental groups trained by exercises, yogic practices, and combined exercises and yogic practices combined exercise yogic program was also more effective that asanas program in reduction of subscapular skin fold thickness. The control group did not show any significant increase in the performance of health related physical fitness. The result of the study confirm the notion that exercise and yogic practices improves health related physical fitness, when administered according to the set principles of training in a progressive manner and perform in proper way.

Combined exercise yogic program was also more effective that asanas program in reduction of triceps and subscapular skin fold thickness. The present findings suggest that exercises with the yogic practices together can be best method of decreasing the body composition. Our finding are supported by the finding of Ulter et al. (1998), American Heart Association (2006), Miller et al. (1997), Verketreddy (1990). According to different studies, with yogic practices and pranayama one can expect an additional loss amounting to between 0.2 lbs depending on the frequency and duration on the yogic practices, pranayama perforemed.

Athlete's physical education teacher, coaches, and sports scientists always researches ways to improve performance through efficient, effective procedures. Not only does this study reinforce the effectiveness of exercises and yogic practices techniques for increasing the health related physical fitness but may also provide information on ways in which the time can be saved and at the same time the health related physical fitness can be improved effectively .

Conclusions:

Based on the understanding after deliberate discussion with experts and the supervisor and also in light of the above understanding following conclusions were finally drawn:-

1. There is significant difference in pre and post test mean values of body composition (subscapular skin fold) for yogic practices, combined group as the obtain t-values are -4.64,-9.31, and 11.28 respectively at .05 level of significance.
2. The post test means of the entire four group yielded F ratio 0.71 which was also not significant. The differences between the adjusted final means of body composition (sub-scapular skin fold) for four groups were found significant as the obtained F ratio was 30.28. The F ratio needed for significance at .05 level of confidence was 2.74.
3. It is concluded that yogic and exercise programs significantly improve the health related physical fitness.
4. The yogic program is more effective than exercise program in the health related physical fitness.
5. A combined exercise yogic program is more effective in health related physical fitness than the individual programs of yoga and exercise.

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Effect of Resistance Circuit and Combined Training Programme on Speed among Football Players

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Abstract

The purpose of the study was to find out the effect of resistance circuit and combined training programme on speed among football players. To achieve the purpose of the study sixty (N=60) male football players were randomly selected. The age group of the subject was 17 to 20 years. Selected subjects were equally divided into four groups namely control, resistance, circuit and combined training group. Control group was not given any type of training. Experimental group was given resistance training, circuit training and combined resistance, circuit training for a period of 12 weeks. The pre-test and post-test data on speed was collected on all the groups before and after the experimental training. Collected data was analysed by using ANCOVA to find significant difference among mean at 0.05 level of confidence. It was concluded that experimental groups resistance training, circuit training, combined resistance and circuit training groups significantly ($p \leq 0.05$) improved the speed compared to control group.

Keywords: Resistance training, circuit training, combined training and football players.

Introduction

Football is one of the most popular and complicated games in the world. To be successful, players must possess technical, tactical, and physical skills. Football performance has frequently prioritised technique and tactics over physical assets like endurance, strength, and speed. The ideal pro football player will be able to play the entire game with a high degree of intensity. In football, speed and power are essential performance elements. Even though sprinting and high-intensity activities only account for 8% to 12% of the total running distance, these skills are quite important. Maximal-sprint circumstances are likely to be especially crucial during this crucial period of the match. The control of the ball, regaining possession, defensive play, corner kicks, and goal-scoring attacks all entail both horizontal acceleration (sprinting) and vertical acceleration (jumping strength).

In games like football, which need sudden changes in direction and acceleration as well as leaping, speed is crucial. A major technique for enhancing athletes' speed and explosive power is resistance training. The effects of resistance training on the leg extensor muscles have been shown to improve the explosive power, vertical jump, and speed of professional football players. Debnath et al. (2021) in his research, Effect of complex training on speed variables of men football players noticed considerable gains in speed parameters in male soccer players. In another study, Eskandar Taheri et al. (2014) investigated eight weeks of resistance training effect on the speed and explosive power of male soccer players and found that speed and explosive power significantly improved.

Purpose of the study

The goal of this research is to determine the progress in development of speed in young footballers. A soccer player's performance may be significantly impacted by resistance training combined with circuit training. When combination training is used, high-intensity activities get better and speed up play until the game is over.

Thus, this investigation will provide proof of the impact of resistance training combined with circuit training on college football players' speed performance.

Methodology:

To achieve the purpose of the study 60 collegiate football players were selected in the age group of 17 to 20 years. Selected subjects were equally divided into four group namely experimental group I resistance training group (RTG) (n = 15), experimental group II circuit training group (CTG) (n = 15), experimental group III combined resistance and circuit training group (RCTG) (n = 15) and a control group (CG) (n = 15). The control group performed only the game practice during the study. Experimental group was given resistance training, circuit training and combined resistance, circuit training for a period of 12 weeks. The training programme included warm up (10 mins), work out (40 minutes) and cool down (10 mins) sessions for a duration of 40 min in three days of a week in the morning. Other three days' experimental group practiced the game. The data were analysed by ANCOVA to determine the difference between initial and final mean for experimental and control group at 0.05 `level of significance. The formula was applied at 95% Confidence Interval and significant p values set at 0.05. The results were taken to be significant at $p \leq 0.05$.

Training Schedule

Experimental Training Group	**Name of the Exercise**	**Week**	**1-4**	**5-8**	**9-12**
		Load	**60% 1RM**	**70% 1RM**	**80% 1RM**
		Sets	**2**	**2**	**2**
Resistance Training (RTG)	1. Jumping jacks with dumbbells 2. Russian twist with weights 3. Overhead medicine ball throw 4. Lunches with dumbbells 5. Zig zag runs with weight jacket 6. Overhead shoulder press 7. Squat with dumbbells 8. Bent over rows with dumbbells 9. Step ups with dumbbells 10. Heel raise with weight	Reps.	10	8	6
Circuit Training (CTG)	1. Skipping 2. Push ups 3. Cross over knee tugs 4. Zig zag running 5. Triceps Dips 6. Wall sit 7. Planks 8. Side shuffles run 9. Running Climbers 10. Agility Hurdle jumps	Duration	20sec.	30sec.	45 sec.
Combined Resistance & Circuit Training (RTCG)	(Monday, Wednesday & Friday) in a week for first five (06) weeks for resistance training along with Group-I (RTG). (Tuesday, Thursday & Saturday) in a week for next five (06) weeks for circuit training along with Group-II (CTG).				

Pre-test and post test data was collected on control group and experimental group before and after the ten weeks of experimental training by using following authenticated tests,Speed - 50 Mts. Dash (Pargonkar, 2002)

AnalysisTable II showing the analysis of covariance on Speed,

Analysis of covariance on speed of control and experimental group

Group		RTG	CTG	RCTG	CG	SoV	SS	Df	MS	F ratio
Pre Test	Mean	7.66	7.59	7.58	7.57	BG	0.106	3	0.035	0.218
	SD	.4194	.4356	.3637	.3874	WG	12.313	76	0.162	
Post Test	Mean	7.32	7.26	7.12	7.55	BG	1.915	3	0.638	4.605*
	SD	.4362	.4417	.2866	.2946	WG	10.536	76	0.139	
Adjusted Post Test Mean		7.27	7.27	7.14	7.58	BG	2.097	3	0.699	38.29*
						WG	1.369	75	0.18	
Mean Gains		0.34	0.33	0.46	0.02					

*Significant at 0.05 level 3 and 76 (df) =2.73, 3 and 75 (df) =2.73

The attained F-ratio for the adjusted post-test means of 38.29 was greater than the table F-ratio value of 2.73. Hence, the adjusted post-test means F-ratio was significant at 0.05 level of confidence for the degrees of freedom 3 and 75. This evidenced that there was a significant difference among the means due to the experimental trainings on speed.

There were significant differences recorded in the test results. Hence, the data was exposed Scheffe's post hoc test for post hoc analysis. The results are given in the Table III.

The Scheffe's Test For The Differences Between The Adjusted Post-Test Means On Speed

Adjusted Post-test Means				Mean Difference	Required CI
Resistance Training	Circuit Training	Combined Training	Control Group		
7.27	7.27	---	---	0.001	0.26*
7.27	---	7.14	---	0.13	
7.27	---	---	7.58	0.31*	
---	7.27	7.14	---	0.14	
---	7.27	---	7.58	0.31*	
---	---	7.14	7.58	0.44*	

Table III showed that adjusted post-test mean difference of resistance training and control group, circuit training and control group, combined training and control group were 0.31, 0.31 and 0.44 respectively. They were greater than the confidence interval value 0.26 at 0.05 level which indicates that there were significant differences among resistance training and control group, circuit training and control group, combined training and control group on speed.

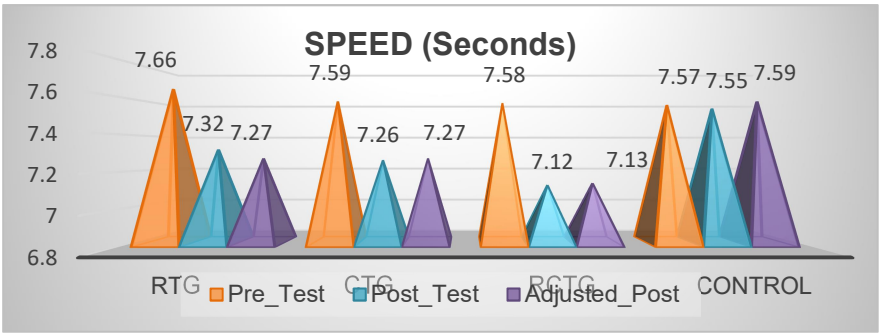

Fig1. Showing speed mean values of pre-test and post-test of control and experimental groups (secs.)

Discussion on findings:

The post hoc test analysis through Scheffe's Confidence test proved that due to resistance training, circuit training, combined resistance and circuit training groups improved speed than the control group and the differences were significant at 0.05 level. Further, the post hoc test clearly indicating that combined resistance, circuit training group was better than the resistance training and circuit training in improving the speed of the men football players.

In the recent times resistance and circuit training is offered as a better method for developing speed. The results and discussions of the present study proved that the combined resistance and circuit training procedure was beneficent for improving the speed of collegiate football players and this study was supported the study conducted by Kurian Abraham (2015**)** and the found that twelve weeks of combined circuit and resistance training and super circuit resistance training produced significant improvement on speed. The findings of this study can also be substantiated by observations made by Kamalesh John H (2014) and he found combined circuit training and resistance training have significantly improved speed of football players.

Conclusions:

From the results of the study and discussion the following conclusions were drawn.

1. It was concluded that significant difference on speed was observed between experimental group and control group.
2. It was concluded that resistance training, circuit training and combined resistance, circuit training improved the speed of the football players in the age group of 17 to 20 years.

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Prediction of Volleyball Playing Ability from Anthropometric Measurements

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Abstract-

The purpose of the study was to predict the Volleyball playing ability from selected anthropometric measurements. To achieve the purpose of the study, total of eighty Inter -university Volleyball men players are selected as a subject. The anthropometric variables such as Height, Weight, Leg length, Arm Length, Forearm length, Fore arm circumference, Upper arm girth, Chest Girth, Thigh Girth & Calf Girth was selected as independent variables and volleyball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were tested by using gulick anthropometric tape. Here the height measured by stadiometer, weight measured by weighing machine, volleyball playing ability of the subjects was assed by the application of a Volleyball rating scale for 45 points. After the assessment of the performance in the match situation the average score of 3 experts were consider as volleyball playing ability of the subjects. To determine the relationship between dependent variable and independent variable Pearson product moment correlation and to find out the joint contribution multiple regression was used. The results of the present study indicate that Height, Leg length, Arm Length, Forearm length, Forearm circumference, Upper arm girth, Chest Girth, Thigh Girth & Calf Girth are playing an important role for volleyball playing ability.

Key Words: Playing Ability, Volleyball, Anthropometric Measurements.

Introduction

As an educationist and an economist predict certain things in their respective fields, a person involved very much in sports and games also predicts the possible outcomes in sports and games. The coach is in a way competent person to do the predictions about the outcomes of the match to be played in future. This can be well observed in the selection of players based on their performance to meet the future emergencies in a playground. A coach is actually exploiting the inherent abilities dormant in individual players. Thus, prediction can be defined as the act of foretelling about the future and present.

Anthropometry is the branch of anthropology that is concerned with the measurement of human body. Anthropometry involves the measurement of external part of the body, including body diameters; body circumferences somatic types. Athletes' kinanthropometric profiles are widely addressed in the scientific literature. Such profiles are particularly important in volleyball because absolute size contributes a significant percentage of total variance associated with athletic success. As in other team sports, volleyball players' anthropometric attributes correlate with the game's tactical demands. Anthropometric properties of athletes represent important prerequisite

for successful presence at the same sport, effecting athlete's performance and are necessary in order to gain excellent performance of sports skills.

Volleyball game is an excellent all-around team sports, has been widely accepted as a highly competitive as well as recreational game all over the world. Now, it is a game of power and tactics and is played at a faster pace and this calls sharper thinking, high standard of skills and technical application. There are very fast action and accuracy in performance to technique, and tactics, optimal physique is apparently an advantage to volleyball performance. Only when a volleyball team is collectively equipped with all the ideal anthropometric characteristics can the team wins the dominance in a game. Present-day volleyball requires from players quick reaction to changing situations in the game and accurate and precise movement for handling the ball.

Statement of the Problem

The purpose of the study was to predict the volleyball playing ability from anthropometric measurements.

Methodology

The purpose of the study was to predict the volleyball playing ability from anthropometric measurements. The purpose of the study, 80 Inter university volleyball men players are selected as a subjects. The age of the subjects were ranged between 18 to 25 years. The anthropometric measurements such as height, weight, leg length, arm length, fore arm length, fore arm circumference, upper arm girth, chest girth, Thigh girth and calf girth were selected as independent variables and volleyball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were tested by using gulick anthropometric tape and volleyball playing ability was tested with subjective volleyball rating scale. To determine the relationship between dependent variable and independent variable Pearson product moment correlation, multiple correlations and multiple regressions was used as statistical techniques. The level of significance was fixed at 0.05 level.

Findings of the Study

The data collected on the selected variables were analyzed and presented in the following tables.

Table 1: Relationship between Volleyball Playing Ability and Anthropometric Measurements

Dependent variable	Independent Variable	Pearson "r" value
Playing ability	Height	0.236
	Weight	0.017
	Leg length	0.288
	Arm length	0.397
	Forearm length	0.471
	Forearm circumference	0.514
	Upper arm girth	0.664
	Chest girth	0.327
	Thigh girth	0.365
	Calf girth	0.537

Above the table shows that Pearson's product moment correlation between the selected variables and playing ability of volleyball players.

Table 2: Regression Co- Efficient Of Volleyball Men Players (Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788[a]	.621	.567	5.65328

Obtained R Square 0.621, the contribution of all the independent variables on playing ability of volley ball men players was found to be 62.1 %. The Std. Error of the Estimate is 5.65.

Table 3: Table Summary of Regression Co-Efficient For Playing Ability

Model	Unstandardized Coefficients		Standardized Co-efficient	t	Sig.
	B	Std. Error	Beta		
(Constant)	-77.52	22.06		-3.51	0
Height	-0.132	0.212	-0.105	-0.62	0.54
Weight	-0.287	0.096	-0.272	-3	0
Leg length	0.114	0.232	0.083	0.492	0.62
Arm length	0.586	0.264	0.316	2.221	0.03
Fore arm length	0.382	0.32	0.123	1.192	0.24
Forearm circumference	-0.161	0.684	-0.029	-0.24	0.82
Upper arm girth	2.518	0.516	0.532	4.881	0
Chest girth	-0.379	0.172	-0.217	-2.2	0.03
Thigh girth	0.198	0.186	0.101	1.068	0.29
Calf girth	0.97	0.381	0.259	2.544	0.01

Table 4: Relative Contributions of Predictor Variables on Criterion Variable (Playing Ability) Of Volleyball Men Players

Anthropometric measurements	Beta	R value	B*r	contribution in %
Height (X_1)	-0.105	0.236	-0.02483	-2.48298
Weight (X_2)	-0.272	0.017	-0.00463	-0.46279
Leg length (X_3)	0.083	0.288	0.024016	2.401587
Arm length (X_4)	0.316	0.397	0.125341	12.53406
Forearm length (X_5)	0.123	0.471	0.057778	5.777801
Forearm circumference (X_6)	-0.029	0.514	-0.01474	-1.47406
Upper arm girth (X_7)	0.532	0.664	0.352948	35.29479
Chest girth (X_8)	-0.217	0.327	-0.07094	-7.09402

Thigh girth (X_9)	0.101	0.365	0.036918	3.691778
Calf girth (X_{10})	0.259	0.537	0.139222	13.92222

The Total contribution of all the independent variables on Playing Ability of Volleyball Men players was found to be 62.1% in which, the contribution of Height (X_1)=-2.48%,Weight(X_2)=-0.46%,Leglength(X_3)=2.40%,Armlength(X_4)=12.53%,, Forearm length (X_5)= 5.78%, Forearm circumference (X_6) = -1.47%,, Upper arm girth (X_7) =35.30%,, Chest girth (X_8)= -7.09%,, Thigh girth (X_9)= 3.69%, and Calf girth (X_{10}) =13.92%. Therefore it is conclude that, The Upper arm girth (X_7) is the First Contributor/predictor followed by Calf girth (X_{10}), Arm length (X_4), Chest girth (X_8), Forearm length (X_5), Thigh girth (X_9), Height (X_1), Leg length (X_3), Forearm circumference (X_6) and Weight (X_2) on Playing Ability of Volleyball Men players.

Conclusion

1. There was a significant relationship between the selected anthropometric measurements (height, leg length, arm length, fore arm length, fore arm circumference, upper arm girth, chest girth, Thigh girth and calf girth) and volleyball playing ability of inter university players. It is significant at 0.05 levels.

2. There was not a significant relationship between the selected anthropometric measurement weight & volleyball playing ability of inter university players.

3. The total contribution of anthropometric measurements such as Height, weight, Leg length, Arm Length, Forearm length, Fore arm circumference, Upper arm girth, Chest Girth, Thigh Girth And Calf Girth of volleyball players in each variables. R square values showed that about 62.1% of variation in playing ability.

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The Effect of High Intensity Plyometric Training with and Without Mental Training on Selected Physiological Variable, Among Long Jumpers.

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Abstract

The purpose of this study was to find out "the effect of high intensity plyometric training with and without mental training on selected physiological variable, maximal oxygen consumption among long jumpers."The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male students. The groups were designed as experimental group I high intensity plyometric training with mental training group (HPMG), experimental group II high intensity plyometric training without mental training group (HPTG) and control group (CG) respectively. Each group consists of 20 college level long jumpers. Pre-test was conducted for all the 60 subjects on selected physiological variables such as, maximal oxygen uptake. The experimental groups (high intensity polymeric training with mental training and without mental training) participated in respective training for a period of twelve weeks. The control group did not participated in any of the training programme. The post-test was conducted on the above said dependent variables after the experimental period for all the three groups. The different between initial and final mean scores of the groups was the effect of respective experimental treatment on the subjects. The differences in the mean scores were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed test the hypothesis of the study.

Keywords: High intensity plyometric training, Mental training , Physiological variable, maximal oxygen consumption**.**

Introduction

Sport plays a very prominent role in the modern society. It is important to individuals, a group, a nation and indeed the world. Throughout the world, sport has a popular appeal among people of all ages and both sexes. Much of the attraction of sport comes from the wide variety of experience and feeling that result from participation such as success, failure, exhaustion pain, relief and feeling of belonging. Sport can bring money, glory, status and goodwill. However, sport can also bring tragedy, grief and even death (Coakley, Jay J., 1998).

Athletics

Athletics is the mother of all sports and so it has assumed great importance in recent years. Athletics is a collective name for physical exercise and game requiring skill and activity. Athletic events are classified into two namely track and field events. The track events includes short distance run (sprint) long distance run, middle distance run, relays, hurdling, walking and steeple chase. The field events include jumping events (such as long

jump, triple jump, pole vault and high jump) and throwing events (such as discus throw, hammer throw and putting the shot).

Need of the Study

The plyometric training is to produce greater power by training the muscles to contract more quickly and forcefully from an actively pre-stretched position. The effectiveness of the exercise relies upon the conditioning of the plyometic, or stretch-reflex, mechanism and the natural elastic properties of the muscle. A concentric contraction is much stronger when it is preceded by an eccentric contraction. In an eccentric contraction, the muscle reacts very powerfully against the rapid stretching. This reaction is the stretch-reflex. A fundamental principle of plyometric training is that the muscle needs to be pre-stretched quickly. The rate of stretch of the muscle is much more important than the degree of stretch.

Statement of the Problem

The purpose of this study was to find out "the effect of high intensity plyometric training with and without mental training on selected physiological variable, maximal oxygen consumption among long jumpers."

Methodology

Selection of subjects

The purpose of the study was to find out the effect of high intensity plyometric training with and without mental training among long jumpers. To facilitate the study, 60 male students from the different college level of Andhra Pradesh, who had represented their college level in intercollegiate competitions, were selected. The selected subjects were in the age ranged between 19-25 years. They were further divided into three groups namely, High intensity Plyometric training with mental training (HPMTG), high intensity plyometric training without mental training (HPTG) and control group (CG), on random basis. Each group consists of 20 subjects.

Selection of Variables

The researcher reviewed the various scientific literatures pertaining to varied intensities of Plyometric training and mental training on selected physiological variables from books, journals, and research papers. Taking into consideration the feasibility and availability of instruments the following variables were selected.

Dependent Variable: - Physiological Variable

1. Maximal Oxygen uptake (VO_2 mas)

Independent variables

1. High Intensity Plyometric Training with Mental Training (HPMG) for 12 weeks.
2. High intensity Plyometric Training without Mental Training (HPTG) for 12 weeks.

Experimetnal Design

The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male students. The groups were designed as experimental group I high intensity plyometric training with mental training group (HPMG), experimental group II high intensity plyometric training without mental training group (HPTG) and control group (CG) respectively. Each group consists of 20 college level long jumpers. Pre-test was conducted for all the 60 subjects on selected physiological variables such as, maximal oxygen uptake. The experimental groups (high intensity plyometric training with mental training and without mental training) participated in respective training for a period of twelve weeks. The control group did not participated in any of the training programme. The post-test was conducted on

the above said dependent variables after the experimental period for all the three groups. The different between initial and final mean scores of the groups was the effect of respective experimental treatment on the subjects. The differences in the mean scores were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed test the hypothesis of the study.

Test Administration

Maximal Oxygen Uptake (VO_2 max):- Cooper's 12 Minutes run / walk test was administered to determine maximal oxygen uptake of the subjects.

Cooper's 12 Minutes Run or Walk Test

Purpose: - To measure the VO_2 max (cardio respiratory endurance)

Equipment: - Whistle, stopwatch, 400 meters track.

Description: - Subjects assemble behind the starting line .at the starting signal, they, run or walk as far as possible with in the 12 minutes time limit. An experienced pacer should accompany performers around the running area during the actual test. At the signal 'to stop 'performers should remain where they finished long enough for test administrators to record the distance covered. Ample time should be given for stretching and warm-up as well as cool down.

Scoring: - The distance in meters covered in 12 minutes**.**

The VO_2 max in ml / min / kg was calculated based on the formulae suggested by Cooper (1960) was:

$$\mathrm{VO_2\ max} = \frac{d_{12} - 505}{45}$$

Where, d_{12} is the distance (in meters) covered in 12 minutes.

Statisitical Procedure:

The following statistical procedures were followed to estimate the effect of high intensity of plyometric training with mental training and without mental training on selected physiological variable among college level long jumpers. The pre and test scores were analysed by using ANCOVA statistical technique. When the F-ratio was found to be significant, Scheffe's post-hoc-test was to find out the paired mean significant difference (Thirumalaisamy, 1998).

Resuts and Discussions: Results on Vo_2 Max

The statistical analysis comparing the initial and final means of VO_2 Max due to High intensity plyometric training with mental training and High intensity plyometric training without mental training among long jumpers is presented in Table-I.

Computation of Analysis of Covariance of Vo_2 Max

	HPMT Group	HPT Group	Control Group	Source of Variance	Sum Of Squares	Df	Mean Squares	Obtai-ned F
Pre-test Mean	42.67	40.57	41.26	Between	45.84	2	22.92	1.10

				Within	1190.35	57	20.88	
Post-test Mean	46.16	44.00	41.71	Between	197.59	2	98.80	5.88*
				Within	957.50	57	16.80	
Adjusted Post-test Mean	45.30	44.68	41.89	Between	131.78	2	65.89	11.24*
				Within	328.23	56	5.86	
Mean Diff	3.49	3.43	0.46					

HPMT: High intensity Plyometric with Mental Training

HPT High intensity Plyometric without mental training

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16.

*Significant at 0.05 level

As shown in Table-I, the obtained pre-test means on VO_2Max on High intensity plyometric training with mental training group was 42.67, High intensity plyometric training without mental training group was 40.57 was and control group was 41.26. The obtained pre-test F-value was 1.10 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects. The obtained post-test means on VO_2 Max on High intensity plyometric training with mental training group was 46.16, High intensity plyometric training without mental training group was 44.00 was and control group was 41.71. The obtained post-test F-value was 5.88 and the required table F-value was 3.16, which proved that there was significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 11.24 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-II.

Table-II : - Scheffe's Confidence Interval Test Scores on VO_2 Max

MEANS				Required C.I.
HPMT Group	**HPT Group**	**Control Group**	**Mean Difference**	
45.30	44.68		0.63	1.92
45.30		41.89	3.42*	1.92
	44.68	41.89	2.79*	1.92

HPMT: High intensity Plyometric with Mental Training

HPT High intensity Plyometric without mental training

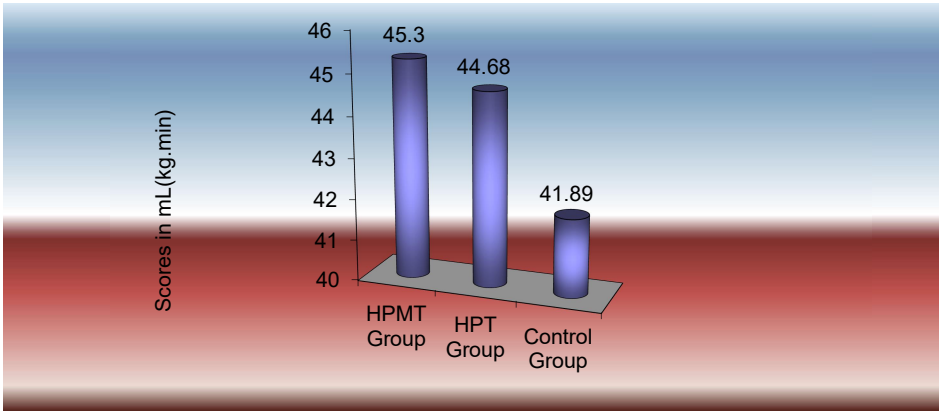
* Significant at 0.05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between High intensity plyometric training with mental training group and control group (MD: 3.42). There was significant difference between High intensity plyometric training without mental training group and control group (MD: 2.79). There was no significant difference between treatment groups, namely, High intensity

plyometric training with mental training group and High intensity plyometric training without mental training group. (MD: 0.63).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in **Figure-I**.

Bar Diagram on Ordered Adjusted Means on Vo_2 Max



HPMT: High Intensity Plyometrics with Mental Training

HPT: High Intensity Plyometrics without mental Training

Discussions on Findings on VO_2 Max

The effect of High intensity plyometric training with mental training and High intensity plyometric training without mental training on VO_2 Max is presented in Table-I. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 11.24 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-II proved that there was significant difference between High intensity plyometric training with mental training group and control group (MD: 3.42) and High intensity plyometric training without mental training group and control group (MD: 2.79). Comparing between the treatment groups, it was found that there was no significant difference between High intensity plyometric training with mental training and High intensity plyometric training without mental training group among long jumpers (MD: 0.63).Thus, it was found that High intensity plyometric training with mental training and without mental training were significantly better than control group in improving VO_2 Max of the long jumpers.

Findings:

Physiological Variables:- Maximal Oxygen uptake (VO_2 max)

The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male students. The groups were designed as experimental group I high intensity plyometric training with mental training group (HPMG), experimental group II high intensity plyometric training without mental training group (HPTG) and control group (CG) respectively. Each

group consists of 20 college level long jumpers. A pilot study was conducted to assess the initial capacity of the subjects to fix the exercise load. The intensity of the plyometric training, high intensity plyometric training and mental training were decided by the maximum heart rate method. Based on the response of the subjects in the pilot study the training schedules for the experimental groups were modified and finalized. The number of repetitions assigned to each subject was tested and it was found that they were within the reach of the individuals' capacity. Pre-test was conducted for all the 60 subjects on selected physiological variables such as, , maximal oxygen uptake . The experimental groups (high intensity plyometric training with mental training and without mental training) participated in respective training for a period of twelve weeks. The control group did not participated in any of the training programme. The post-test was conducted on the above said dependent variables after the experimental period for all the three groups. The different between initial and final mean scores of the groups was the effect of respective experimental treatment on the subjects.

Conclusions:

It was concluded that high intensity plyometric training with mental training (HPMTG) and high intensity plyometric training without mental training (HPTG) were significantly improved physiological variable VO_2 max of long jumpers compared to control group. It was further proved that there was no significant difference between treatment groups HPMTG and HPTG.

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Effect of Plyometric Training on Selected Physical Fitness Variables among Junior Volleyball Players Telangana

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Abstract

The purpose of the study was to analyse the effect of plyometric training on selected physical fitness variables among junior volleyball men players Telangana. To achieve the purpose of this study 30 men volleyball players from Osmania university, Telangana. Their age ranged between 14 to 18 years. The selected subjects were divided into two groups of fifteen each (n =15). The experimental group I underwent a plyometric training for six weeks and the group II act as a control group. The final reading of both the control and experimental groups were recorded at the end of six weeks. The collected data were analysed though ANCOVA was used to find out the difference among the groups. The results of the study plyometric training had significantly improved the selected dependent variables namely speed and agility when compared to the control group. It is also found that the improvement caused by plyometric training when compared to the control group.

Keywords: Plyometric Training, Speed, Agility, Volleyball.

Plyometric Training

Plyometric training is an excellent way to train for the demands of Volleyball. Plyometric drills should be progressive in nature and extend through the preparatory and preseason cycles of training. The importance of core stabilization system in creating stability and power system during sport activities has an important consideration. It is believed that a strong core allows an athlete the full transfer of forces generated with the lower extremities, through the torso, and to the upper extremities. Both the training methods have its own significance and been employed to find out the output of this study.

Physical Fitness

Physical fitness is to the human body what fine-tuning is to an engine. It enables us to perform up to our potential. Fitness can be described as a condition that helps us for better look, pleasant feel and do our best. Physical fitness involves the performance of the heart and lungs, and the muscles of the body. And, since what we do with our minds, fitness influences to some degree qualities such as mental alertness and emotional stability.

Speed

The ability to cover the distance within the possible shortest period of time is termed as speed. The capacity of moving a limb or part of the body's lower system or the whole body with the greatest possible velocity. Speed is a conditional ability. It has a complex nature as it depends to a considerable extent in the central nervous system. Due to this fact the extant nature of speed abilities is difficult to discover and understand speed ability should not be equated with mechanical speed which is equal to the distance covered per unit of time. In several sports actions no

distance is covered at all speed ability primarily. Signifies that the ability to execute movements with high speed. These movements may be cyclic of acyclic in nature.

Agility

Agility is defined as speed in changing body positions or directions. While almost everyone agrees that agile movements are actions that are well coordinate, efficient, quick accurate and reflect confidence, researches who have investigated human motion differ about how to assess and test this characteristic experimentally. Since agility also incorporates the idea of changing one's directions rapidly, one widely used test of this quality utilizes scattered markers though which subject have thread a path as quickly as possible. However, this test does not measure everyone's ability accurately, since agility can be very specific. It is possible to be an agile runner and awkward at sports that require jumping, conversely, proficiency at tumbling does not guarantee graceful skating.

Volleyball

Volleyball is a sport played by two teams on a playing court divided by a net. There are different versions available for specific circumstances in order to offer the adaptable of the game to everyone. The object of the game is to send the ball over the net in order to ground it on the opponent's court, and to prevent the same effort by the opponent. The team has three hits for returning the ball. The ball is put in play with a serving, hit by the serving over the net to the opponents. The rally continues until the ball is grounded on the playing court, goes "out" or a team fails to return it properly. In Volleyball, the team winning a rally scores a point (Rally Point System). When the receiving team wins a rally, it gains a point and the right to serving, and its players rotate one position clockwise.

Methodology

To facilitate the study 30 men volleyball players were chosen at random from university college of physical education at Osmania university, Hyderabad, Telangana. The selected subjects were divided into two groups of fifteen each (n =15). The experimental group I underwent a plyometric training and the group II act as a control group. So the investigator selected volleyball players as subjects and they were allowed to participate in their routine physical education classes. The subjects were age ranged between 14 to 18 years. The following variables were speed and agility.

Analysis of the Data

Table – 1 Analysis of Covariance for the Pre Test and Post Test for Experiment Groups and Control Groups on Speed.

Test	CON. GROUP	INT. GROUP	SV	SS	Df	MS	F
Pre test	8.38	8.39	Between	0.00	1	0.003	0.02*
			Within	3.10	28	0.11	
Post test	8.42	7.90	Between	2.06	1	2.06	31.68*
			Within	1.82	28	0.06	

***Significant at 0.05 level of confidence for the df 2 and 28=4.20.**

The table shows that the pre-test means of experimental group and control group were 8.38 and 8.39 respectively. The obtained F value on pre-test score 0.02 was lesser than the table value of 4020 to be significant at

0.05 level. It roved that there was no significant difference between the groups at initial stage and the randomization at the initial state was equal.

The post-test means showed differences due to six weeks of experimental group and control group mean values recorded were 8.42 and 7.90 respectively. The post test scores analysis proved that there was significant difference between the groups as the obtained F value of 31.68 was greater than the table value of 4.20. It proved that post-test mean at 0.05 levels was significant.

Discussion on the Findings of Speed

The result on the physical variable speed was presented in the table proved that there was significance improvement among the pre means and post means between plyometric group and control group. The obtained F value of 31.68 was higher than the required table value of 4.20 to significant at 0.05 levels. There was significant effect because of plyometric training. The obtained result presented in the table 2 and the result proved that plyometric group and control group shows significant difference in improving the speed than the control group. From the table it is found that the mean of plyometric group shows improvement than the control group.

The table II shows that the pre-test means of control group and experimental group were 11.34 and 11.10 respectively. The obtained F value on pre-test score 1.26 was lesser than the table value of 4.20 to be significant at 0.05 level. It proved that there was no significant difference between the groups at initial stage and the randomization at the initial state was equal.

The post-test means showed differences due to six weeks of experimental group and control group mean values recorded were 11.42 and 10.85 respectively. The post test scores analysis proved that there was significant difference between the groups as the obtained F value of 9.62 was greater than the table value of 4.20. It proved that post-test mean at 0.05 level was significant.

Table - 2 Analysis of Covariance for the Pre Test and Post Test for Experiment Groups and control Groups on Agility

Test	CON. GROUP	INT. GROUP	SV	SS	Df	MS	F
Pre test	11.34	11.10	Between	0.42	1	0.425	1.26
			Within	9.43	28	0.34	
			Between	2.50	1	2.50	9.62
			Within	7.28	28	0.26	

***Significant at 0.05 level of confidence for the df 2 and 28 = 4.20**

Discussion on the Findings of Agility

The result on the physical variable agility was presented in the table II proved that there was significance improvement among the pre means and post means between plyometric group and control group. The obtained F value of 9.62 was higher than the required table value of 4.20 to significant at 0.05 levels. There was significant effect because of plyometric training. The obtained result presented in the table 3 and the result proved that plyometric group and control group shows significant difference in improving the agility than the control group. Form the table it is found that the mean of plyometric group shows improvement than the control group.

Conclusions

On the basis of the limitations and the statistical analysis of the data, the following Conclusions were drawn from the result.

1. It was concluded that there was significant improvement in speed and agility to plyometric trainings among University college of Physical Education Volleyball Players from Osmania University, Telangana.
2. The result of the study reveals that plyometric trainings would improve University college of Physical Education Volleyball Players from Osmania University, Telangana.

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Yogic Exercise and wellness

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Abstract

Health and Wellness are closely related to lifestyle of an individual. Lifestyle is the way people live and this has immense influence on the status of health or disease of an individual. Since one's lifestyle has developed early in life, it is advisable to cultivate healthy lifestyle in early childhood. Many factors determine one's lifestyle. Economic status determines incidence of under-nutrition in poor and obesity in the rich. To prevent these health troubles, a proper fitness is essential for everyone. Fitness should be a key component in anybody's life simply for the fact that it makes you feel better. Living a healthier life can not only extend our life, it can also improve the quality. Feeling physically better and having control over our own life can greatly increase our mental health as well. Although there are some aspects of physical and mental health that are beyond an individual's (and science's) control, there are many things that people can do to improve their quality of life.

Keywords: yogic exercise and wellness

Introduction

Good health is the greatest asset. Without good health one can hardly expect success in any walk of life. To keep up good health, there are numerous modern physical culture systems designed to develop the muscles. The physical culturist develops them by mechanical movements and exercises. Yogic Exercise as an physical activities of and through human movement where stay of physical and educational objectives are achieved by means of big and small muscles actives involving sports, games, gymnastics, dance and exercise.

Definition on health and wellbeing

The world health organization defines health as a state of complete physical, mental and social well being and not merely the absence of disease of infirmity. Eating right, exercising, and sleeping well play an equal role in the prevention of infections and diseases. However, a good seme of self, a loving support network and the pretrial for continued personal growth is also important to our overall wellbeing. Well being has objective and subjective components. The objective components are relative to such concerns as standard of living and level of living. The subjective components of well being are referring to as quality of life.

Need of Yogic Exercise

1. It is also important for catharsis reasons with mean releasing of energy, emotion, tension or frustration and some people let off their extra steam by participating in various games and sports which are part of physical activity.

2. It is important for aesthetic reasons us by participation in physical fitness prgrammes like gymnastics and dance, beauty and grace is cultivated in the movement.

3. Yogic exercise teaches us the value of physical fitness and how to become physically fit

4.Yogic exercise also teaches us the value of ethical behaviour in sporting situations.

5. Yogic exercise teaches us various physical actives that can be practiced now in later life such as motor skills for the games and sports of volleyball, tennis, swimming and so on

6. It is important as it provides us the knowledge of our bodies from musculoskenal physiological and biochemical point of view.
7. During old age, yogic exercise is important to prevent and treat various ailments and disease

8. Its beneficial during adulthood to maintain good health and fitness.

9. Yogic exercise is needed throughout the life for proper growth and development

10.Yogic exercise is needed because due to advanced technology the lifestyle of proper becomes sedentary and they become passive entertainer.

Importance of yogic exercise

Yogic exercise provide a unique opportunity for individual to acquire physical, social and personal benefits that can help them throughout their lives., individuals athletes generally do better in schools.

Playing of yogic exercise:

1. Improve physical fitness

2. Improve confidence through learning skills and success

3. Help individuals learn to control their impulses this is necessary for success in sport as well as social relationships.

4. Help build friendships

5. Start lifetime interest

6. Help individual leam about rules and fair play

7. Help individual to cope with winning and losing

8. Help individuals do better at school work.

9. Children and young people can enjoy the competition and still be learning skills. Some children at 11-12 years age are showing special talent at and interest in a particular sport and can benefit from individual coaching.

10.Children and young people need to learn about how to behave when playing winning and losing

11. Yogic exercise at the 10-12 years stage can involve trips away with a team and opportunities for team leadership.

12. It is important not to push any young people beyond what they are physically ready for and to find out about what is appropriate in relation to their age and the sport they are playing Benefits of yogic exercise.

Benefits of yogic exercise

It is widely acknowledged that yogic exercise is essential to individual's growth and development. Yogic exercise activity can have a positive impact on individual's physical, mental, and social well-being. In particular, yogic exercise is likely to have an impact on individuals achievement, readiness to learn, behaviour and self esteem. Positive experiences with yogic exercise at a young age also help lay the foundation for healthy, produce lives. Research also indicates that individuals are in danger of developing serious diseases associated with obesity, which can result from a lack of recreation activity. The researcher reveals that the following benefits can be taken from yogic exercise.

The following are benefits taken from the research on this subject.

Benefits :-

1.Along with the diabetic diet, regular yogic exercise will decreased the lipid levels in blood

circulation.

2. Regular yogic exercise, will strengthen the cardio vascular system.

3. It restricts the acidosis which is dangerous sign for diabetic coma.

4. It causes for more oxygen supply and nutrients to the pancreas for better function.

5.It decreases the adhesion nature of platelets and regulates the heparin secretion in blood

vessels

6.Worldwide International Inter Disciplinary Research Journal (A Peer Reviewed Referred) It controls hypertension and plaques in coronary arteries causes for atherosclerotic leads to myocardial infraction.

7. Micro-vascular diseases can also be avoided by regular yogic exercise.

Regular yogic exercise has been shown to reduce the morbidity and mortality from many chronic diseases. Millions of people in the world suffer from chronic illnesses that can be prevented or improved through regular yogic exercise. Despite the well known benefits of yogic exercise, most individual lead a relatively sedentary lifestyle and are not active enough to achieve these health benefits. A sedentary lifestyle is defined as engaging in no leisure time yogic exercise.

Participation in yogic activities can help young people make friends and gain acceptance from their peers. Regular yogic exercise, fitness are exercise and critically important for the health and well being of people of all ages.

Enjoyment of yogic exercise

If yogic exercise are fun, young people are more likely to participate in them. Also, an enjoyable yogic exercise can be more appealing to young people than a less engaging sedentary one. **Development of competence in yogic skills:** Young people enjoy and gain confidence from developing and demonstrating physical fitness and movement skills.

Wellness

Wellness is the act of practicing healthy habits on a daily basis to attain better physical and mental health outcomes, so that instead of just surviving, you're thriving. To understand the significance of wellness, it's important to understand how it's linked to health. He described it as a disciplined commitment to personal mastery. Wellness, as a state of health, is closely associated with our lifestyle. Each person has a responsibility to provide for such health essentials as good nutrition, proper weight control, exercise and controlling of risk factors such as smiling, alcohol and drug abuse.

The Four Dimensions

- Spiritual Wellness. Spiritual strength is that force that drives us to make sacrifices for others, our nation, and the greater good. ...
- Emotional Wellness. Emotional wellness refers to building an awareness of and accepting one's feelings and moods. ...
- Physical Wellness. ...
- Social Wellness.

Benefits of wellness

- More productivity. Employees who eat healthily and exercise regularly are likely to be more productive than those who don't. ...
- High employee morale. ...
- Improve recruitment and retention of employees. ...
- Reduced absenteeism. ...
- Reduced health risks. ...
- Building camaraderie among workers.

Components and determinants of well being,

1. Physical: movements
2. Spiritual: belief
3. Social: interaction
4. Intellectual: knowledge
5. Occupational: Work
6. Emotional: feeling

Conclusion

The benefits to wellness make us to live much healthier life. It helps us to deal successfully with the difficult situations arising in our day to day life. Today everyone knows that life because more faster and if we want

to go with that speed we should be fit physically as well as mentally. Stress, obesity, diabetes, acidity and much more diseases are the gift of our unhealthy lifestyle. Due to lack of recreational activities not only elders but youngster are also facing plenty of problems in their life. If we want to avoid it then the only answer is yogic exercise and wellness.

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Effect of Yogic Exercise for Promotion of Physical Fitness and Performance in Short Distance Event of Male Athlete of Andhrapradesh in Rajamundry.

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Introduction:

Yoga has rarely forms but in all them mental and spiritual practice go along with physical process in using yogic method normal life the mental and physical feature of yoga be effectively used for the benefit of all day by day the popularity of it is creasing quickly. Yogic exercise have been practiced down the ages and will support harmony and balance in all body functions by providing proper exercise and tone to every part of the body machine. They also enable you to develop complete control over both your bodily functions and mental activity so that you can sustain your health through your life span. Yogic exercise is special pattern of posture that stabilizes the mind and the body through immobile stretching. Their aim is to establish proper rhythm in the neuromuscular tonic impulses and improve the general muscles tone.

Asana involves immobile stretching which bring about proper tone of muscles. They contribute to the flexibility of the spine and turn into back and spinal muscles stronger. They also stimulate proper working of the vital organs in the thoracic and abdominal cavities. Every sports involves enthusiastic movements in which shorten muscles and make them more susceptible to pupils and strain. In fact the more intensive and vigorous the exercise the more intensive and enthusiastic the exercise, the greater the need the stretch the muscles. This stretching procedure in yogic exercises prevents athletics injuries. The able cannot avoid injury during enthusiastic exercises because the muscles become shorter and lighter and flexibility decreases. The most commonly injured muscles are the hamstring and calf in running and games like football. Stretching is the most important injury preventative in sports today injuries to the sportsman ruthlessly so I have selected the topic that is utility of selected yogic exercises for the promotion of physical fitness and performance of sprint event among male athlete.

Statement of Problem:

Maintains of physical fitness is a need of the day in human society. In this age of stress and tension low level of fitness leads toward the spotlight of degenerative and psychosomatic disorder including other incentives suffering. Every sport involves vigorous movements which shorten muscles and make them more liable to pulls and strain. More intensive and vigorous the exercise, the greater the need to stretch the musles. This stretching procedure in yogic exercise prevents athletic injuries. So I have selected the topic | "A Study of Effect of Selected yogic Exercise for promotion of Physical fitness and performance of short distance event male students athletes".

Objectives of the Study:

1. To determine the effect of selected yogic exercise on the speed so sprint event.

2. To determine the effect of selected yogic exercise on flexibility.

3. To determine the effect of selected yogic exercise on likely to explode force.

4. To determine the effect of selected yogic exercise on strength.

5. To determine the effect of selected yogic exercise on cardiovascular efficiency.

Hypotheses:

The hypotheses taught to be tested for this study as follows,

H1. It was hypothesized that there might be a difference in speed of short distance event of male athlete.

H2. It was hypothesized that there might be a difference in explosive force of male athlete.

H3. It was hypothesized that there might be a difference in strength of abdominal muscles of male athlete.

It was hypothesized that there might be a difference in Speed ability of male athlete.

This is an experimental study so for the testing of hypotheses. The above hypothesis can be converted in to following null hypothesis.

H1. There is no significant improvement in speed of short distance event with selected yogic exercise from control and experimental group in pre test.

H2. There is no significant improvement in explosive force with selected yogic exercise from control and experiment group in pre test.

H3. There is no significant improvement in Strength of abdominal muscle with selected yogic exercises.

H4. There is no significant improvement in speed ability with selected yogic exercises form control and experimental group in pre test.

Methods of Study:

The present investigation is an experimental research was conducted.

Experimental design:

The investigation decides to use the two group experimental design. The hypothesis formulated by the investigator can be set on with the help of this design male Athlete were randomly assigned

to two groups. 60 male students in each group one group received the experimental treatment on group (control) is not received treatment both the group (Experimental and Control) received pre test and post test.

Experiment:

The experiment conducted on experimental group was compared with similar control group. Both the groups were pre and post test of by some accurately measurable test item of physical fitness the experimental group received a specific motivation for a total period of six Weeks. Whereas the control group did not receives the same however the controlled subjects were busy with some recreational activities, during the daily experimental period design of experiment followed known a parallel group design.

Selection of Sample:

A sample of 60 male subjects was selected from Rajahmundry town. All subject were equally divided in to two group experimental group was practicing some selected yogic exercises and control group followed their own regular practice along with some recreational activities.

Selection of Variable and Test:

Dependent variables the dependent variables of this faulty are the future of Physical fitness. This was assessed by some of the test items of AAHPER test.

- Explosive muscular power of legs (Standing Broad jump)
- Explosive power of Abdomen muscle (Sit-ups)
- Speed (50 Mtr. Dash)

Independent Variables

A set of selected yogic exercises formed the independent variable in the present study.

- Asana in sitting position - Padmasama, Vajrasana
- Asana in standing position - Natraj Asana, Padhasthasana, Tadasana
- Asanaon Back Position- Survangasana, Halasana.
- Asana on stomach position- Bhaguasana, Naukasana

Tools Used

1. Standing Broad Jump
2. Sit ups
3.50 Yards Dash

Procedure of the Study

The experimental group practiced a selected yogic exercise for total 3 weeks period. The control group did not participated in to yogic training programmed they were control by keeping them busy with the play on the play ground.

Statistical Analysis:

Sr.no	Test items	Scores of pre test	N	Mean	S.D	S.E.M	t-value	Sig.
1	Standing broad jump	Yogic exercise group	15	1.90	.05	.01	.035	0.972
		Control group	15	1.90	.05	.01		
2	Sit ups	Yogic exercise group	15	10.05	2.15	0.52	-.329	0.748
		Control group	15	10.29	2.33	0.63		
3	50 Yard Dash	Yogic exercise group	15	7.25	0.33	0.10	-.062	0.952
		Control group	15	7.26	0.39	0.10		

Sr.no	Test items	Scores of post test	N	Mean	S.D	S.E.M	t-value	Sig.
1	Standing broad jump	Yogic exercise group	15	1.90	.05	.014	2.213	0.034
		Control group	15	1.85	.05	.012		
2	Sit ups	Yogic exercise group	15	12.17	2.33	0.610	2.052	0.045
		Control group	15	10.45	2.13	0.570		
3	50 Yard Dash	Yogic exercise group	15	7.05	0.31	0.084	-2.078	0.044
		Control group	15	7.28	0.37	0.092		

Conclusion:

There is a significant improvement in performance of short distance event of male athlete with selected yogic exercises.

Recommendation:

1. AAPHER youth fitness test may be included in physical education syllabus.

2. A similar study may be conducted in an actually competition situation.

3. The study may be repeated by selected player of different level of achievements.

4 Specific selected yogic exercises may be included in the coaching programmer of sprinter for improving mind concentration level.

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Yoga as a Therapy for Mental & Physical Health

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Abstract

Today, yoga is practiced by more people worldwide than it was in the nineteenth century, especially as a medical approach and a way to assist in potentially healing different health problems. Yoga is a productive way for people to achieve mental health, relieve stress and live a more fulfilling life. The COVID-19 pandemic has created a sense of panic and fear, which has translated in various ways amongst individuals. Integrative yoga therapy has become more of a medical approach as people seek more natural and practical methods to solve depression and anxiety. Yoga teaches an individual to focus more on the parasympathetic system; through yoga, one will focus more on accepting circumstances rather than fleeing or fighting back. The deep breathing practice enables one to develop mindfulness, thus calming the nervous system and, in turn, enhancing mental wellbeing. Science and research have proven the positive effect of integrative yoga on health when used in medical approach. This paper discusses the three major phases of the yoga process, i.e., physical postures, the phase of recognition of the psychophysical effects, and the spiritual phase.
Keywords: COVID-19; Yoga; Mental health; Psychological; Emotional; Spiritual

INTRODUCTION:-

Yoga is one of the many types of complementary and integrative medicine approaches. The practice of yoga brings together the mental and physical disciplines that have been proven to help balance the physical, mental, psychological, emotional, and spiritual wellbeing of the body. That is, yoga is a mind and whole-body practice. Various styles of yoga combine physical postures, breathing techniques, and meditation to mental and physical wellbeing. Regular practice of yoga can promote endurance, strength, calmness, flexibility, and the wellbeing of an individual. Yoga is known as an ancient practice that has gained popularity through the years, as more and more people take alternative ways to deal with personal mental and physical health issues. Yoga helps shed the stress, reconnects with one's body and relieves the tension and mental strain 2020 till now, would be the relevance of mental health and the scrutiny yoga has faced previously. The COVID-19 pandemic that led to the interruption of the whole global enterprises, creating a sense of panic and fear. These created feelings that translated in various ways amongst individuals. Anxiety was the top issue for mental health during the pandemic. While some anxiety that can occur daily is essential and helps in critical decision making, a substantial amount of consistent anxiety can be detrimental to one's health. Mental health issues, like depression and/or anxiety, amongst many others are all in the mind and have no effect on the person's physical vessel i.e., the body, is a misconception. The body is the biggest tell-tell sign for mental issues. It is known as somatic symptom wherein parts of one's body experience pain caused by anxiety, stress or depression.

This uncertain time with nothing but speculation on the coming months created an urgency in finding methods to curb individual mental issues. Yoga, meditation, and mindfulness were three ways a person was able to self-manage themselves to ensure mental wellbeing. Yoga has been prevalent in India and now, globally for centuries. Practicing different positions (asana) in a smooth flow to allow better flow of blood in the body and to relieve anxiety without having to rationalize the process is a great starting point. The body can relax itself during the process. showed the correlation between anxiety (stress) and pain tolerance . They found the group of individuals who were experienced yogis had a much higher pain tolerance than the otherwise control group of healthy volunteers. Many doctors have started recommending yoga as a self-managing tool for patients to regulate their mind and body .

Meditation practices like pranayama, wherein one focuses on breathing and attempting to empty the mind, is known to help regulate blood, create a sense of calm in oneself and be present in the moment .

Mindfulness is a state of being. It is the conscious choice of an individual being aware of surroundings and utilizing all senses, i.e., touch, smell, sight, taste and hearing. Being mindful allows a person to truly cherish and acknowledge surroundings and be grateful for the life that currently exists, rather than fixating on what could be. All three practices provide a gateway for people to be in the here and now and live in the moment. These practices during COVID allow one to not dwell on the past, not worry about the future, but instead focus on the immediate surroundings and self. Yoga gives the body the feeling of relaxation and calmness as well as relieves any anxious feelings and doubts.

When one practices yoga regularly, the individual will be mentally refreshed and rejuvenated to a higher level. Yoga creates calmness and a more relaxed condition, since it helps the body release tension. Yoga works on the principles of body connection, helping synchronize and harmonize all aspects fully and making the body more active and relaxed than before. Yoga teaches to focus more on the parasympathetic system. Through yoga, the focus is more on accepting circumstances rather than fleeing or fighting back. The deep breathing practice, associated with yoga, enables the development of mindfulness, thus calming the nervous system and, in turn, enhancing mental wellbeing.

yoga is not just a practice for the mind and body but is also a medical approach to solving many of the problems in the body. It gives an individual more strength and determination to fight diseases and stay positive in the hardest of situations. Integrative yoga, through the years, has developed and evolved to become a method of medication and a potential way to solve multiple health complications in patients. In the modern world, many physicians refer patients to integrative yoga in attempts to help them solve their health complications and mental illness. Integrative yoga today helps people achieve mental health. Physical health, and the ability to go through stressing events without affecting their mental wellbeing. The practice of yoga also helps people to understand how to manage stress and how to avoid being controlled by events and circumstances, thus integrative yoga is a way to staying fit, healthy, and alert.

Background

For a long time, yoga has been used to relax the body and relieve the mind of stress and depression. More and more people today are suffering from depression to being suicidal and avoiding any social interactions. The high rates of depression are also serious mental issues in the United States. These studies showed that around 9% of the total population suffers from depression in the United States alone. This percentage does assist in explaining higher suicide rates and the ever-increasing crime rates, as people search for things to bring them peace of mind. More and more, people have turned to alternative medicine approaches to relieve their stress. One of the most common alternative approaches to medication is integrative yoga. According to , yoga is a broad term that refers to the practice of specific physical, mental, and spiritual discipline. Yoga targets the relaxation of the body, peace of mind and relief of any negative feelings and thoughts to help the body heal itself . Through integrative yoga, the body gains more freedom with the ability to fight off infections and diseases, since the mind, hence, the body's systems,

are at peace. Based on all the four studies discussed above, incorporating yoga and mindfulness-based practice into individual's lives can positively affect the body and mind in various, positive ways.

From the age 18 to 35 ages, yoga was a way of life comprised of mental, physical, and spiritual attributes to achieve different targets. Some people practiced yoga to achieve holism, while others practiced to achieve meaningfulness or excellence and completeness in all aspects of human functioning. Integrative yoga has continuously been used to help the body recover and stay healthy, especially when a person feels depressed or overwhelmed by emotions. Integrative yoga involves a fueling and energizing process that gives the individual a balance between personality and the wellbeing of the mind. Social, psychological, spiritual, and moral coordination through the practice can be achieved. Yoga seeks to balance all body aspects, to bring everyone to the state of total coordination and understanding, avoiding scenarios, such as stress and mental issues. That is, yoga creates a level of calmness, eliminating any possibilities of over thinking issues that take away the person's peace of mind.

In today's modern world, emotion regulation and control are aspects gaining more and more interest. Adolescent studies are steadily increasing over the years, and most of them focus on regulating and controlling emotions. Emotion regulation is the process of monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features. Several scenarios in the body influence emotion regulation, including neurophysiologic, physical, cognitive, behavioral, and social systems . All these systems can also be positively influenced by integrative yoga, consequently influencing the state of the body and mind. Therefore, integrative yoga is an approach to deal with emotion regulation, which has affected millions and millions of people in the 21st century. An ever-growing need exists to use integrative yoga today as a medical approach. Integrative medicine is an approach to wellness that combines: Conventional (traditional Western) medicine, which includes drugs, surgery and lifestyle changes. Complementary medicine, therapies that are not part of traditional Western medicine. Care may include chiropractic therapy, yoga, meditation and more

The higher intensity and integrative yoga practice has great health benefits in the short and long run. The benefits of yoga have become more and more evident to the general population, especially with the commercialization of integrative yoga. Integrative yoga is gaining accreditation and popularity as it forges its way into the mainstream of the United States of America. Different people choose to practice yoga for various purposes and reasons. Some choose yoga for practice, others for their mental health, while others have it recommended by their physicians as a medical approach. Some people are attracted to yoga for weight loss, health promotion, and health maintenance. Other individuals seek the benefits of yoga on a deeper level, desiring personal wellness and the yogic virtues of self-acceptance, mindfulness, and noncompetitive spirit. Yoga has also been utilized as a route to allow people to prevent, reduce, and control diseases and other associated factors. Integrative yoga is also used in rehabilitating an injury or trying to recover from long illness or a state of mental disability.

Today, stress contributes almost 80% of all diseases and illness in the world. Stress is the leading cause of suicide, blood pressure cases, and heart attacks, especially amongst the elderly. Through comprehensive reviews and study, integrative yoga has been confirmed to minimize and control levels of stress amongst the people who regularly practice yoga . Most people today do not believe or understand the problems associated with stress and how these problems affect physical health. **(Cartwright et al. 2020)** recently concluded most people still did not understand the importance and the health benefits of integrative yoga. More and more people are falling victim of stressful illnesses and mental health problems today. Integrative yoga can be used to help people cope better with stress and avoid falling into depression. Yoga can also help people develop healthy habits and methods to assist in a positive mental state.

Yoga and Mental health

The mental benefits of yoga, where an individual's mental health is a foundation of general wellbeing with proper functioning of the body and immune system. Mental health is a critical part of wellbeing and staying healthy, fit, and disease-free. Mental health is more just than being free from a certain mental condition. Being mentally

healthy is the ability to think critically, understand feelings, learn, and perceive other people's reactions. Therefore, mental health is a combination of the physical, psychological, cultural, social, spiritual, and emotional state of the body. The entire state and the wellbeing of the body decide mental health and how the mind reacts to different situations. The emotional and physical health of the body is inextricably linked, with one affecting the other more directly. The peak of mental health entails the ability to avoid mental illness and the ability to maintain the overall wellbeing and happiness of an individual.

According to the National Alliance on Mental Illness, nearly one in every five individuals in the United States of America has a mental illness. As a result of NIMI (National Alliance on Mental Illness), 4.5% of the entire American population suffers from a mental disorder or a severe psychiatric disorder that affects their ability to function properly and be healthy. Mental illness is becoming a global problem, affecting more and more people worldwide than ever before. The problem of mental illness could be associated with different scenarios and problems affecting people from across the globe. For instance, poverty, diseases, war, pandemics, and the lack of basic needs are the leading causes of mental illness. Depression, addiction to drugs and the inability to critically and healthy. process one's thoughts leads to mental instability and illness . Most people today have problems where no solution exists, in their perspective, resulting in depression affecting personal mental health in the long run. Yoga today is recognized by certain physical postures. Through the practice of these postures, one learns how to focus awareness inwards, helping the body relax, leading to better focus/concentration. Thus, the body is prepared for meditation. The mind is relieved of any stress and excess thoughts that may lead to depression or mental illness. The posture also helps the body develop muscular strength, balance, and flexibility and stimulates the relaxation response, which allows the immune and the endocrine systems. Also, the postures help create a deeper awareness of how the individual's body moves and feel. This awareness is finally transmitted to all other aspects of the body and life. More and more practice of yoga gives more awareness of thoughts and how to control these thoughts to avoid falling into depression effectively. The yoga practice also trains an individual to avoid over thinking, paying little attention to stress-causing thoughts. Through integrative yoga, the person becomes more aware of who they are and better self-expression. Integrative yoga, also, helps improve focus and concentration. Soon, this concentration and focus are present in the person's life to assist in finding peace and clarity of mind, clearing the mind of any distractions like stress, depression, frustration, fear, and anxiety.

Yoga eliminates issues like depression, and post-traumatic stress disorder, making the mind healthier and fit to face problems. According to yoga researchers and medical scientists, yoga and meditation can mitigate common mental health disorders like anxiety and depression. Yoga relieves the mind of excessive thoughts, making one free from their negative thoughts and, as a result promoting mental health.

Mental illness and issues have become a concern across the world, especially amongst the young people. The second most group of individuals affected by mental issues are parents and people trying to make "ends" meet. Financial problems are the leading cause of mental illness and depression. The world is unforgiving, especially to the poor and those that lack a way to provide for their basic needs. Mental illness and depression are also amongst the leading cause of death worldwide. Integrative yoga has proven to help individuals fighting depression and mental health issues. When people practice yoga, they understand how to stay calm, avoid over thinking issues, and find alternative solutions to the problems they have. Yoga also gives people the ability to meditate and calmly go through the thoughts in their minds to avoid stressing.

Yoga improves mental and physical health

Yoga is the practice of non-competitive, physical exercise involving held poses (in Sanskrit, *asana*) combined with regulated breathing (*pranayama*) and meditation techniques. The past few decades have seen a great increase in the practice of yoga in the West. Over 31m adults in the US have practiced yoga at some point in their lives. Multiple studies point to the positive effects of yoga on mental and physical health, as well as on personal

development. Yoga alleviates chronic pain. It helps manage coronary artery disease, asthma, diabetes, lymphoma, and breast cancer. Yoga helps individuals suffering from mental health problems, such as depression, anxiety, obsessive-compulsive disorder, post traumatic stress disorder, and schizophrenia. Regular yoga practice also benefits healthy individuals, improving psychological well-being, satisfaction with life, and self-esteem, and reducing stress and performance anxiety. Studies have also found that yoga reduces fatigue and negative effect, while increasing positive affect and giving a feeling of being energized.

Depression and Yoga

Practicing yoga involves the discipline of mental, spiritual, and physical practice to achieve peace of mind, soul, and body. One estimation is that over 350 million in the world have some of the depression. Depression is so common today, some states have defined it as a critical condition that needs national intervention. Depression affects one's state of mind and life, as well Depression may result from multiple factors, including genetic, biological, and even environmental. The formal treatment of depression consists of psychotherapy, taking antidepressants, or attending counseling sessions. Most people, however, lack access to any of these solutions, leading to depression affecting their lives and their daily activities in the long run. Over the last decade, researchers have studied the effectiveness of mind and body interventions, such as yoga as an alternative treatment for depression. The use of yoga can help bring the body and mind to peace. Yoga helps the individual live and focus their energy on more positive things. The limbs of yoga include physical postures, breathing regulation techniques, and meditation. The different types of yoga include alignment-oriented yoga, fitness yoga, flow yoga, hot yoga, specialty yoga, and spiritual-oriented yoga. Yoga involves the ability and willingness to focus an individual's energy and body to more calming and fulfilling events, hopefully avoiding any negative energy and stressing thoughts. Breathing regulation techniques trains the mind and body on how to focus on the positive life situations and issues, while neglecting the negative energy. Meditation has the ability to only focus on the things that bring peace to an individual.

Livingston et al. 2018 studied thirty-eight participants to determine yoga practice's effectiveness on depression and mental health. The practice of yoga showed effectiveness in reducing participants' stress levels and depression. The minimum yoga practice had positive effects on individuals who were stressed or under some form of mental distress. The practice of relaxation, silence and concentration helped these individuals focus their thoughts on more positive thoughts and events in their lives. As a result, they discarded the negative thoughts that might have led to depression, mental illness and stress . Focusing energy, thoughts and body relieved the body of depression, achieved a greater feeling of satisfaction, which can lead to calmness, avoiding many destructive thoughts.

Yoga as Holistic Therapy

Integrative yoga includes a precise combination of yoga postures, breathing, and meditation that could be key to unlocking some of the most crucial health benefits. Those who carry the burden of chronic disease can experience relative ease through regular yoga practice. The healing ability of yoga can allow the prevention, alleviation and recover of chronic diseases naturally. Yoga can improve both visible and invisible cues of pain, suffering, and limitations which plague quality of life . The restorative, rejuvenating, and relaxing nature of yoga has led to its increased usage in treating multiple common disorders. Yoga has been proven to improve optimism, immunity, and self-acceptance while also minimizing fear, anxiety, and irritability.

Integrative yoga improves relaxation and the ability of the mind to focus, improving on the ability to sleep soundly and improving the symptoms of insomnia. In general, yoga leads to a healthier body image, self-confidence, and mindfulness. Yoga also helps individuals abandon addictive behaviors and avoid falling into addictive habits . Yoga practice has also led to pain relief and increased range of motion for individuals with musculoskeletal disorders including osteoarthritis, carpal tunnel syndrome, and chronic back pain. Integrative yoga is, therefore, a medical approach that can help individuals recover from different problems and issues that arise.

The benefit of Yoga in Children

Today, more and more children are suffering from anxiety, fear, and depression due to the modern way of life. Children no longer participate in physical activities and social interactions that could help their mental development. Instead, most of them prefer sedentary video games and spending their time on the internet with social media. These specific behaviors result in the development of anti-social characteristics and children keeping to themselves instead of associating. The pressure to perform academically is also potentially delaying the children's cognitive development today, leading to mental illness and depression. Another reason behind the children's mental health issues today is insufficient sleep . Mental health problems amongst children today are on the rise,

Integrative and therapeutic yoga have a productive influence on helping children cope with stress and anxiety. Yoga engages not only the body, but also the mind in promoting a child's general well-being. In children, yoga can be both a healing practice and a way to help them develop better social relations and a way of life. Practicing yoga opens their mind to the many possibilities of life, keeping them away from screens and video games . The psychological and educational outcomes of yoga practice in this specific population are multiple, helping each child cope with life's difficulties today, hopefully. Integrative yoga should be included in the school curriculum as it has proven to help children's mental growth and well-being.

Discussion

Anxiety is a mental health disorder characterized by fear, worry, and strong feelings of insecurity. Panic attacks, obsessive-compulsive disorder, and post-traumatic disorder are the most prevalent anxiety attacks today. Most people suffering from anxiety disorder try to keep away from the issues or situations that expose them to these anxieties. Anxiety is a normal way of the body trying to respond to stress, however, anxiety will disrupt one's normal activities and function and life healthily. Integrative yoga is an alternative medical process to addressing anxiety issues outside of the standard medical treatment options. Yoga helps an individual stay calm even in the most stressful situations. The yoga practice gives an individual control over what is going on and the ability to get a solution instead of over thinking circumstances. Yoga therapy also provides additional support to assist those individuals suffering from anxiety regulate their stress response, enhance resilience, and better manage their anxiety. Clinical practice today is implementing yoga as a treatment for anxiety. Depression results from mood disorders and feelings of sadness, loss, rage, withdrawal, or constant denial. The rates of depression amongst the population today are way high due to circumstances, health conditions, poverty and living in denial. According to the Center for Disease Control and Preventions, almost 10% of all American adults had depression in any given two-week period between 2018 and 2020. Apart from the regular medical approach and treatment of depression, integrative yoga could also help people dealing with depression. More and more studies have been completed to establish the relationship between yoga and depression. According to the Harvard Mental Health Center, yoga has a significant positive influence on depression. yoga can reduce the impact of stress, help with anxiety and depression, assist in relaxation and meditation, and improve the body's overall energy . The problems caused by depression could potentially be solved through yoga postures exercises and mind control. The effects of depression-like lack of concentration and trouble sleeping can benefit from yoga therapy.

Limitations of Yoga Practice

Today, yoga is becoming more than just a trend with more and more people adopting the meditative approaches and techniques The all-encompassing nature of yoga has the tendency to draw in widespread appeal. The very first critique of integrative yoga is whether the benefits attributed to this specific yoga are real. Barriers may exist that prevent people from practicing yoga, since the effects of yoga are also unknown to many people citing and associating unrelated problems with the practice of yoga. Most people with medical issues only practice yoga when they must or when they have a problem that integrative yoga practices can intervene and alleviate. People do not

understand the fact that integrative yoga should a routine part and way of life, so they can achieve the best results in their mental, physical, and emotional health.

The issue of people today relying more on medical approaches and medications, whether prescribed or over-the-counter, rather than healthy practices and simple living challenges the concept of integrative yoga. People do not want to get too involved in solving their individual problems. Many would rather choose the easy way out, taking and medications to cure even the simplest of problems. The fact that people do not believe in the health benefits of integrative yoga makes it almost impossible for physicians and medical personnel to convince their patients to try yoga. Unless people understand the benefits and the medical help from integrative yoga, it is difficult to make integrative yoga a medical practice across the globe.

Conclusion

The people, who practice yoga, often have the feeling of peace and relaxation. Research and studies show yoga helps with mental issues and emotion regulation. The increased heart rate variability resulting from yoga practice benefits the nervous system, leading to potentially reduced stress and trauma. With the increased rates of mental disorders, integrative treatment and practices are becoming more and more common as strategies to help those suffering from the diseases. Yoga practice can be positively used as an integrative treatment for psychological and physical problems. Yoga, also, trains the mind on how to accept emotions and control how the body reacts to different situations. Yoga does help one understand and develop insights on problems, thus, developing better ways to live better and more satisfied.

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Effect of selected Yogasanas practice on the selected Physical Fitness components among the athletes of Siddipet District, Telangana.

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Abstract:

The purpose of the present study was to determine the Effect of selected Yogasanas practice on the selected Physical Fitness components among the athletes of Siddipet District, Telangana. For this purpose, 60 (N=60) randomly selected male athletes of Siddipet District were selected as Subjects. The age of the subjects was ranged from 19 to 21 years. The selected subjects were asked to perform selected Yogasanas in the morning session from 06:30 am to 07:30 am, i.e., for a duration of One hour, Five days a week, over a period of Twelve weeks. The Yogasanas training was given by the Yoga experts. The subjects were tested on selected dependent variables i.e., Flexibility was measured by the Modified Sit and Reach Test and the Agility was measured by the Shuttle Run. The data so collected was statistically treated by using t-test; 0.05 level of confidence was fixed to test the significance. Within the limitations set for this study, the results shown that there was a significant difference in the Flexibility and the Agility between the Pre-test and the Post-test. Thus, it was concluded that, there was a significant improvement in Flexibility and in Agility among the selected athletes of Siddipet District, Telangana.

Key Words: Yogasanas, Physical Fitness Components - Flexibility and Agility.

Introduction:

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word 'Yoga' is derived from the Sanskrit root 'Yuj', meaning 'to join' or 'to yoke' or 'to unite'. As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man & Nature. According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be in yoga, and is termed as a yogi, having attained to a state of freedom referred to as mukti, nirvana or moksha. Thus the aim of Yoga is Self-realization, to overcome all kinds of sufferings leading to 'the state of liberation' (Moksha) or 'freedom' (Kaivalya). Living with freedom in all walks of life, health and harmony shall be the main objectives of Yoga practice.

Flexibility:

In physiological terms, Flexibility is defined as the ability of a joint or a group of joints and muscles to effectively move through an unrestricted and pain-free range of motion. With regard to joints specifically, flexibility is the

degree of extension that its tissues are capable of Flexibility is influenced by the mobility of the soft tissues that surround a joint, including muscles, ligaments, tendons, joint capsules, fascia and skin. Inactivity and lack of stretching can lead to these soft tissues shortening over time, thereby reducing the range of motion and overall flexibility. Improving flexibility is a gradual process that requires regular practice.

Yogasanas support the body in improving flexibility in two main ways. Firstly, it stimulates and stretches fascia, a connective tissue that surrounds and permeates bodily tissues. When fascia is restricted or tight, it can limit the range of motion of nearby joints and muscles. Secondly, yoga trains the nervous system to allow the muscles to release and extend.

Agility:

Agility or nimbleness is an ability to change the body's position quickly and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength, and endurance. More specifically, it is dependent on:

- Balance – The ability to maintain equilibrium when stationary or moving (i.e. not to fall over) through the coordinated actions of our sensory functions (eyes, ears and the proprioceptive organs in our joints);
- Static balance – The ability to retain the center of mass above the base of support in a stationary position;
- Dynamic balance – The ability to maintain balance with body movement;
- Speed - The ability to move all or part of the body quickly;
- Strength - The ability of a muscle or muscle group to overcome a resistance; and lastly,
- Coordination – The ability to control the movement of the body in co-operation with the body's sensory functions (e.g., in catching a ball [ball, hand, and eye coordination]).

In sports, Agility is often defined in terms of an individual sport, due to it being an integration of many components each used differently (specific to all sorts of different sports). Sheppard and Young (2006) defined Agility as a "rapid whole body movement with change of direction or velocity in response to a stimulus".

2. Statement of the Problem:

The primary aim of this study was to determine the effect of selected Yogasanas practice for a period of Twelve weeks on the Physical Fitness Components among the athletes of Siddipet District, Telangana.

3. Hypothesis:

It was hypothesized that the Yogasanas training programme may show significant effect on the selected Physical Fitness Components among the athletes of Siddipet District, Telangana.

4. Methodology:

The purpose of this study was to determine the Effect of selected yogasanas practice on the selected Physical Fitness Components among the athletes of Siddipet District, Telangana. For this, Experimental Research design was used for the data collection and its analysis.

5. Sample:

For this study, 60 (N=60) randomly selected male athletes of Siddipet District, were selected as Subjects. The age of the subjects was ranged from 19 to 21 years. The subjects generally hail from the different socio-economic status,

different dietary habits, mode of living, etc., Hence certain factors like daily routine life-style, environmental conditions and food habits were not taken into consideration.

6. Variables:
Yogasanas training was considered as Independent Variable and Flexibility and Agility were considered as Dependent variables.

7.**Training protocol:**
The selected subjects were asked to perform selected Yogasanas in the morning session from 06:30 am to 07:30 am, i.e., for a duration of One hour, Five days a week, over a period of Twelve-weeks. The Yogasanas training was given by the Yoga experts.

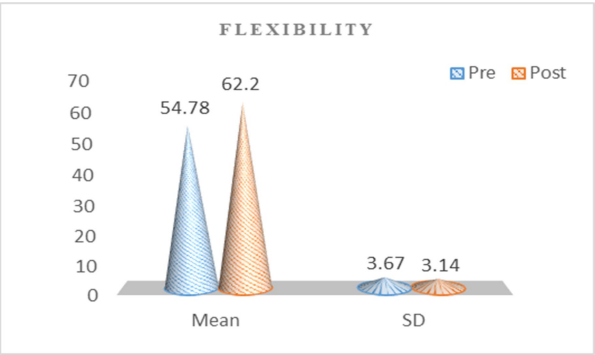
After completion of the Twelve-Weeks of Yogasanas training, the selected subjects were tested on selected dependent variables i.e., Flexibility was measured by the 'Modified Sit and Reach Test' and the Agility was measured by the 'Shuttle Run'.

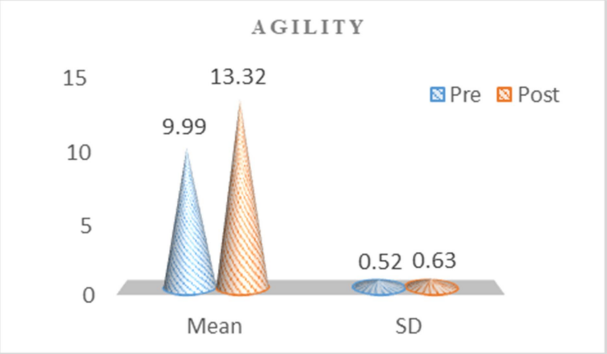
8. Statistical tools used:
With respect to the type of study, the data so collected was statistically analyzed through Mean, Standard Deviation(SD) and t-ratio was applied. The level of significance was fixed at 0.05 level of confidence, which was appropriate.

Table: Components of t-ratio between pre-test and post-test on selected Physical Fitness components among the athletes of Siddipet District, Telangana.

S.No	Variables	Test	No	Mean	S.D.	MD	t-value
1	Flexibility	Pre	60	54.78	3.67	7.42	24.42
		Post	60	62.20	3.14		
2	Agility	Pre	60	9.99	0.52	3.33	12.37
		Post	60	13.32	0.63		

Significance at 0.05 level of confidence with degrees of freedom (1, 58) is 2.00





9. Discussion:

The Pre-test Mean value of Flexibility was 54.78 and that of Post-test is 62.20. It shows a Mean difference of 7.42. The t-ratio (24.42) is also more than the table value (2.00). Hence, it indicates the significant development in Flexibility. The Pre-test Mean value of Agility was 9.99 and that of Post-test is 13.32. It shows a Mean difference of 3.33. The t-ratio (12.37) is also more than the table value (2.00). Hence, it indicates the significant development in Agility.

10. Result and Conclusion:

Within the limitation of the study and on the basis of the obtained results from this study, it was concluded that the there was a significant improvement between the pre-test and post-test in Flexibility and Agility of selected male athletes of Siddipet District, Telangana.

Hence, the Research Hypothesis is accepted.

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Influence of Yoga Asana With and Without Mudra Practices on Selected Psychological Variables among Obese Women

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Abstract

The present study was designed to find the effect of yoga asana with and without mudra practices on selected psychological variables among obese women. To achieve the purpose of the study 45 obese women were selected for participants for this study, their aged ranged from 30 to 40 years. The selected participants gathered in the Campus of Department of Physical Education, University of Madras, Chennai, Tamil Nadu. The selected subjects were divided into three equal (n=45) groups such as Experimental group – I, II and Control Group. Experimental group – I underwent asana with mudhra practices, Experimental group – II underwent asana practices and Group – III served as a control group for the period of 6 weeks. All the subjects of three groups were tested before and after the 6 weeks of training programme on selected criterion variables such as stress and self concept. To arrive the meaningful conclusions, analysis of covariance (ANCOVA) was used, whenever the obtained F values of adjusted post test mean was found significant, the scheffe's post hoc test was applied to determine the paired mean differences, if any. The results of the study proved that anxiety and self concept was significantly improved due to the yoga asana with and without mudra practices, further it was proved that there was no significant difference between two experimental groups.

INTRODUCTION

Thousands of years ago classical yoga originated in India. Ancient Rushimunis practiced this yoga to achieve siddi and to maintain health. In the present era awareness was observed about Health and finding remedies to keep good health among people (Moharana, et al. 2017). Meditation and yoga pranayama have been shown to be successful ways to promote health, as well as the prevention and treatment of diseases. Yoga has drawn the curiosity of many researchers. Yoga is said to have both psychological benefits. Yoga is a practice with a long history that aims to bring harmony to a person's physical, mental, emotional, and spiritual dimensions (Sengupta, 2012).

The way we live now has an impact on our health on many levels, including psychologically, socially, and physically. Awareness-building regarding the effects of modern living is crucial. The promotion of a healthy lifestyle includes a suitable eating pattern, modern life-styles also include poor food habits, inactivity, insomnia, and many other issues, which involve doing any activity, a healthy sleeping schedule, all these advantageous effects that frequent yoga practice might quickly produce (Bhavanani, 2017).

METHODOLOGY

To achieve the purpose of the study 45 obese women were selected for participants for this study, their aged ranged from 30 to 40 years. The selected participants gathered in the Campus of Department of Physical Education, University of Madras, Chennai, Tamil Nadu. The selected subjects were divided into three equal (n=45) groups such as Experimental group – I, II and Control Group. Experimental group – I underwent asana with mudhra practices, Experimental group – II underwent asana practices and Group – III served as a control group for the period of 6 weeks.

Training Programme

The following asana practice were practiced group two –Aum Chanting, Tadasana, Trikonasana, Dandasan, Baddhakonasana, Bhujangasana, Marjariasana, Makarasana, Ustrasana, Pachimottanasana, Janusirasana, Savasana. Further the group – I followed the above said asana and they added mudra such as surya mudra, apanvayu mudra, gyan mudra, surya mudra for the period of 6 weeks, each week 5 days of training and each session lasted 60 minutes.

Statistical Procedure

All the subjects of three groups were tested before and after the 6 weeks of training programme on selected criterion variables such as stress and self concept. To arrive the meaningful conclusions, analysis of covariance (ANCOVA) was used, whenever the obtained F values of adjusted post test mean was found significant, the scheffe's post hoc test was applied to determine the paired mean differences, if any.

Analysis of Data

Table – I: Computation of Analysis of Covariance of Pre- Test, Post Test and Adjusted Post- Test on Stress For Control And Experimental Groups Scores in points

	EX-I	EX-II	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	21.88	22.28	22.56	**BG**	6.59	2	2.20	0.12
				WG	1734.00	42	18.06	
Post-Test Means	20.60	20.76	22.44	**BG**	54.20	2	18.07	**4.25***
				WG	1390.56	42	4.49	
Adjusted Post-Test Means	20.96	20.77	22.20	**BG**	35.40	2	11.80	**20.65***
				WG	54.29	41	0.57	

Required F (0.05), (df 2, 42) =3.21; F (0.05), (df 2, 41) =3.22, ***Significant at 0.05 level.**
BG- Between Groups, WG- Within Group, df- Degrees of Freedom

The above table- I revealed that the Pre-Test: The calculated "F" value was 0.12 correspondingly lower and indicates no significant changes.

The post-test: The obtained "F" value was 4.25 correspondingly higher than the required value and affirmed significant changes.

The adjusted post-test: The obtained "F" value was 20.65 correspondingly higher than the required value and affirmed significant changes.

The findings were processed to post hoc analysis using Scheffe's post hoc test since significant differences were discovered. In Table - II, the findings were displayed.

Table – II: The Scheffe's Test for the Differences between the Adjusted Post Test Means on Stress Scores in points

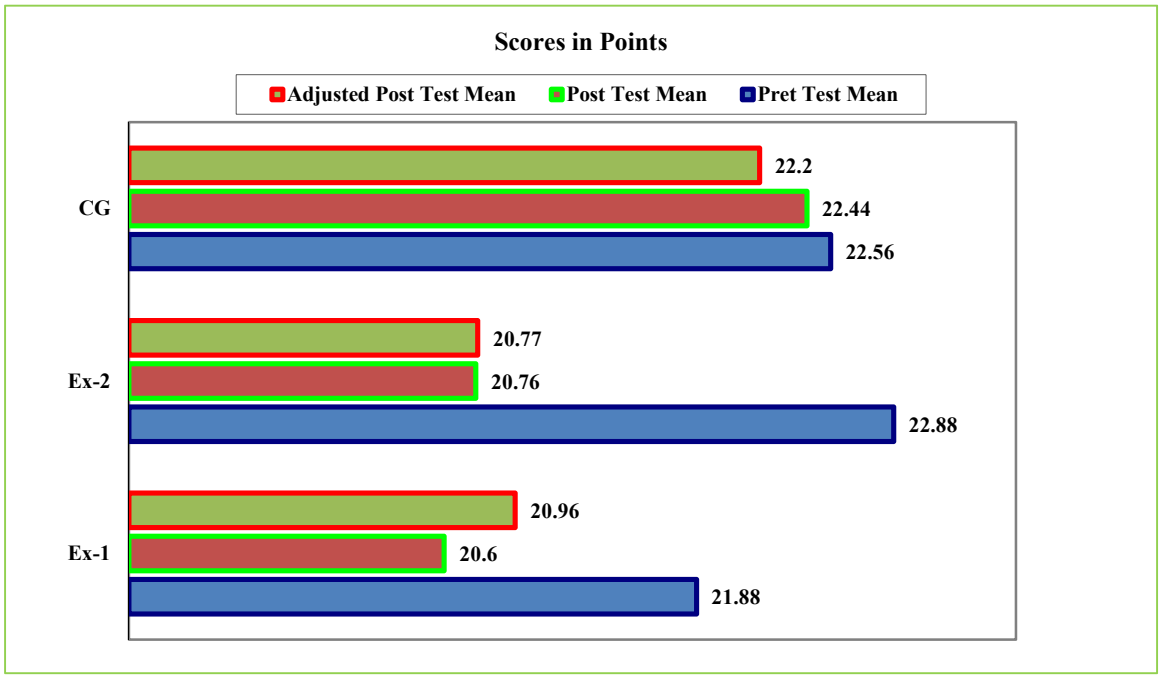
Adjusted Post-Test Means			Mean Difference	Confidence Interval
EX-I	EX-II	CG		
20.96	20.77		0.19	**0.61**
20.96		22.20	1.24*	
	20.77	22.20	1.43*	

*** Significant at 0.05 level of confidence**

The multiple comparisons in Table- II demonstrated that there were, at the 0.05 level of confidence and with a confidence interval value of 0.61, significant differences between the adjusted means of Ex-1 with CG was 1.24, Ex-2 with CG was 1.43, and there was no significatant difference between Ex-1 with Ex-2 was 0.19.

The bar graphic in Figure-1, which displays the pre, post, and adjusted means on the stress, was utilised to help explain the research outcome.

Figure – 1: Bar Diagram Showing Pre-Test Post-Test And Adjusted Post- Test Means On Stress



Discussion on Findings of Stress

The result proved that there were no significant differences between the experimental group on improving stress among women and also it was proved that the experimental groups better than the control group (CG) on improving the stress. This research in line with **Shakoor, et al. (2016)** revealed that Ten weeks of low-intensity

exercise can be an effective measure to improve the stress, anxiety, depressive symptoms, and blood pressure and **Merakou, et al. (2019)** exposed significant changes were noted in the intervention group showed a decrease in the symptoms of depression, anxiety, stress.

Table – III: Computation of Analysis of Covariance of Pre- Test, Post-Test and Adjusted Post- Test on Stress for Control and Experimental Groups - Scores in points

	EX-I	EX-II	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	49.20	50.32	49.16	**BG**	228.35	2	76.12	1.21
				WG	6029.44	42	62.81	
Post-Test Means	52.20	54.16	50.56	**BG**	435.08	2	175.03	**4.77***
				WG	5024.16	42	42.33	
Adjusted Post-Test Means	53.27	54.22	51.66	**BG**	95.33	2	31.78	**18.93***
				WG	159.48	41	1.68	

Required F (0.05), (df 2, 42) =3.21; F (0.05), (df 2, 41) =3.22, ***Significant at 0.05 level.**
BG- Between Groups, WG- Within Group, df- Degrees of Freedom

The above table-III revealed that the Pre-Test: The calculated ”F” value was 1.21 correspondingly lower and indicates no significant changes.

The post-test: The obtained ”F” value was 4.77 correspondingly higher than the required value and affirmed significant changes.

The adjusted post-test: The obtained ”F” value was 18.93 correspondingly higher than the required value and affirmed significant changes.

The findings were processed to post hoc analysis using Scheffe's post hoc test since significant differences were discovered. In Table - II, the findings were displayed.

Table – IV: **The Scheffe’s Test for the Differences between the Adjusted Post Test Means on Stress -Scores in points**

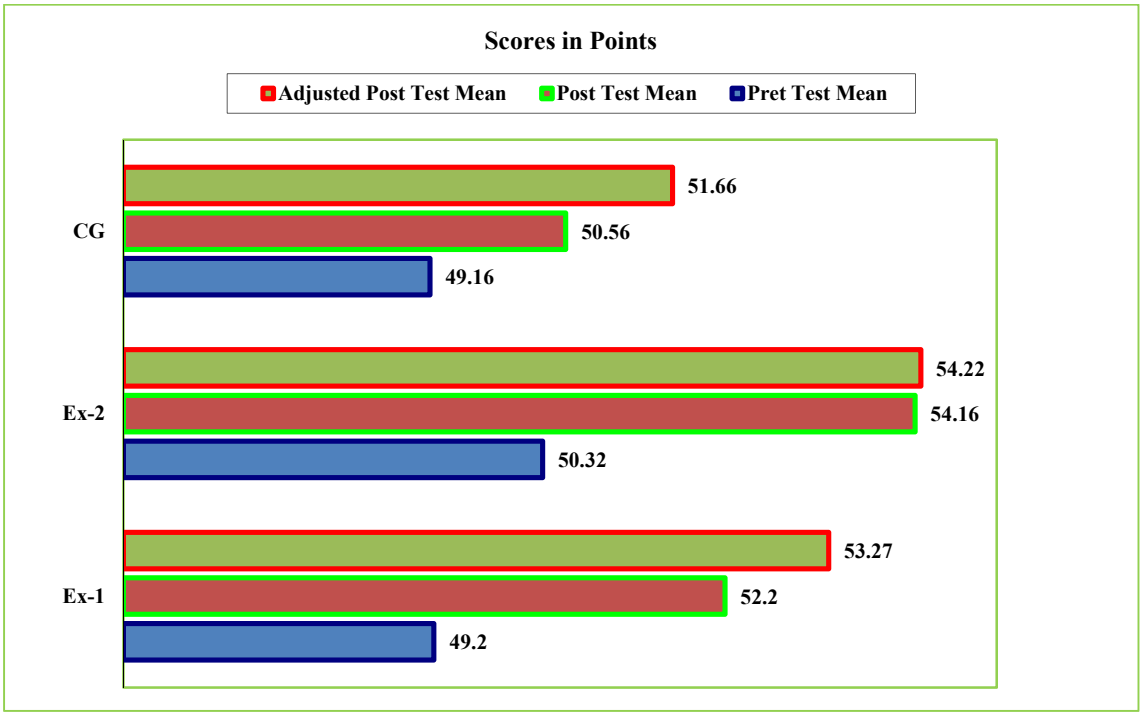
Adjusted Post-Test Means			Mean Difference	Confidence Interval
EX-I	**EX-II**	**CG**		
53.27	54.22		0.95	**1.04**
53.27		51.66	1.60*	
	54.22	51.66	2.56*	

*** Significant at 0.05 level of confidence**

The multiple comparisons in Table IV demonstrated that there were, at the 0.05 level of confidence and with a confidence interval value of 0.61, significant differences between the adjusted means of Ex-1 with CG was 1.260, Ex-2 with CG was 2.56, and there was no significatant difference between Ex-1 with Ex-2 was 0.95.

The bar graphic in Figure-2, which displays the pre, post, and adjusted means on the self concept, was utilised to help explain the research outcome.

Figure – 1: Bar Diagram Showing Pre-Test Post-Test And Adjusted Post- Test Means On Self Concept



Discussion and Findings

The result proved that there were no significant differences between the experimental group on improving stress among women and also it was proved that the experimental groups better than the control group (CG) on improving the self concept. This research in line with **Toth, et al. (2019)** revealed that regular exercise has positive effect on physical self-concept that is virtually unaffected by one's physical performance and also **Jeong, et al. (2018)** found there was effectively improved middle-aged women's physical self-concept including perceptions of health and body, sport confidence, physical fitness and general physical status.

Conclusions

The results of the study proved that anxiety and self concept was significantly improved due to the yoga asana with and without mudra practices, further it was proved that there was no significant difference between two experimental groups.

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A comparative study of speed among basketball and volleyball players of Medchal Dist

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ABSTRACT

Objective: To find out the comparison of speed among basketball players and volleyball players. **Method:** A sample of (N=40) subjects was selected by random sampling method. The Age ranges from 13 to 16 years. The selected subjects were divided into two groups i.e. players out of which 20 were basketball female players and 20 were volleyball female players. The subjects were selected from the school games Medchal Dist. Their age ranged from 13 to 16 years. The selection test administered was Speed by 50 meters dash. The statistical technique of, independent sample t-test was employed in this study. **Results:** The results of the study indicate that the speed of the basketball female players group showed significantly higher results when compared to the volleyball female players group.

Introduction

Speed is the ability of a person to execute motor movements with high speed in the shortest period of time. Speed is the quickness of movement of a limb, whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport. Example- football, volleyball, basketball all ball games and non-ball games required speed. This speed component of anaerobic metabolism lasts for approximately eight seconds without the muscle fatigue. It is quite evident that speed is the basic and one of the important components of physical fitness which has a prominent role in each and every games and sports. Meanwhile the high octane ball games such as basketball and volleyball games required speed component which plays a vital role, where the movements of the players changes rapidly in different directions, to reach the exact positions i.e. right place in right time. It should be of great importance.

Significance of the study

Thus, by the above, it is clear that speed has an important role in basketball and volleyball game. The researcher wants to find out the comparison of speed among basketball players and volleyball players.

Hypothesis

It was hypothesized that there would be significant difference of speed among basketball and volleyball players of Medchal Dist.

Methodology

Selection of the subjects

A sample of (N=40) subjects were selected by random sampling method. The Age ranges from 13 to 16 years. The selected subjects were divided into two groups i.e. players out of which 20 were basketball female players and 20 were volleyball female players. The subjects were selected from the school games Medchal Dist. Their age ranged from 13 to 16 years. The selection of test administered was Speed by 50 meters dash.

Selection of Variables

The investigator reviewed the available scientific literature on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present study variable. Selected physical fitness variable is Speed by administering 50 M dash test.

Experimental Design

The researcher had selected 20 basketball female players and 20 were volleyball female players from the school students. The basketball female players were formed as Group 'A' and 20 were volleyball female players were formed as Group 'B'. The study was formulated as static group comparison design. The subjects were tested on the speed.

Collection of Data

In order to collect the data test were administrated on the same time of the day for both groups and scores were recorded in the respective sheets for the groups with support of the coaches.

Statistical Procedure

The data collected from the groups on the selected variable of speed were statistically examined to find out whether there was any significant difference between basketball players and volleyball players, independent sample t- test was employed. The level of significance was fixed at 0.05 level of confidence.

Results

The results of the study indicate that the speed of basketball female players group had showed significantly higher results when compared to volleyball female players group. Hence the hypothesized was accepted.

Table 1- Paired Sample t- test of Volleyball and Basketball Groups on Speed (Units In Sec.)

SL.No	Parameters	Groups	N=40	Test scores		t- test	Sig.
				Mean	SD		
1.	Speed	Volleyball players	20	10.92	0.11	**2.294**	**0.02**
		Basketball players	20	10.14	0.04		

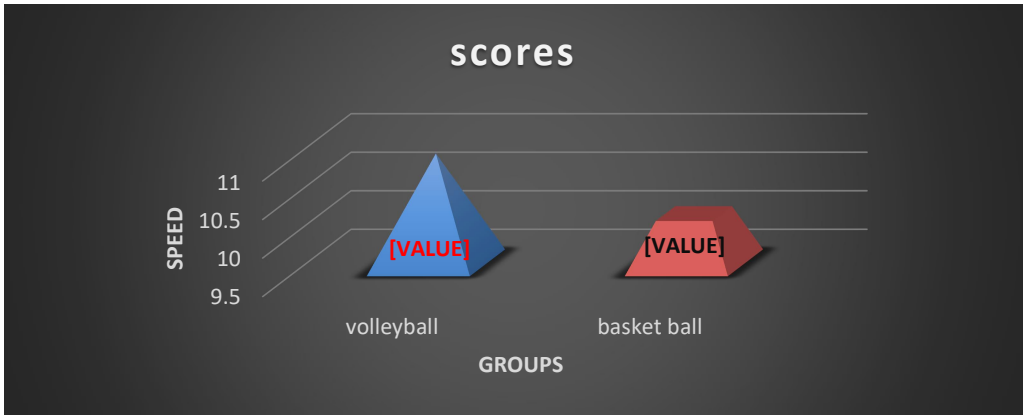
*** Significant at 0.05 level of confidence, required table value is 2.03.**

Discussion

Table I show that that the comparison of Speed among Basketball players and Volleyball players, the mean was 10.14 and 10.92 respectively. Table I reveals that there was a significant difference with the speed among

Basketball and volleyball players. Since the calculated ratio at 0.05 level with 38 degrees of freedom is 2.03. Hence it is significant. The hypothesis is accepted and there is a significant difference between means of the two groups.

Figure 1- Bar Diagram Showing the Mean Difference between Volleyball and Basketball players on Speed



Conclusion

Within the limitation of the study and on the basis of the obtained results from this study, the following conclusions had been drawn:

1. It was concluded that the Basketball players were better than the volleyball players on speed.
2. Hence, the hypothesis given in this study was accepted.

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Effect of Theraband Training on Selected Skill Performance Variables among Female Sprinters.

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Abstract

The purpose of the Present study was to find out the "effect of theraband training on selected skill performance variables among female sprinters", To achieve this purpose of the study, 40 Female sprinters were selected from S.V University Department of Physical Education Tirupati District Andhra Pradesh, The athletes, who has taken as a subjects age ranged from 18 to 22 years The selected athletes were divided into two equal groups. consists of 20 subjects, Group-1 Experimental group underwent Theraband Training for 8 weeks, Group -2 Control group was not taking any Training, in this study performance variables was taken as criterion variable, All the subject of two groups were tested the selected dependent variable at prior and immediately after the program of 8 weeks, Training period, Statistical technique 'T' Ratio was used to analyze the means of the Pre-test and post-test data of Experimental group and control group. The results were showed that there was a significant difference found on the criterion variables. The difference is found due to Theraband Training given to the Experimental group on performance variables when compared to control group. **Key words:** Theraband Training, Performance variable and 'T' Ratio.

Introduction

The science of sports training is relevant not only in performance of sports but also gives equal importance to other areas such as physical fitness, leisure sports and rehabilitation. The recent trends of the sports sciences indicates that in the near future the subject matter of sports training will be expanded to its extreme to tackle the tasks of training in all the areas of sports and health. In this context two types of sports training i,e; TheraBand training were implemented on skill performance variables among female Sprinters. Both the training methods are effective in strength developing.

Sports training aims at education and performance enhancement based on scientific principles through physical exercise. It is a basic groundwork of sportsman for elite performance. The development of physical fitness includes organic functions and increasing the strength and stability of the musculo-skeletal system (Hardayal Singh, 1991). Theraband training is an accepted training method for athletes in a variety of sports. With the proper exercise prescription, training goals such as increased muscle strength, muscle hypertrophy, improved body composition and improved sports performance may be achieved. (Fleck & kraemer, 1988)

Objectives of the Study

1. The major objective of the study was to determine the changes on skill performance variables due to the effect of Theraband training.
2. To find out which training has significantly influenced the skill performance variables.

Statement of the Problem

The purpose of the study was to find out the "Effect of Theraband Training on selected skill performance variables among female Sprinters."

Significance of the Study

1. This study helps to assess the skill performance variables among female sprinters
2. The result of the study helps to introduce the training packages for female sprinters.
3. The result of the study will motivate the players to practice.

Hypotheses

It was hypothesised that there would be a significant improvement in selected skill performance variables due to the influence of Theraband training among the female sprinters.

Delimitations

This study was delimited in the following aspects.

1. The study was delimited to forty female sprinters from S.V University Department of Physical Education Tirupati district, Andhra Pradsh.
2. The study was confined to female Sprinters with the age group ranged from 18 to 22 years.
3. This study was delimited to only Theraband training.

Limitations

This study was limited to the following aspects.

1. The previous experiences, motivational factors and various physical activities on the subjects playing ability were not taken into account.
2. Hereditary and environmental factor, which contribute to both physical and mental efficiency was not under control.
3. No attempt was made to determine whether the subjects had the same degree of motivation during the various stages of training and testing periods.
4. Variations in performance due to diet, climatic conditions, ground conditions and other environmental factors that might affect the study, were not taken into consideration.
5. Since the human elements are involved in the test administration even slight error in measurement and timings which might affect the results were also considered as limitations of the study.
6. The fatigue factors of the players and the carry over knowledge of the skills which a might affect the performance in the tests were considered as limitations of the study.

Methodology

For the purpose of the present study 40 players (sprinters N=40) from S.V University, Department of Physical Education ,Tirupati Prior consent from the subject as well as permission from the concerned authorities of the State was obtained. The purpose of the study was explained to the State authorities and the subjects who in turn agreed voluntarily to undergo the testing programme.

Criterion Measures

The present study was undertaken to find out the "Effect of Theraband Training on selected skill performance variables among female Sprinters." As per the available literatures the following tests were used to collect the relevant data on skill performance variables are presented in table 1

Skill performance variable Table - I

S.No	Variables	Tests	Units
1	Speed	50 Meters Run	Seconds

Statistical Analyses

Values are presented as mean values and SD. Independent samples t tests were used to test if population means estimated by two independent samples differed significantly. Data was analysed using SPSS Version 20 (Statistical Package for the Social Sciences, version 20, SPSS).

Results:

The primary objective of the paired 't' ratio is to describe the differences between the initial and final scores of female Sprinters. Thus the obtained results has been interpreted and presented below.

Table-II: Analysis of T Ratio for the pre and post test scores of experimental and control group on 50 M Dash test of female sprinters S.V.University, Department of Physical Education, Tirupati.

S. No	Variables	Group	Pre-Test Mean	Post-Test Mean	Mean difference	SD	σ DM	t-value
1	50M Dash test	Experimental	9.26	8.55	0.70	0.37	0.09	7.21
		Control	9.17	9.27	0.09	0.54	0.14	0.65

Level of Significance .05 level.

In table-II the obtained 't' ratios 7.21 for speed. The obtained 't' ratios on the selected variables are found to be greater than the table value of 2.14. It is found to be significant. The result show statistically significant and explains its effects positively.

Discussion of the Study

The findings of the study on speed has shown that there is significant improvement in the speed due to influence of Theraband training compared to the control group. The result of the study is in consonance with the finding of the studies of Nageshwaran & Ravichandran (2014), Lowrance & Anbalagan (2013), Campillo, et al. (2013), Hermasis, et al. (2010). They have concluded that twelve weeks of resistance and plyometric training has improved the speed of the subjects. Regular participation in the training such as resistance and plyometric training can be carried out regularly to improve the speed. which gives good performance for most of the sports and games.

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Isolated and Combined Effect of Aerobic Exercise and Medicine Ball Training On Selected Health-Related Physical Fitness Variables among School Boys

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Abstract

The study aimed to determine the isolated and combined effect of aerobic exercise and medicine ball training on selected health-related physical fitness variables among schoolboys. The study was formulated as an actual random group design consisting of pre-test and post-test. Sixty male schoolboys were chosen from the Nennakari Kanchipuram district. Their age ranged between 10 to 14 years. They were divided into four groups, experimental Group I, experimental Group II, experimental Group III and the control group. Group one acted as experimental Group I isolated aerobic exercise (IAE), group two acted as experimental Group II isolated medicine ball training (IMT), group three acted as experimental Group III combined aerobic exercise and medicine ball training (CAMT) and control group (CG) was not given any experiment. The variables selected for the study were health-related physical fitness, cardiovascular endurance, flexibility, Muscular strength, Muscular endurance and body compositions. Pre-tests were conducted for all 60 subjects' health-related physical fitness variables. After the experimental period of fifteen weeks, post-tests were conducted, and the scores were recorded. The differences between the pre and post-test scores in selected variables were subjected to statistical treatment using analysis of covariance (ANCOVA) to determine whether the mean differences were significant. It was found that there was a significant difference between the isolated aerobic exercise (IAE) and isolated medicine ball training group (IMT), isolated medicine ball training group (IMT) and control group (CG). **Keywords:** Isolated, Aerobic exercise, Medicine ball and Health-related physical fitness.

Introduction

Aerobic means with oxygen (O2) and refers to the use of oxygen (O2) in the body's metabolic system or energy-generating process. Aerobic exercise involves or improves oxygen consumption by the body (Maniazhagu, D. 2011). Aerobic metabolism plays a vital role in human performance and is essential to all sports, if for no other reason than recovery (Sekhon, B. S., & Maniazhagu, D. 2018). Fitness is the ability of a person to live a complete and balanced existence. It is considered one of childhood's most important health markers and has long been recognized as one of the primary objectives of physical education. Generally, Fitness is defined as a person's ability to live a happy, well-balanced life. It embraces the physical, intellectual, social, and spiritual aspects of a person's life. Fitness has health-related components, including aerobic fitness, muscular strength & endurance, flexibility, and body. However, proper exercise programs, nutrition, adequate rest, good health habits etc., are influencing factors for achieving, maintaining, and improving a considerable level of HRPF.

High-school students need to participate regularly in physical activities that enhance and maintain their cardiovascular and musculoskeletal health. Regular physical activity during adolescence is associated with numerous physiological and psychosocial benefits and has the potential to improve the quality of life for boys and

girls (Corbin & Pangrazi, 1993; United States Department of Health and Human Services, 1996). While children and adolescents have traditionally been encouraged to participate in aerobic activities such as jogging and swimming, compelling scientific evidence suggests that resistance training (also called strength training) can be a safe and effective method of conditioning for boys and girls, provided that appropriate training guidelines are followed (Faigenbaum, 2003; Guy & Micheli, 2001). The need to improve the physical fitness of youth has prompted the development of new and creative approaches that allow all boys and girls to participate in regular, healthful physical activity (Centers for Disease Control and Prevention, 2001).

Medicine ball is also known as an exercise ball, a med ball, or a fitness ball. Often used for rehabilitation and strength training, it serves a vital role in sports medicine. Medicine ball training is one of the oldest forms of strength and conditioning training. The great benefit of medicine ball work is that it can work either the whole body or only specific parts, thus benefiting overall conditioning and core stability. Physical education teachers who use medicine balls need assurance that medicine ball training is safe, beneficial, and worthwhile. Moreover, proven methods for incorporating medicine ball training into the high school physical education curriculum are needed, as adolescence is a critical period for promoting physical activity as a lifetime behaviour (Rowland, 1999). Medicine balls are becoming increasingly popular in schools and youth sports training centres. Initially used to rehabilitate muscle function, the medicine ball is now used to improve health-related fitness and performance. Regular medicine ball training program participation can positively influence many health fitness measures. Medicine ball training can enhance muscle strength, power, flexibility, endurance, co-ordinations, agility, balance, and speed (Avery Faigenbaum, 2006).

Accordingly, this study aimed to examine the isolated and combined effect of aerobic exercise and medicine ball training on selected health-related physical fitness variables among school boys. A medicine ball training program was used because it is progressive, easy to implement and designed for students with limited experience performing medicine ball training.

Materials and Methods

The study's goal was to determine the individual and combined effects of aerobic exercise and medicine ball training on selected health-related physical fitness variables in school boys. The 60 male students are drawn from the Puducherry district. Their ages ranged from 10 to 14 years . They were placed into four groups: IAE (Isolated Aerobic Exercise), IMT (Isolated Medicine Ball Training), CAMT (Combined Aerobic Exercise and Medicine Ball Training), and the control group (CG).

Study Design

For this study, a random group design was used. There are four groups, fifteen people in each group. All subjects were given pre- and post-tests on certain health-related fitness variables, such as cardiorespiratory endurance, flexibility, muscular strength, muscular endurance, and body composition. Six weeks were set aside for the experiment. Analysis of covariance (ANCOVA) was used to find out how important the differences between the means were by looking at the final test scores. To test the hypothesis, a 0.05 level of significance was used in every case.

Results

Variables	Test	Aerobic Exercise group	Medicine Ball group	Combined group	Control group	F-ratio	p- value
Cardiovascular Endurance	Pre-test	673.33	633.33	596.67	650.00	1.82	0.221
	Post-test	760	700	793.33	673.33	4.17*	0.019
Flexibility	Pre-test	17.66	15.53	15.87	15.40	2.11	0.138
	Post-test	20.40	17.26	19.27	15.80	7.84*	0.010
Muscular Strength	Pre-test	10.86	9.93	10.27	9.60	2.47	0.129
	Post-test	13.26	13.26	15.13	10.07	29.38*	0.000
Muscular Endurance	Pre-test	10.53	10.40	9.87	9.80	1.23	0.233
	Post-test	11.93	13.33	14.00	10.27	23.14*	0.000
Body Composition	Pre-test	28.86	23.11	32.20	30.53	1.35	0.217
	Post-test	18.64	16.92	19.53	30.07	5.38*	0.023

Discussion

The results of the study proved that exercise increased cardiovascular endurance, flexibility, muscular strength, muscular endurance, and decreased body composition. There is a lack of research on how aerobic exercise and medicine ball training influence the selected health-related fitness variables. Hence, the investigator selected the above health-related fitness variables for this research. In the present study, students who participated in the medicine ball training program significantly increased their ability to perform selected strength and motor skills. Medicine ball exercises require the body to function as a unit instead of separate parts. Moreover, medicine balls provide a unique type of resistance that can be used for a variety of exercises that can be performed at different movement speeds (Faigenbaum & Mediate, 2006). Likely, the ability of medicine ball training to enhance motor performance skills is due to the ability to create exercises with medicine balls that mimic natural body positions and movement speeds that occur in daily life and game situations (Faigenbaum & Mediate, 2006).

The primary finding of this investigation was that regular participation in a progressive medicine ball training program produced greater magnitudes of improvement in muscular fitness and specific motor performances than traditional physical education lessons in high school students after short-term training (National Association for Sport and Physical Education, 2004). In recent years, there has been an increase in research studies examining the effectiveness of school-based physical activity interventions in promoting students' health-related fitness knowledge. Results show that resistance exercise can be safe and worthwhile for children and teenagers, provided that the training intensity and duration are sufficient (Faigenbaum et al., 1996; Guy & Micheli, 2001). It increases the strength of boys and girls by about 30-50% during the first eight weeks of resistance training (Falk & Tenebaum, 1996). The review revealed that the studies' intervention effects on students' health-related fitness knowledge were, to a great extent, positive (79.4%). On the one hand, the moderator analysis revealed that these positive results were independent of the content of the intervention program, its duration, and frequency. This might be due to the cognitive development levels of adolescents and their higher experience in learning declarative knowledge.

Mayhew et al. (2005) found that Medicine Ball Training (MBT) help to improve the shoulder strength of football player and helps to improve the overhead throwing distance. Also, Raeder et al. (2015) found that MBT helped to improve the throwing velocity of handball players due to the improvement of shoulder strength. On the other hand, Mohammed found significant body mass and BMI changes in university students(Mohammed et al, 2018). From all these results, it is unclear how much effect the combination program has on anthropometric parameters. It appears that many factors (gender, age, physical activity, duration) can influence changes in anthropometric variables. Combining these two training methods, strength and endurance training, was also influential in different studies (Hoff et al., 2002; Loveless et al., 2005; Mikkola et al., 2012). Most studies regarding combined training have led to positive results in both strength and endurance performance. McCarthy et al. noticed in their research that the combined strength and endurance training group gained as much strength as the group that performed only strength training. They also improved their maximal oxygen uptake as much as the group that did only endurance training (Mikkola et al., 2012). These findings correlate with the results of this study, where the COM group improved significantly in all measured fitness variables after the selected period of four weeks.

Generally, positive changes in fitness variables (endurance, flexibility, agility, strength, and explosive power) in students after volleyball intervention were noticed in many studies (Mohammed, 2018; Sozen, 2012; Trajković, 2020; Selmanović, 2013) but also in many group sports during physical education classes (Prieto-González & Sedlacek, 2021; Oliveira, et al., 2017). An interesting finding came from the comparative analysis for explosive strength of lower limbs when the COM group achieved significantly better improvements than the VOL group. Similar results were achieved by Trajkovič when the volleyball group improved significantly after eight months of intervention (twice a week) the vertical jump, but this change was not significant compared with the control group (Trajković, 2020). Sozen also did not find any improvement in broad jump by high school students (untrained vs. volleyball group) in his research (Prieto-González & Sedlacek, 2021). These studies confirm the fact that combination training is more effective for improving explosive strength of lower body muscular power.

Also, combined aerobic and strength exercise was the most effective training program in obesity training (Keles, 2007). A study showed that training should be medium or long-term to achieve positive effects. Short-term training in less than 12 weeks does not affect decreasing body mass (Kraemer et al., 2002), but some research found significant results even in a shorter period. Park's study showed that physical parameter results of combined training conducted for an 8-week-long training protocol positively affected body weight, body mass index, and body fat percentage (Park .,2003). Moreover, the calorie intake of students was not controlled during the four weeks. In future research, it would be interesting to compare these results with other team sports, particularly with participants who are also required to have strength and endurance abilities like basketball and football.

The present observations suggest that incorporating medicine ball training into the physical education curriculum may be a safe and valid means to promote physical fitness in high school students. These findings have significant practical relevance for designing physical education lessons for high school students since muscular fitness is an essential health-related fitness component that contributes to tasks of daily life, participation in recreational activities, and reduction of disease.

This could be explained by previous literature which has shown that flexibility decreases with age and is significantly lower in adulthood (McKay et al., 2017) and this age group had a small sample size, with almost adult adolescents, which could have influenced the results. These findings are in line with previous studies which have shown that physical activity is related to the results of HRPF tests, i.e., higher physical activity levels are associated with better HRPF test results (Aires et al., 2010, Gutin et al., 2005, Morrow et al., 2013, Ortega et al., 2008). it is known that the improvement of HRPF is related to this intensity of physical activity (Martínez-Vizcaíno & Sánchez-

López, 2008). It is also possible that children had more difficulties when they were asked to recall and report on participation in physical activity in different contexts (Hardy, Booth, & Okely, 2007).

As HRPF is not only the result of genetic factors but also of individual and social determinants (Martínez-Vizcaíno & Sánchez-López, 2008), further research is needed to explore potential cofactors that may explain this weak relationship. Nonetheless, as it is not possible to modify the genetic factors of HRPF, the focus should be on modifying individual and social determinants of physical activity to potentially improve individuals' HRPF (Martínez-Vizcaíno & Sánchez-López, 2008). Even if achieving the recommended physical activity levels does not result in significant improvements in children's/adolescents' HRPF, physical activity can still lead to improvements in self-esteem, academic performance, or bone density (Martínez-Vizcaíno & Sánchez-López, 2008). Furthermore, low physical activity levels are associated with several chronic diseases and premature mortality worldwide, therefore, promoting physical activity in children is a global target in terms of public health (Aubert et al., 2018).

Conclusion

Finally, this study found substantial improvements in HRPF variables that were identified following the three training methods: aerobic exercise training, medicine ball training, and combination training. On the other hand, the combined training had a more significant impact on the participants' changes than the other two types of training. In the control group, no changes were found. However, there has been a dearth of research into this topic so far. Therefore, it is recommended that future studies evaluating the efficacy of aerobic exercise training, medicine ball training, and combined training use larger samples and more extensive follow-up periods.

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Role of Yoga in Personality Development

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Introduction:

Personality is a combination of self, society and nature. The realization of good conduct is evident in the manifestation of one's reaching the acme in life. The acme of human excellence is the optimum use of the sixth sense that is available only to human beings. Good personality will always be result of good character. Good character will bring welfare which will lead him to successful living in all the facets of life.

Personality:

Personality is a psycho - biological symmetry. Personality has been derived from the Latin word "persona" which means 'mark' or index of one's own profile.

Personality Development:

Personality Development can be understood as a process of developing and enhancing one's personality.

According to the SKY Yoga "symmetry in the composition, function and management of bio-magnetism is the index for personality development."

Importance of Personality Development:

Personality Development grooms and individual and helps him make a mark of his own. It goes a longtime to reduce stress and conflicts. Personality will dictate and decide success one's own career, to fulfill one's own goals and to achieve all round personality.

Obstacles of Personality Development:

The growth of personality development is often obstructed by the blemishes, 6 bad temperaments and differences among the human beings.

- **Blemishes** are
  Ego, Sinful imprints and illusions.

- **Six Bad temperaments** are
  Greed, Anger, Miserliness, Immoral sexual passion, The superiority and inferiority complexes, Vengeance.

- **The 16 factors decide the man's personality.** These are
  Genetic Centre, Variety in food, Time, Nation, Education, Profession, Government, arts, Attempts, Stages in age, Friends, Opportunity Research, Habits, Custom, Morality.

The Man's personality and physical strength plus or minus among these 16 factors will decide.

- ✓ The following **7 Assets** contribute for the personality development. These are
  Physical Future, Character, Excellence in wisdom, Fame, Physical strength, Health and Wealth.

Solution to Improve the Personality Development:

The personality development can be promoted, cherished and articulated by the yoga method of Introspection. Even though there are some methods suggested by psychologists are found of in the form of counseling. There are only of peripheral use. Only YOGA can stands a powerful medium for personality development and Introspection is the powerful method suggested Simplified Kundalini Yoga (SKY) for personality development. Because it deals with the integration of the bio-consciousness with the cosmic consciousness.

Simplified Kundalini Yoga

Vethathiri Maharishi (1911-2006), a spiritual leader developed SKY yoga system. The system includes:

1. Simplified Physical exercises for Health
2. Meditation for Inner Peace
3. Kaya Kalpha yoga for Anti aging
4. Introspection for happiness

The SKY Yoga features are

1. Yoga for modern age
2. Harmonious blend of Divine life, Yogic life and Secular life
3. The target of secular life are Equality, Security and Peace.
4. The target of Divine Life are Pacification, Purification and Realization
5. It is having the foundation of Space, Energy and Mass.
6. It is a variant of Raja yoga for achieving Jeevabrahmaikya Mukthi to the practice of Pranava.

In the SKY Yoga Introspection is the best Training Method for Development of Personality.

Introspection:

The word "Introspection" means an examination of one's thoughts or feelings. It is the study of the inner self for promoting psycho-biological symmetry. It is a training of thought and action. According to SKY Yoga "Introspection techniques one can change a few and accept a few to lead a peaceful and artistic life."

Sky Yoga Techniques for Introspection:

1. Analysis Of Thoughts
2. Moralisation Of Desires

3. Neutralisation Of Anger
4. Eradication Of Worries

1. Analysis of Thoughts:

Thought is an idea or the process of thinking. Analysis means a detailed examination of study. “A detailed study of thoughts is called analysis of thoughts. According to SKY Yoga “Thought is a bio-magnetic wave. Analysis of Thoughts controls intra-personal relations.

2. Moralisation of Desire:

Desire means a strong feeling of wanting something. Moralization means adapting to the principles of right and wrong behaviors following accepted standards of behavior. According the SKY Yoga Desire is a linking towards something, desire is to experience something. Desire is attachment. Desire is love. Desire is eagerness to acquire something. Desire is lust. Basically desire comes out of a need. To identify the impact of the desire on oneself and on the society is called moralization of desires. Moralization of desires helps to organize the intra-personal relations.

3. Neutralization of Anger:

Anger means a strong feeling of displeasure. Neutralization means prevent from having an effect. It means to prevent the effect of displeasure is Neutralization of Anger. According to SKY Yoga “There are objections and obstructions to exhibiting undesirable desire, a person turns emotional and expresses it in the form of Anger. Neutralization of Anger reduces the expenses of bio-magnetism.

4. Eradication of Worries.:

Worry means feel or cause to feel, concern or anxiety. Eradication means remove or destroy completely. According To SKY Yoga “Worry can be understood as a state of mind in the absence of required mind to respond to the challenges, worry consumes the bio-magnetic energy. Eradication of Worries makes the life free of stress and strain and contributes for longevity.

Conclusion:

The SKY method of Introspection protects and promotes personality development by balancing intra-personal relations, organizing inter-personal relations by reducing the expenditure of bio-magnetism and finally by increasing longevity with stress free life. Thus it is a means for happiness, calmness and stress free life.

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The Effectiveness of Linear Periodization Pranayama Training On Selected Physiological Variables

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Indroduction

"Take it easy" the yogi says and now psychologist and physiologists are listening. Effectiveness of age old practice of meditation and pranayama in relaxation has been widely accepted today. The physiological evidences seem consistent with the claim that it reduces high blood pressure, reduces heart rate and premature ventricular tachycardia. The literal translation of pranayama is "life force". Yogis believe that it not only rejuvenates the body but actually extends life itself, practice pranayama as an isolated technique (simply sitting and performing a number of breathing exercises) or integrate it into the daily hatha yoga routine.

'Pranayama' is control of breath. 'Prana' is breath or vital energy in the body. On subtle levels, 'Prana' represents the pranic energy responsible for life or life force and 'Ayama' means control. So Pranayama is 'control of breath'. One can control the rhythms of pranic energy with 'Pranayama' and achieve health of body and mind. Five types of Prana are responsible for various pranic activities in the body, they are Prana, Apana,Vyana, Udana and Samana. Out of these Prana and apana are the most important. Prana is upward flowing and Apana is downward flowing. Practice of pranayama achieves the valance in the activities of these pranas, which results in healthy body and mind. Prana means breath, respiration, life vitality, wind, energy (or) strength. Pranayama thus notes extentsion of breath and its control.

This contrl is over all . the functions of breathing as given inhalation or inspiration which is named 'Puraka' (Filling up),Exhalation (or) expiration which is called 'Rechaka (emptying the lungs), Retention or holding the breath or state where there is no inhalation or exhalation which is terjed "Kumbhaka'. Is an ancient technique involving slow and rhythmic breathing. It is known that the regular practice of pranayama increases parasympathetic tone, decreases sympathetic activity, improves cardiovascular and respiratory functions, decreases the effect of stress and strain on the body and improves physical and mental health.

Periodization is a methodical training regime that progressively increases strength gains and conditioning over time, as well as maintains fitness with the goal of achieving peak performance at specific points in a season. With a terminal objective in mind, a coach can prioritize and manage each performance goal by strategically planning over weeks or months for these to lead to this target state. Recognizing that performance is multi-factorial, the periodization strategy is one to attain and sustain long term gains in muscle strength, power and size, meanwhile avoiding detraining once the ideal physical condition has been reached.

Linear Periodization is a technique that gives effective training in various phases in linear manner throughout the training. In other words, in this method the training variables will progress in a linear and predictable manner.

Methodology

For this study Thirty male students from Mother Theresa Vocational Junior College at Choutuppal, Bhongir, Yadadri Dist. were selected. All subjects were informed about the nature of the study and their consent was obtained to cooperate till the end of the experiment. Their age varied from 17-19 years. Group A (n=15) underwent linear periodization pranayama training. Group B (n=15) acted as a control group and they did not participate in any training programme on par with experimental group. All the participants in this study were carefully monitored throughout the training program. The training program was scheduled between 6.30 am and 7.30 am in the morning session, five days for eight weeks. All the subjects underwent a medical check-up to ready- out that they are free from any medical ailments and the subject revealed that they were not consuming any drugs.

Table I: Dependent Variables and Test

S.NO	Variables	Tests/Instruments	Unit of Measurements
1	Pulse Rate	Radial Pulse method	Numbers
2	Breath Holding Time	Calibrated time/Stop Watch	in Seconds

Analysis of the Data

The effectiveness of linear periodization of pranayama training on selected criterion variables were analyzed and presented below.

Table II: Summary of Mean and Dependent'T' – Test for the Pre and Post Tests On Selected Physiological Variables of Linear Peiodization Pranayama Training Group and Control Group

S.no	Variables		Pre test		Post test		t-value
			Mean	Sd	Mean	Sd	
1	Pulse Rate	Experimental group	72.16	1.114	70.833	0.8348	3.3166*
		Control group	72.66	0.8876	72.166	0.8349	1.4214
2	Breath Holding Time	Experimental group	35.58	2.998	39.75	2.988	3.4092*
		Control group	37.5	3.030	38.66	1.556	1.1863

*Significant at 0.05 level

Table Value required for 0.05 level of significance with df 11 is 2.21

The obtained "t" ratio value of the experimental group on Pulse rate and Breath holding time are 3.31, 3.40 respectively which are greater than the required table value of 2.21 for df 11 is significant at 0.05 level of confidence. However the obtained't' ratio value of the control group on Pulse rate and Breath holding time are 1.42, 1.18 respectively which are lesser than the required table value of 2.21 for significant at 0.05 level of confidence. It reveals that significant differences existed between the pre and post-test means of experimental group on Pulse rate and Breath holding time. However, no significant differences exited between the pre and post-test means of control group on Pulse rate and Breath holding time.

Table III: Analysis of Covariance on Selected Physiological Variables of Linear Periodization Pranayama Training Group and Control Group

Variables	Adjusted post test mean values		Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
	Experimental group	Control group					
Pulse Rate	70.99	72.01	Between	5.85	1	5.85	18.73*
			Within	6.56	21	0.31	
Breath Holding Time	40.43	37.99	Between	32.24	1	32.24	27.73*
			Within	24.41	21	1.16	

*Significant at 0.05 level

Table Value required for significance 0.05 level of confidence for df 1 and 21is 4.33

The findings of the study shows that significant differences existed between the linear periodization pranayama training group and control group on pulse rate and breath holding time. Since, the obtained F ratio value for adjusted post test means 18.73 and 27.73 respectively were greater than the required table value of 4.33 for significant at 0.05 level of confidence for df 1and 21. Hence, it is concluded that due to the effect of 8 weeks of linear Periodization Pranayama training the physiological variables such as pulse rate and breath holding time were significantly improved.

Concluson

From the analysis of the data, the following conclusions were drawn.

- There was significant improvement of linear Periodization Pranayama group on Pulse rate and Breath holding time.
- There was significant difference existed between experimental group and control group on selected physiological variables in favor of linear Periodization pranayama training group.

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Effect of Saq Training on Selected Performance Variables Agility and Dribbling Among College Men Football Players

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Introduction

Today, sports have become a part and parcel of our culture. It is being influenced and does influence all our social institutions including education, economics, arts, politics, law, mass communication and even international diplomacy. In fact its scope is awesome. They attract the masses either for recreation or physical fitness or as a full time profession. The world is so advanced that Science dominates every aspect of life, sports is not an exception to it. Technology has forever changed our world, and in the process significantly increased the importance measuring and controlling performance relevant to physical, physiological and anthropometrical parameters.

The body is the temple of soul, and to reach harmony of body, mind, and spirit, the body must be physically fit. Hence where there is a sound body there we can ensure a sound mind. Research has shown that the physically fit person is able to withstand fatigue for longer periods than the unfit; that the physically fit person is better equipped to tolerate physical stress, that the physically fit person has a stronger and more efficient heart; and that there is a relationship between good mental alertness, absence of nervous tension, and physical fitness.

Need of the Study

Speed, as simply defined as possible, is the rate of movement. When most people think of training for speed, they imagine that it involves simply teaching their limbs to move through the same movements at a faster rate. And while this is a factor, it's true, speed and effectiveness cannot be viewed in a vacuum. Among other things, the ability to start quickly, that is, to initiate a movement, affects speed. Agility comes down to being able to move well and effectively in a variety of directions and change these directions quickly without loosing balance, fluidity of movement or focus. There is a precision and grace to agility that makes it instantly recognizable in any athlete's skill set.

Objective of the Study

The objectives of this study were as follows:

a. To formulated suitable SAQ training schedule for college level football players.
b. To measure the performance related physical fitness variables agility of football players
c. To measure the performance related skill variables dribbling.
d. To experiment with formulated SAQ training on the subjects.

e. To collect pre and post experiment data on selected performance related physical fitness and skill variables of football and players and statistically analyse the improvement if any among the subjects.

Statement of the Problem

The purpose of this study was to find out the effect of saq training on selected performance variables agility and dribbling among college men football players.

Hypothesis

It was hypothesized that SAQ training would significantly improve selected performance related physical fitness variables, namely, agility among college men football players.

It was hypothesized that SAQ training would significantly improve selected performance related skill variables, namely dribbling among college men football players.

Significance

1. The study is significant in formulating suitable SAQ training for the benefit of college level football players.
2. The study is significant in assessing the college men football players' performance related physical fitness components of football players.
3. The study is significant in finding out the effect of SAQ training on selected performance related skill variables of college men football players.
4. The study is significant in determining benefits for the football players to improve their performance related physical fitness and skill variables of college level football players.
5. The study would motivate future researchers towards this area.
6. The findings of this study would help physical education teachers and coaches to include SAQ training in their training schedule for football players.

Delimitations

The following delimitations were recorded for this study.

1. Only sixty college students who represented their colleges in intercollegiate level football tournaments from Andhra Pradesh were selected as subjects for this study.
2. The age group of the subjects were between 18 to 25 years.
3. The subjects were divided into two groups. Each group consisting of thirty college level men football players, experimental group I, and control group.
4. Only the following performance variables were considered for this study:

   Performance related physical fitness variables

   a. Agility,

   Performance related skill variables

   a. dribbling

Limitations

The study was limited in the following ways, which would be taken into consideration at the time of findings of this study.

1. The investigator has not taken into consideration of the past experiences of the subjects in any other training.
2. The investigator has not taken into consideration of the history of the adults about their sports participation etc.
3. The climatic conditions, diet and other daily routines of the subjects were not controlled.
4. College level football players who represented their college in intercollegiate level tournaments only were selected for this study.

Methodology

In this, chapter the methodology engineered in the selection of subjects, selection of variables, pilot study, collection of data, the orientation procedures, collection of data, tools used, and statistical procedure have been presented. The purpose of the study was to find out the effect of speed agility quickness (SAQ) training on selected performance variables of football players.

Selection of Subjects

To achieve the purpose of this study, the investigator randomly selected 60 college men football players, from different colleges in Andhra Pradesh. The subjects were competed in intercollegiate level tournaments and in the age group of 18 to 25 years. The selected subjects would be divided into two groups consisting of 30 in each group, namely, experimental group and control group.

Selection of Variables

Based on the experience gained by the investigator through review of related studies, journals and books on different training methods on SAQ training the following variables were selected for this study.

Dependent Variables

Performance related Fitness variables

1. Agility

Performance related Skill Variables

1. Dribbling

Independent Variables

12 weeks Agility and Quickness Training

Experimental Design

Random group pre and post test research design was followed in this study. Randomly selected subjects (N=60) drawn from the universal pool of football players who represented their college in intercollegiate level competitions from different colleges of Andhra Pradesh were considered for this study. The selected subjects were

divided into two, experimental group and control group consisting of 30 football players in each group. Experimental group was assigned provided with speed agility and quickness training for 12 weeks and the control group was not given any special training. Prior to experimental treatment, all the subjects were measured of their performance related physical fitness variables and performance related skill variables such as, agility and dribbling which formed pre test scores. After 12 weeks experiments to the experimental group on respective training, both the groups were tested on criterion variables selected, which form post test scores. The difference between pre and post test scores was considered as the effect of varied grid training. To test the statistical significance of the difference, the obtained pre and post test scores of the two groups using two group ANCOVA. In all cases 0.05 level

Test Administration

Agility (Shuttle Run Test)

Objective

To measure the agility of the performer in running and changing direction

Apparatus used :

Stopwatch , measuring tape , 2 blocks of wood.

Procedure :

Two parallel lines were marked 10 meter apart as starting line and end line Two blocks were placed behind the end line at the time of start .The performer on the signal go , ran to the blocks , picked up one returned to the starting line and placed the block behind the line .He repeated the same process with second block .

Scoring :

The score for each performer was the time required to complete 60 meter and recorded to nearest one tenth of a second.

Dribbling

Purpose

To assess the dribbling ability with speed and perfection.

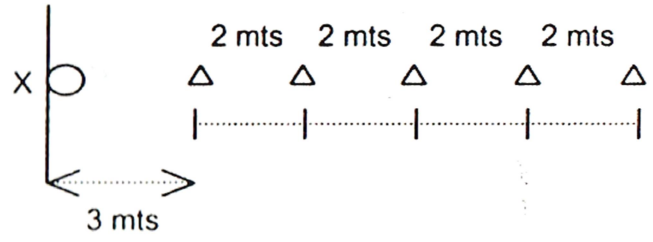
Equipments Used

Football, cones, stopwatch and whistle.

Marking

Marking is given in Figure I

Figure I: Floor Marking For Zig-Zag Dribbling



Procedure

The subject dribbled the ball from the starting point in forward direction and continued the zig-zag dribbling still the last cone and returned back to starting point in the same way. Three attempts were given with adequate rest in between.

Scoring

The time taken to complete the course was recorded to the nearest seconds. The best of three attempts was the final score. (Worthington, 1980).

Statistical Treatment

The initial scores prior to experimental treatment and final scores after the experimental period would be collected from all the subjects. The collected scores would be statistically tested for significance using ANCOVA. Since two groups ANCOVA was employed, the adjusted means were not subjected to Scheffe's post hoc analysis.

Computation of Analysis of Covariance and Post-Hoc Test Results on Agility

The initial and final means on SAQ training group and control group on Agility among football players and the obtained results on Analysis of Covariance (ANCOVA) is presented in Table I.-

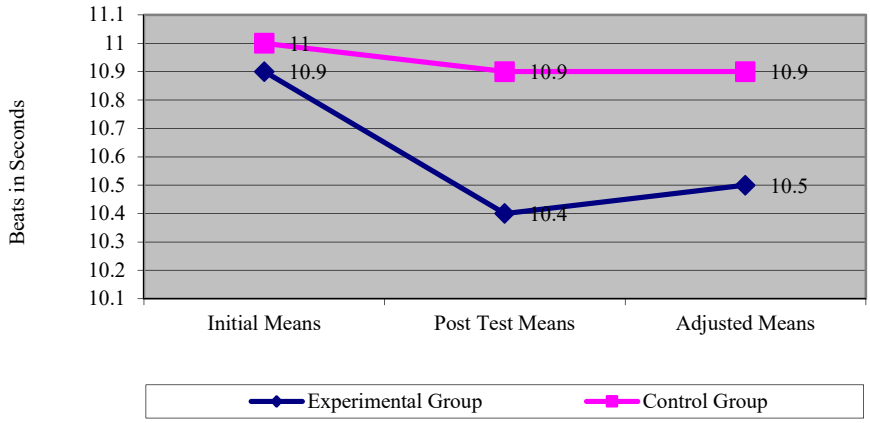
Computation Of Analysis Of Covariance On Agility

	Experimental group	Control	Source of variance	Sum of squares	Df	Mean squares	Obtained f
Pre Test Mean	51.13	52.93	Between	48.60	1	48.60	1.09
			Within	2583.33	58	44.54	
Post Test Mean	56.67	52.97	Between	205.35	1	205.35	6.17*
			Within	1929.63	58	33.27	
Adjusted Post Test Mean	57.38	52.25	Between	388.20	1	388.20	76.80*
			Within	288.12	57	5.05	
Mean Diff	5.53	0.03					

Table F-ratio at 0.05 level of confidence for 1 and 58 (df) =4.01, 1 and 57(df) =4.01 * Significant

The pre test mean on experimental group was 51.13, and control group was 52.93 and the obtained F value was 1.09, which was less than the required F value of 4.01 to be significant. Hence, it was not significant and the groups were equal at initial stage. The comparison of post test means, experimental group 56.67 and control group 52.97 proved to be significant at 0.05 level as the obtained F value 6.17 was greater than the required table F value of 4.01 to be significant at 0.05 level. Taking into consideration the initial and final mean values adjusted post test means were calculated and the obtained F value of 76.80 was greater than the required F value to be significant 4.01 and hence, there was significant difference. Thus, it was proved that experimental group gained mean difference on, Agility 5.53 was due to SAQ training given to football players, and the difference was found to be significant at 0.05 level. The initial, post and adjusted means values of experimental and control group on Agility is presented in Figure I1 for better understanding of the results of this study. **Figure I1**

Bar Diagram Showing Initial, Final and Adjusted Means on Agility of Experimental and Control Groups



RESULTS ON DRIBBLING

The initial and final means on SAQ training group and control group on Dribbling among football players and the obtained results on Analysis of Covariance (ANCOVA) is presented in **Table II -COMPUTATION OF ANALYSIS OF COVARIANCE ON DRIBBLING**

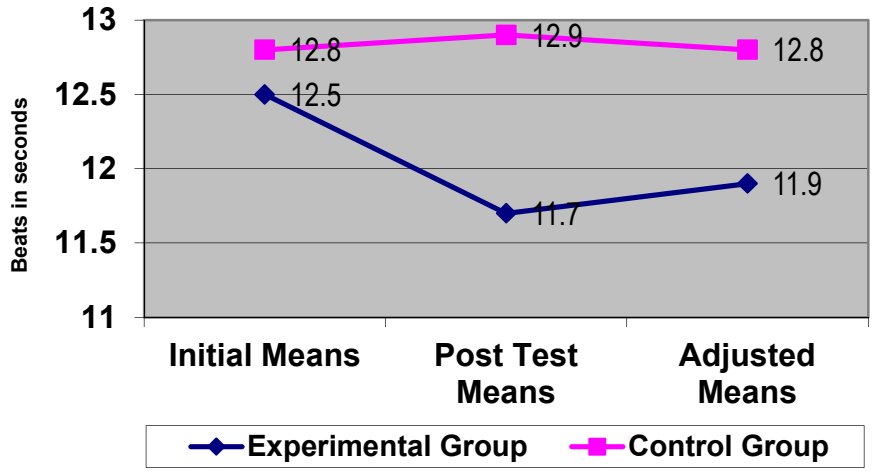
	EXPERIMENTAL GROUP	CONTROL	SOURCE OF VARIANCE	SUM OF SQUARES	DF	MEAN SQUARES	OBTAINED F
Pre Test Mean	55.30	56.50	Between	21.60	1	21.60	1.01
			Within	1235.80	58	21.31	
Post Test Mean	51.77	55.57	Between	216.60	1	216.60	10.99*
			Within	1142.73	58	19.70	
Adjusted Post Test Mean	52.27	55.06	Between	114.72	1	114.72	24.54*
			Within	266.50	57	4.68	
Mean Diff	-3.53	-0.93					

Table F-ratio at 0.05 level of confidence for 1 and 58 (df) =4.01, 1 and 57(df) =4.01 .

* Significant

The pre test mean on experimental group was 55.30, and control group was 56.50 and the obtained F value was 1.01, which was less than the required F value of 4.01 to be significant. Hence, it was not significant and the groups were equal at initial stage. The comparison of post test means, experimental group 51.77 and control group 55.57 proved to be significant at 0.05 level as the obtained F value 10.99 was greater than the required table F value of 4.01 to be significant at 0.05 level. Taking into consideration the initial and final mean values adjusted post test means were calculated and the obtained F value of 24.54 was greater than the required F value to be significant 4.01 and hence, there was significant difference. Thus, it was proved that experimental group gained mean difference on, Dribbling -3.53 was due to SAQ training given to football players, and the difference was found to be significant at

0.05 level. The initial, post and adjusted means values of experimental and control group on Dribbling is presented in Figure II1 for better understanding of the results of this study.**Figure II1-Bar Diagram Showing Initial, Final and Adjusted Means on Dribbling of Experimental and Control Groups**



FINDINGS

Based on the results presented it was found that the 12 weeks SAQ training can significantly improve performance related physical fitness variables, speed, agility, cardiovascular endurance and flexibility and performance skill variables, trapping, kicking, dribbling, passing among college level football players.

CONCLUSIONS

Within the limitations and delimitations of this study, the following conclusions were drawn.

It was concluded that 12 weeks SAQ training on selected performance related variables, agility respectively proved that the obtained F values were greater than the required F value to be significant at 0.05 levels. The adjusted mean comparisons between SAQ group and control group proved that the SAQ group was significantly better than control group in improving selected performance related variables, agility of intercollegiate level football players.

It was concluded that based on the results presented that selected performance skill variables, dribbling .that the obtained F values were greater than the required F value to be significant at 0.05 level. The adjusted mean comparisons between SAQ group and control group proved that the SAQ group was significantly better than control group in improving selected performance skill variables, dribbling of intercollegiate level football players.

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Effect of combined effect of plyometric training and weight training on muscular endurance and breath holding time among university male athletes.

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Introduction

Proper growth and maintenance of good health, participation in daily physical activities is an indispensable one. The high level of physical fitness comes from years of daily experience in a selected variety of vigorous physical activities. It is a biological principle that function builds structure and structure decides function. Man needs vigorous exercises for growth and development. To perform the daily activities in a more efficient manner, a condition of muscles, their strength and endurance are essential to man. A muscle must be overloaded in order to be strengthened.(Hooks 1962)

Need of the Study

Plyometric training and weight training are adopted by the coaches and fitness experts to improve the fitness qualities of athletes. There has been a lot of studies conducted on plyometric training outcomes of which mainly focusing on jumping ability and, weight training that highlights strength and power of athletes. But there are only a few studies have been conducted by combining the plyometric training and weight training. Hence, the investigator was interested to conduct a study to find out the combined effect of plyometric training and weight raining on selected motor fitness components and physiological variables of university male athletes

Objectives of the Study

The objectives of the study were:

1. To design and implement plyometric training, weight training and combination of plyometric and weight training for a period of 12 weeks.
2. To measure the selected motor fitness and physiological variables, namely, muscular endurance and breath holding time.
3. To determine the influence of plyometric, weight training and combined training on selected motor fitness and physiological variables among university men athletes.

Statement of the Problem

The purpose of the study was to find out effect of combined effect of plyometric training and weight training on muscular endurance and breath holding time among university male athletes.

Hypotheses

1. It was hypothesized that there would be a significant difference on the improvement of selected motor fitness components namely, muscular endurance due to combined training, plyometric training and weight training compared to control group.
2. It was hypothesized that there would be a significant difference on the improvement of selected physiological variables breath holding time due to combined training, plyometric training and weight training compared to control group.
3. It was hypothesized that comparing to experimental groups, there would be no significant difference among combined training, plyometgric training and weight training in altering selected motor fitness variables.
4. It was hypothesized that comparing to experimental groups, there would be no significant difference among combined training, plyometgric training and weight training in altering selected physiological variables of University athletes.

Significance of the Study

1 The results of the study would be helpful to the physical education teachers and coaches in designing combined plyometric and weight training programme
2 The results of the study would add knowledge and new information in the field of physical education and sports.
3 The results of the study would reveal the isolated effect of plyometric, weight training and combined training on the selected motor fitness and physiological variables.
4 The results of the study would be helpful to the physical education teachers and coaches to avoid musculoskeletal injuries through plyometric, weight training and combined training.

Delimitations

1. Eighty men athletes who represented their college at University level competitions were selected at random.
2. Their age ranged between 18 and 25 years.
3. The selected 80 men subjects were divided into plyometric training, weight training, combined training and control groups, each group consisted of 20 subjects.
4. The motor fitness variables such as muscular endurance were selected for the purpose of the study.
5. The physiological variables, breath holding time were selected for the purpose of the study.
6. The training was given on alternative days of a week for a period of 12 weeks.
7. Only selected plyometric training and selected weight training, were selected for this study.

Limitations

1. The diet of the subjects was not restricted with strict observation.
2. The socio-economic background of the subjects was not considered for the purpose of the study.
3. The heredity and the environment of the subjects were not considered in this study.
4. The psychological stresses and other factors, which affect the metabolic functions, were not taken into consideration.
5. The other extraneous factors which would have influenced the results of the study were not controlled.

Methodology

In this chapter, the selection of subjects, selection of variables, selection of tests, pilot study, reliability of the instruments, reliability of the data, competence of tester, orientation to the subjects, training programme, collection of the data, tests administration, experimental design and statistical procedures have been explained.

The purpose of the study was to find out effect of combined effect of plyometric training and weight raining on selected motor fitness components and physiological variables of university male athletes. The selected motor fitness variables are leg strength, muscular endurance, muscular strength and flexibility and physiological variables are resting pulse rate, breath holding time, vital capacity and cardiovascular endurance.

Selection of Subjects

To achieve the purpose of the study, 80 male athletes who represented their college in university level competitions were randomly selected. The subjects were selected from various arts and science colleges in Andhra Pradesh. India. The age of the subjects ranged between 18 and 25 years. The selected subjects were fit to undergo the experimental training and gave their written consent to participate in the study.

The demographic profile of the subjects selected were given in Table I.

Demographic Profile of the Selected Subjects

	Age (Years)	**Height (Meters)**	**Weight (Kilograms)**
Mean	22.1	1.698	63.7
SD	1.984	0.0279	2.4654
Minimum	19	1.65	58
Maximum	25	1.75	68

Selection of Variables

Based on the available scientific literatures pertaining to plyometric training, weight training and combined training and in consultation with experts, the following dependent variables were selected for this study.

Dependent Variables

Motor Fitness Variables

a. Muscular Endurance

Physiological variables

a. Breath holding time

Independent Variables

1. Plyometric training for 12 weeks
2. Weight training for 12 weeks

3. Combined training (Plyometric and Resistance) for 12 weeks

Research Design

The research design of the study was random group design. 80 male athletes (N=80) who represented their college in university level competitions were selected at random. The selected subjects were randomly divided into four groups and assigned into plyometric training group (Group-I), weight training group (Group-II) and combined training group (Group-III) and control group. Each group consisted of 20 subjects. The training period was 12 weeks and three sessions a week on alternative days. Prior to experimental treatments all the subjects were measured of the criterion variables selected for this study. After the completion of the experimental period, the all the subjects were again measured of the criterion variables selected. The differences between the initial and final means on criterion variables were considered as the effect of respective treatment among the subjects. To test statistical significance of the difference, the obtained data were analysed using ANCOVA. In all cases 0.05 level

Administration of Tests

Muscular Endurance (Bent Knee Sit ups for 1 Minute)

Purpose

The purpose of the sit-ups test was to assess the muscular endurance of the abdominals and hip flexors.

Equipments used

Exercise mat, stop watch, testing forms to record data

Testing Procedure

The subjects were asked to lie on supine position on the floor with knees bent at 90 degrees heels about 18 inches from the buttocks ,the feet flat on the floor approximately to the shoulders width and fingers next to the ears. A partner holed the ankles firmly for support. For the command 'Ready start' from the timer, the subjects lifted the upper body away from the floor, curling towards the knees, until the elbows touched the thighs and performed as many sit-ups as possible within one –minute period. After each movement, the subjects returned to the supine position before going up again; shoulders returned to touch the mat. The stop watch was operated for the command 'Ready start' and stopped after the expiry of one minute **(Jim clover, 2001).**

Scoring

The score was correct sit-ups performed within the number of one minute.

Breath Holding Time

Objective: The purpose of this test was to measure the breath holding time.

Equipments: For recording the breath holding time, a stop watch ($1/10^{th}$ of second) and nose clip were used.

Administration:

The subject was instructed to stand at ease and to inhale deeply after which he holds his breath for a length of time possible by him. A nose clip was placed on nose to avoid letting the air through nostrils. The duration from

the time of holding his breath until the movement he let air out was clocked by using the stop watch to the nearest one tenth of a second as breath holding time. The co-operation of the subject to let out the air by opening the mouth was sought to clock the exact breath holding time.

Scoring: The time is recorded in seconds and the beset of two trials were recorded (Mathew, 1988).

Statistical Procedures

The data were analyzed by using Analysis of Covariance (ANCOVA) as recommended by **Clarke and Clarke (1972)** and **Best and Khan (1986)**. In all the cases 0.05 level was fixed as level of significance which was considered as appropriate. Since, three groups were compared, whenever the obtained 'F' ratio for the adjusted post test was found to be significant, the Scheffe's post hoc test was applied as post hoc test to find out the paired mean differences, if any. In all cases, 0.05 level was fixed as level of confidence to test the significance which was considered as appropriate.

Results on Muscular Endurance

The descriptive statistics comparing the initial and final means of motor ability component Muscular Endurance due to plyometric training, weight training, combined training and control groups of university male athletes is presented in Table II

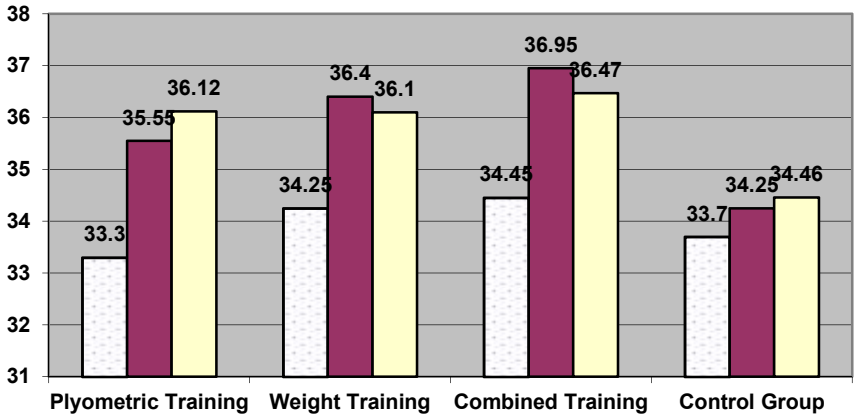
Descriptive Statistics on Plyometric training, Weight training, Combined training and Control Groups

Groups	Test	Mean	Standard Deviation	RANGE	
				Min	Max
Plyometric training	Initial	33.30	5.44	26.00	43.00
	Final	35.55	4.88	29.00	44.00
	Adjusted Mean	36.12			
Weight training	Initial	34.25	5.50	26.00	43.00
	Final	36.40	4.94	29.00	44.00
	Adjusted Mean	36.10			
Combined training	Initial	34.45	4.71	28.00	43.00
	Final	36.95	4.11	31.00	44.00
	Adjusted Mean	36.47			
Control Group	Initial	33.70	5.20	27.00	43.00
	Final	34.25	5.25	28.00	44.00
	Adjusted Mean	34.46			

Table II shows that the pre test mean on Muscular Endurance of plyometric training group was 33.30 with standard deviation $\pm$ 5.44 pre test mean of weight training group was 34.25 with standard deviation $\pm$ 5.50, the pre test mean of combined training group was 34.45 with standard deviation $\pm$ 4.71, the pre test mean of control group was 33.70 with standard deviation $\pm$ 5.20. The descriptive statistics on post test mean on Muscular Endurance of plyometric training group was 35.55 with standard deviation $\pm$ 4.88 post test mean of weight training group was

36.40 with standard deviation ± 4.94, the post test mean of combined training group was 36.95 with standard deviation ± 4.94, the post test mean of control group was 34.25 with standard deviation ± 5.25. The adjusted mean on Muscular Endurance on plyometric training group was 36.12, weight training group was 36.10, combined training group was 36.47 and control group was 34.46, as shown in Table II.

The obtained mean values on the experimental and control groups were presented in Figure **I-BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED MEANS ON MUSCULAR ENDURANCE DUE TO PLYOMETRIC, WEIGHT AND COMBINED TRAINING**



The results on descriptive statistics proved that motor ability component Muscular Endurance was improved. And to test statistical significance of the differences, the obtained data on Muscular Endurance using ANCOVA was presented in Table III.-Computation Of Analysis Of Covariance Due To Plyometric Training, Weight Training And Combined Training And Control Group On Muscular Endurance

	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre Test Mean	Between	16.45	3	5.48	0.20
	Within	2071.10	76	27.25	
Post Test Mean	Between	82.94	3	27.65	1.19
	Within	1760.45	76	23.16	
Adjusted Post Test Mean	Between	48.97	3	16.32	37.44*
	Within	32.70	75	0.44	

Required $F_{(0.05),\,(df\,3,75)}$ =2.77 * Significant at 0.05 level of confidence

As shown in Table III, the obtained F ratio of 0.20 on pre test means of the groups was not significant at 0.05 level as the obtained F value was less than the required table F value of 2.77 to be significant at 0.05 level. This shows that there was no significant difference in means of the groups at initial stage. The results presented in Table III, the obtained F ratio of 1.19 on post test means of the groups was significant at 0.05 level as the obtained F value

was greater than the required table F value of 2.77 to be significant at 0.05 level. This shows that there was no significant difference in means of the groups at post test stage. Taking into consideration of the pre test means and post test means, adjusted post test means were determined and analysis of covariance was done. The obtained F value on adjusted means was 37.44. The obtained F value was greater than the required value of 2.77 and hence it was accepted that there was significant differences among the adjusted means on the Muscular Endurance of the subjects. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table IV-**Multiple Comparisons between Plyometric Training, Weight training, Combined training and Control Groups and Scheffe's Post Hoc Analysis on Muscular Endurance**

Plyometric training Group	Weight training Group	Combined training Group	Control Group	MEAN DIFF	C.I
36.12	36.10			0.02	0.60
36.12		36.47		-0.35	0.60
36.12			34.46	1.67*	0.60
	36.10	36.47		-0.37	0.60
	36.10		34.46	1.65*	0.60
		36.47	34.46	2.01*	0.60

* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that to be significant at 0.05 level confidence the required confidence interval was 0.60. The following paired mean comparisons were greater than the required confidence interval and were significant at 0.05 level.

Plyometric training Vs Control Groups (MD: 1.67), Weight training Vs Control Groups (MD: 1.65), Combined training Vs Control Groups (MD: 2.01). The following paired mean comparisons were less than the required confidence interval and were not significant at 0.05 levels. Plyometric training Vs Weight training Groups (MD: 0.02), Plyometric training Vs Combined training Groups (MD: -0.35) & Weight training Vs Combined training Group (MD: -0.37)

Results on Breath Holding Time

The descriptive statistics comparing the initial and final means of motor ability component Breath Holding time due to plyometric training, weight training, combined training and control groups of university male athletes is presented in TableV-**Descriptive Statistics on Plyometric training, Weight training, Combined training and Control Groups**

Groups	Test	Mean	Standard Deviation	RANGE	
				Min	Max
Plyometric training	Initial	41.80	9.52	28.00	58.00
	Final	50.25	8.68	39.00	65.00
	Adjusted Mean	50.10			
Weight training	Initial	41.50	9.96	29.00	57.00

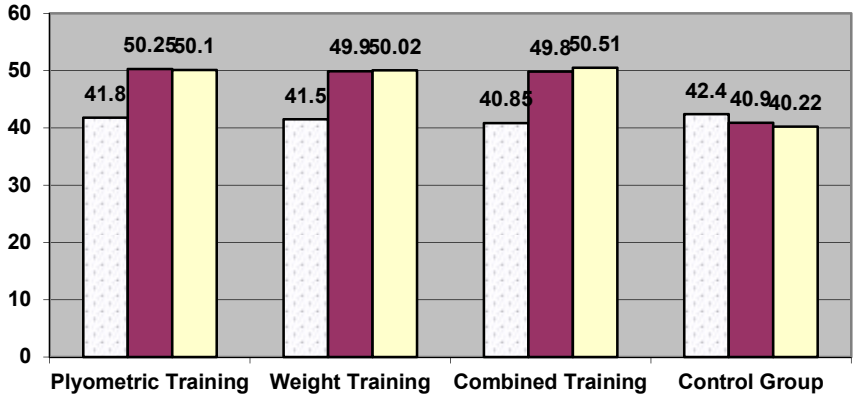
	Final	49.90	9.73	36.00	65.00
	Adjusted Mean	50.02			
Combined training	Initial	40.85	8.74	28.00	58.00
	Final	49.80	7.87	39.00	65.00
	Adjusted Mean	50.51			
Control Group	Initial	42.40	2.70	38.00	48.00
	Final	40.90	1.83	39.00	44.00
	Adjusted Mean	40.22			

Table V shows that the pre test mean on Breath Holding time of plyometric training group was 41.80 with standard deviation ± 9.52 pre test mean of weight training group was 41.50 with standard deviation ± 9.96, the pre test mean of combined training group was 40.85 with standard deviation ± 8.74, the pre test mean of control group was 42.40 with standard deviation ± 2.70.

The descriptive statistics on post test mean on Breath Holding time of plyometric training group was 50.25 with standard deviation ± 8.68 post test mean of weight training group was 49.90 with standard deviation ± 9.73, the post test mean of combined training group was 49.80 with standard deviation ± 9.73, the post test mean of control group was 40.90 with standard deviation ± 1.83.

The adjusted mean on Breath Holding time on plyometric training group was 50.10, weight training group was 50.02, combined training group was 50.51 and control group was 40.22, as shown in Table V.

The obtained mean values on the experimental and control groups were presented in Figure-I-Bar Diagram Showing Pre, Post And Adjusted Means On Breath Holding Time Due To Plyometric, Weight And Combined Training



The results on descriptive statistics proved that motor ability component Breath Holding time was improved. And to test statistical significance of the differences, the obtained data on Breath Holding time using ANCOVA was presented in Table VI.-Computation Of Analysis Of Covariance Due To Plyometric Training, Weight Training And Combined Training And Control Group On Breath Holding Time.

	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre Test Mean	Between	24.94	3	8.31	0.12
	Within	5199.55	76	68.42	
Post Test Mean	Between	1239.84	3	413.28	7.02*
	Within	4472.55	76	58.85	
Adjusted Post Test Mean	Between	1496.68	3	498.89	131.29*
	Within	284.99	75	3.80	

Required $F_{(0.05),\,(df\,3,75)}$ =2.77 * Significant at 0.05 level of confidence

As shown in Table VI, the obtained F ratio of 0.12 on pre test means of the groups was not significant at 0.05 level as the obtained F value was less than the required table F value of 2.77 to be significant at 0.05 level. This shows that there was no significant difference in means of the groups at initial stage. The results presented in Table VI, the obtained F ratio of 7.02 on post test means of the groups was significant at 0.05 level as the obtained F value was greater than the required table F value of 2.77 to be significant at 0.05 level. This shows that there was significant difference in means of the groups at post test stage. Taking into consideration of the pre test means and post test means, adjusted post test means were determined and analysis of covariance was done. The obtained F value on adjusted means was 131.29. The obtained F value was greater than the required value of 2.77 and hence it was accepted that there was significant differences among the adjusted means on the Breath Holding time of the subjects. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in **Table VII-Multiple Comparisons between Plyometric Training, Weight training, Combined training and Control Groups and Scheffe's Post Hoc Analysis on Breath Holding time**

Plyometric training Group	Weight training Group	Combined training Group	Control Group	MEAN DIFF	C.I
50.10	50.02			0.08	1.76
50.10		50.51		-0.40	1.76
50.10			40.22	9.89*	1.76
	50.02	50.51		-0.48	1.76
	50.02		40.22	9.81*	1.76
		50.51	40.22	10.29*	1.76

Significant at 0.05 level.The post hoc analysis of obtained ordered adjusted means proved that to be significant at 0.05 level confidence the required confidence interval was 1.76. The following paired mean comparisons were greater than the required confidence interval and were significant at 0.05 level. Plyometric training Vs Control Groups (MD: 9.89), Weight training Vs Control Groups (MD: 9.81) & Combined training Vs Control Groups (MD: 10.29). The following paired mean comparisons were less than the required confidence interval and were not significant at 0.05 level.

Plyometric training Vs Weight training Groups (MD: 0.08), Plyometric training Vs Combined training Groups (MD: -0.40) & Weight training Vs Combined training Group (MD: -0.48)

Findings

Based on the results presented in the previous chapter, the study found that isolated plyometric training, weight training and combined training for 12 weeks significantly altered selected motor fitness and physiological variables of university men athletes compared to control group. However, the mean gains of experimental groups were not found to be significant on selected criterion variables.

Conclusions

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that 12 weeks plyometric training, weight training and combined training significantly improved motor fitness variables, muscular strength, of university men athletes compared to control group. The mean differences among experimental groups on these motor fitness variables were not significant among the university level athletes.
2. It was concluded that 12 weeks plyometric training, weight training and combined training significantly altered physiological variables, breath holding time of university men athletes compared to control group. The mean differences among experimental groups on these physiological variables were not significant among the university level athletes.

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Effect of Stair Case Training and Core Strength Training on Strength and Speed Variables of Intercollegiate Level Athletes.

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Introduction

Over the course of the past twenty years an increasing amount of attention has been devoted to the field of athletics. Whether it be at a collegiate or professional level, organizations have been faced with public pressure to be successful. As a result, athletic directors and general managers have been faced with the question of how to improve their teams' success. One obvious way of doing this is to select qualified personnel for the tasks at hand. The method by which athletes are selected for a team can have a significant impact on that team's success. In the past, decisions have been made based largely on judgments of an individual's physical characteristics with little attention given to the psychological factors that contribute to athletic success. Coaches are experts in identifying the physical characteristics needed for success in their field; however, they lack the skills necessary to asses the psychological factors that have been proven to have a significant impact on athletic performance

Stair Case Training

"Training programme which have been used to improve sprinting speed include weight training, wind sprint stairs sprinting. Such programmes are designed to develop leg strength, leg speed, speed endurance and explosive power.(Mac Miller, 1974) · Staircase training is a suitable exercise to burn fat and improve the condition of heart and lungs. Staircase training is a creative, fund and very challenging patterns of movement, that is, on and off stair case can challenge the legs, foot steps and arms also. Correct staircase or stepping technique also prevent injuries and improves performance.

Core Strength Training

The terms "core" or "core strength" are some of the most common words / phrases heard around the gym or track in recent years. Many runners would accept the idea that it would be desirable to have a strong core, but rarely do we think about what that really means or why exactly it would be helpful. (Dena Evans, 2013)· Core strength training may be a relatively new, buzz term in the fitness industry but coaches and athletes have understood its value for many years. The core region consists of far more than just the abdominal muscles. In fact core strength training aims to target all the muscles groups that stabilize the spine and pelvis. It's these muscle groups that are critical for the transfer of energy from large to small body parts during many sporting activities.

Need of the Study

Physical fitness helps to enjoy physical activity sustain skills, learning and enhance performance on the athletic field. Specific physiological systems of the body should be adopted to support a particular game. Since

different games make different demands upon the organism with respect to neurological, cardio-respiratory systems are highly adaptable to exercise (Willmore, 1982) .

The athletes and coaches advocates different training and coaching methods to improve their biomotor and performance variables of athletes. The investigator was interested to find out the effect of stair case training and core training on selected biomotor and performance variables such of intercollegiate level athletes.

Statement of Problem

Hence, the investigator outlines the purpose of the study as to find out the effect of stair case training and core strength training on strength and speed variables of intercollegiate level athletes.

Objectives of Study

1. To estimate the effects of stair case training and core strength training on selected biomotor variables, strength of intercollegiate level athletes.
2. To estimate the effects of stair case training and core strength training on selected performance variables, speed of intercollegiate level athletes
3. To compare the effect of stair case training and core strength training on selected biomotor variables and performance variables of intercollegiate level athletes.

Hypotheses

1. It was hypothesized that stair case training and core strength training would significantly influence selected biomotor variables strength compared to control group.
2. It was hypothesized that stair case training and core strength training would significantly influence selected performance variables speed of intercollegiate level athletes compared to control group.
3. It was hypothesized that there would not be no significant difference between treatment groups, namely, stair case training and core strength training on selected biomotor and performance variables of intercollegiate level athletes.

Significance of Study

Although the results of several studies seem to indicate that stair case training and core strength training might improve selected biomotor and performance variables of athletes. And the present study would be significant in the following ways:

1. The study would be significant in linking link between stair case training on athlete's biomotor and performance variables that could pave way for stair case training to be applied in athletic training.
2. The study would be significant in linking link between core strength training on athlete's biomotor and performance variables that could pave way for core strength training to be applied in athletic training.
3. Further with the present study design that determined the variable most influenced by these forms of training among the athlete's biomotor and performance indicators, that require improvement of this specific attributes in athletes may adopt the same as part of training.
4. Results of the present study would pave way for further research on stair case training and core strength training that evidence database that defines the role of exercise interventions based on stair case training and core training in athletic training.

Delimitation

The study was delimited in the following aspects

1. 75 Intercollegiate level athletes competed in different disciplines of athletic events, represented their Colleges were selected as subjects randomly from different colleges in Andhra Pradesh.
2. The selected subjects were in the age group of 18 to 25 years.
3. The students reported a history of a musculoskeletal pathology, or any serious disability or ongoing medical condition were excluded from the study.
4. The selected subjects were grouped into three, namely, stair case training group, core strength training and control groups.
5. The following variables were selected for this study

a. **Dependent Variables**
Biomotor Variables

i. Strength

Performance Variables

ii. Speed

b. **Independent Variables**
i. Stair Case Training for 12 weeks
ii. Core Training for 12 weeks

Limitation

This study was limited in the following aspects.

1. Socio-economic and cultural status of the subjects were not taken into consideration.
2. Factors like nutrients, heredity, environment, life style habits and the students programme outside the college were not taken into consideration.
3. The height and weight of the subjects were not taken into consideration.
4. Previous training of the subjects of any kind prior to six months of experimental treatment were not taken into consideration.
5. The climatic conditions at the time of testing the subject would have influenced the results.
6. Daily routine of the subjects were not controlled.
7. The amount of sleep the subject had prior to testing was not taken into consideration.
8. The subjects emotional state, medication underwent prior to six months of experimental period, caffeine intake were not considered for this study.

Definition of Terms

Biomotor Variables: For the purpose of the study, biomotor variables strength, endurance, coordination and flexibility were selected

Athletic performance physical fitness variables: For the purpose of the study, athletic performance physical fitness variables, speed, agility, explosive power and reaction time were selected.

Stair case Training: exercise apparatus that stimulates the act of climbing stairs is considered as stair case training for the purpose of the study.

Core Training:A training programme that contains the progressive training of the musculature of the lumbo-pelvic-hip complex and or the transverses abdomens, which has a central role in posture and in stabilizing the lumbar spine is considered as core training.

Methodology

The purpose of the study was to find out the effect of stair case training and core training on selected biomotor and performance variables of intercollegiate level athletes. In this chapter, selection of subjects, selection of variables, research design, tester reliability, and instrument reliability, orientation of the subject, training methods, test administration, and statistical techniques are discussed.

Selection of Subjects

In this study, the investigator was interested to find out the effects of stair case training and core training on selected biomotor and performance variables of intercollegiate level athletes. To achieve the purpose of the study, the investigator randomly selected active young adults between age group of 18 to 25 years, who were studying in different colleges in Andhra Pradesh and represented their colleges in intercollegiate level track events.

Finally, randomly selected 75 intercollegiate level male athletes from different events were selected for this study. Subjects were randomly allocated into three groups, namely, experimental group I, experimental group II and control group. Those in the interventional groups were oriented to the exercise program that needed to be followed along the course of study. Method of training, duration and the testing procedures were explained in detail.

Experimental Design

For this purpose, pre- test post-test random group design was followed in this research. Subjects, college students were randomly selected based on inclusion and exclusion criteria were divided into three groups, namely, experimental group I, experimental group II and control group. Experimental group I underwent 12 weeks stair case training experimental group II underwent core training for 12 weeks and the control group was kept strictly under control and not involved in any special activities. Prior to experimental treatment, all the subjects were measured of selected variables, namely, biomotor and performance variables Scores on prior to and after completion of experimental treatment on were collected, which formed pre and post experimental scores. The difference between the initial and final means was considered as the effects of stair case training and core training on selected biomotor and performance variables. The obtained data were subjected to statistical analysis using ANCOVA to compare the initial and final scores in all cases 0.05 level was fixed to test the hypothesis.

Criterion Measures

By reviewing literature, and in consultation with professional experts, the researcher selected tests to assess the variables selected for this study, which is presented in Table I. **Showing the Variables, Tests and Units of**

Measures for the Study

S.No	Variable	Test	Unit of Measurements
1.	**Biomotor Variables**		
	Muscular Strength	Push ups	Numbers
1.	**Performance Variables**		
	Speed	50 Run	Seconds

The intraclass correlation coefficient obtained for test-retest data are presented in Table II.- **Intra Class Correlation Coefficient of Test – Retest Scores**

S.No	Variable	Test	Obtained 'r'
	Biomotor Variables		
1.	Muscular Strength	Push ups	0.94*
	Performance Variables		
1.	Speed	50 Run	0.88*

* Significant at 0.01 level.

Collection of Data

Data on the tests administered as per procedure described above, were collected from the subjects at initial assessment and at the end of 12th week of the experimental treatment. The collected data were tabulated and put to statistical analysis.

Statistical Procedure

Statistical analysis were performed using SPSS (Version 11). All data were visually and statistically inspected for normality of distribution. Analysis of covariance (ANCOVA) calculated to compare the pre and post intervention data to estimate statistical significance of the difference within group and between groups, keeping the level of significance at 5%. Further, pair wise comparison was done through Scheffe's post hoc analysis, where significant results were found due to experimental treatments.

Computation of Analysis of Covariance and Post-Hoc Test

Results on Strength

The statistical analysis comparing the initial and final means of Strength due to Stair case training and Core training exercises among intercollegiate level athletes is presented in Table III- **Ancova Results on Effect of Stair Case Training and Core Training Exercises Compared with Controls on Strength**

	Stair case training	**Core training exercises**	**Control group**	**Source of variance**	**Sum of squares**	**Df**	**Mean squares**	**Obtained f**
Pre Test Mean	35.04	34.44	35.12	Between	6.91	2	3.45	1.35
				Within	183.76	72	2.55	
Post Test Mean	37.32	38.44	35.84	Between	85.04	2	42.52	10.90*
				Within	280.96	72	3.90	
Adjusted Post Test Mean	37.21	38.70	35.69	Between	109.99	2	55.00	18.29*
				Within	213.52	71	3.01	
Mean Diff	2.28	4	0.72					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.16, 2 and 71 (df) =3.16.

*Significant-As shown in Table III, the obtained pre test means on Strength on Stair case training group was 35.04, Core training exercises group was 34.44 was and control group was 35.12. The obtained pre test F value was 1.35

and the required table F value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

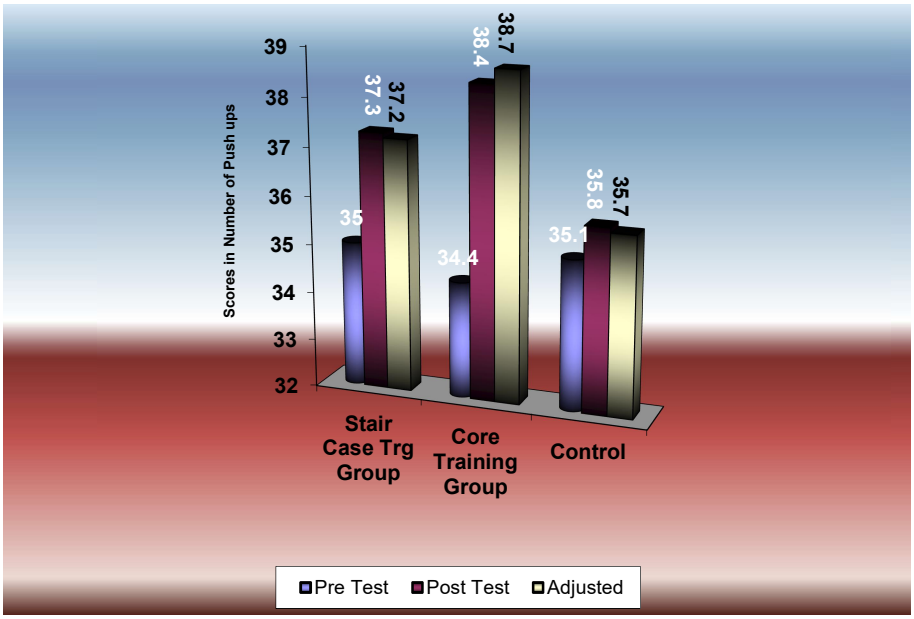
The obtained post test means on Strength on Stair case training group was 37.32, Core training exercises group was 38.44 was and control group was 35.84. The obtained post test F value was 10.90 and the required table F value was 3.16, which proved that there was significant difference among post test scores of the subjects. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 18.29 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-IV

Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Strength

MEANS				Required . C I
Stair case training Group	Core training exercises Group	Control Group	Mean Difference	
37.21	38.70		-1.48*	1.22
37.21		35.69	1.53*	1.22
	38.70	35.69	3.01*	1.22

* Significant- The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Stair case training group and control group (MD: 1.53). There was significant difference between Core training exercises group and control group (MD: 3.01). There was significant difference between treatment groups, namely, Stair case training group and Core training exercises group. (MD: -1.48).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.**Bar Diagram Showing Pre Test, Post Test and Ordered Adjusted Means on Strength**



Results on Speed

The statistical analysis comparing the initial and final means of Speed due to Stair case training and Core training exercises among intercollegiate level athletes is presented in

Table -V Ancova Results On Effect of Stair Case Training and Core Training Exercises Compared With Controls on Speed

	STAIR CASE TRAINING	CORE TRAINING EXERCISES	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED F
Pre Test Mean	7.13	7.06	7.12	Between	0.06	2	0.03	1.03
				Within	2.27	72	0.03	
Post Test Mean	6.94	6.88	7.11	Between	0.69	2	0.34	8.47*
				Within	2.93	72	0.04	
Adjusted Post Test Mean	6.91	6.93	7.10	Between	0.52	2	0.26	50.06*
				Within	0.37	71	0.01	
Mean Diff	-0.19	-0.18	-0.01					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.16, 2 and 71 (df) =3.16.

*Significant- As shown in Table V, the obtained pre test means on Speed on Stair case training group was 7.13, Core training exercises group was 7.06 was and control group was 7.12. The obtained pre test F value was 1.03 and the required table F value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post test means on Speed on Stair case training group was 6.94, Core training exercises group was 6.88 was and control group was 7.11. The obtained post test F value was 8.47 and the required table F value was 3.16, which proved that there was no significant difference among post test scores of the subjects.

Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 50.06 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table VI

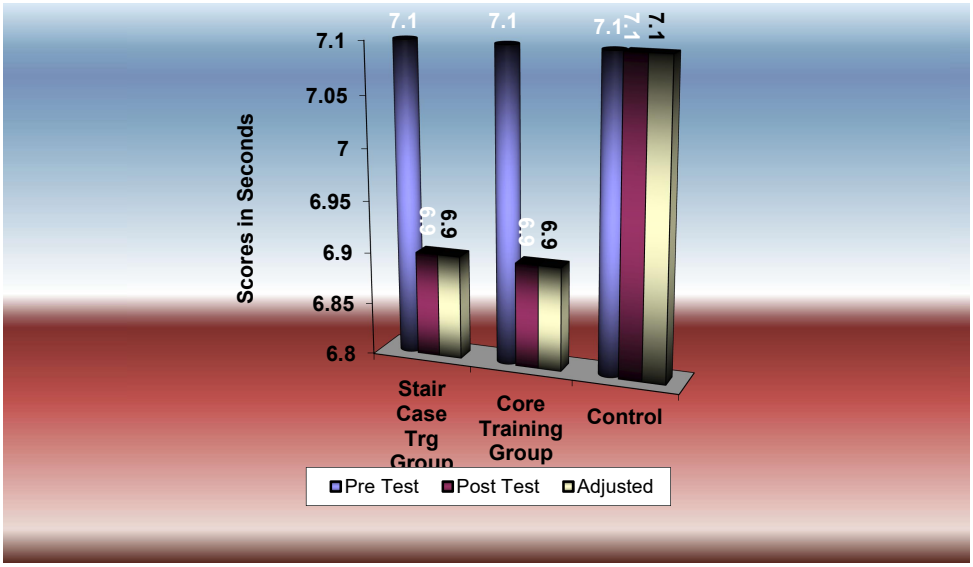
Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Speed

MEANS				Required . C I
Stair case training Group	Core training exercises Group	Control Group	Mean Difference	
6.91	6.93		-0.02	0.05
6.91		7.10	-0.18*	0.05
	6.93	7.10	-0.17*	0.05

* Significant- The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Stair case training group and control group (MD: -0.18). There was significant difference between Core training exercises group and control group (MD: -0.17). There was significant

difference between treatment groups, namely, Stair case training group and Core training exercises group. (MD: -0.02).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-II- **Bar Diagram Showing Pre Test, Post Test and Ordered Adjusted Means on Speed**



Conclusions

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was found that 12 weeks stair case training and core training significantly improved strength of the intercollegiate athletes compared to control group. It was also found that core training was significantly better than stair case training in improving strength.
2. It was found that 12 weeks stair case training and core training significantly improved speed of the intercollegiate athletes compared to control group. It was also found that there was no significant different between stair case training and core training in altering speed of the intercollegiate athletes.

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Stress Reduction Through Yoga

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Introduction

Highly stressed People are subject to greater health risks, increased cost, and productivity losses than those with normal stress levels. To address this issue in an evidence-based manner, worksite stress management programs must be able to engage individuals as well as capture data on stress, health indices, work productivity, and health care costs. These factors have in numerous health and financial implications for both men and women's. "Mental and emotional states can impinge upon and alter, for good or ill, any of the body's organs or systems". Low People satisfaction and little variation in People task are significantly associated with back and shoulder pain.

The majority of headaches that people experience are tension headaches resulting from chronic contraction of neck and shoulder muscles. "With more and more people spending greater amounts of time at the computer, the number of people suffering from carpal tunnel syndrome, the most common type of repetitive strain injury, is on the rise". People stress also may impact on an employee's mental health and may cause depressive, anxiety, or paranoid symptoms. Costs to People are considerable in terms of absentee rates, loss of productivity, and consumption of health care. Unfortunately, the stigma of "mental health disorders" or "stress-related disorders" thwarts many companies from becoming involved in occupational mental health and stress management. Yet, there has been increasing attention drawn to the legal responsibility of companies for health risks and disorders resulting from People stress.

Framework for Stress at Work

The workplace is an appropriate and important setting in which to deal with these "crisis proportion" health issues. For many, the worksite is a "prime locus of activity" where employees spend the majority of their days and where the worksite is a vital setting to advance healthy lifestyles. People a three-tiered prevention framework for dealing with stress-related health issues in the workplace. Primary intervention aims at "eliminating, reducing, or altering worksite demands" (e.g., task redesign programs). Secondary prevention aims at educating individuals on skills to manage stress (e.g., corporate fitness programs and relaxation training). Tertiary prevention aims at relieving suffering resulting from worksite demands (e.g., psychological counselling). Although primary intervention may be the preferred initial starting point, circumstances do not always allow for this to transpire due to individual traits and situational circumstances.

Therefore, secondary prevention "seems to be the stage at which we most often begin". Corporate health programs that do exist in the United States emphasize physical fitness and exercise. Lifestyle change is also a strong emphasis of corporate health programs. For example, Johnson and Johnson provides a worksite wellness program to

its People called, Live for Life. This program enhances wellbeing through motivation and behavioural modifications. Lifestyle change is emphasized through weight reduction and control, nutrition education, and stress management.

Yoga for Stress Reduction and Injury Prevention

Hatha yoga, an ancient mind-body exercise that incorporates breathing and postures to unify and relax the mind and body, has recently been introduced. Offering yoga to People is a convenient and practical way to relieve tension from stresses on the Peopleand educates People to decrease risks of injury. The breathing and postural techniques can be used "as a means of quietly and unobtrusively coping with the crises that occur during the working day". Yoga can be taught at group lunchtime workshops or after work hours in any space available at the work site, e.g., a conference room.

Once People learn the techniques from a certified teacher, they can independently practice the techniques in their own workspaces. Practicing yoga has been shown to reduce pain, relieve tension, reduce risks of injury, improve posture, improve communication, increase energy and attention span, and enhance feelings of overall wellness and well-being. In an empirical research study, participants in a yoga-based regimen demonstrated improved grip strength and pain reduction in the carpal tunnel area of the wrists. When People are at work, focusing on productivity, deadlines, meetings, and phone calls, the sympathetic nervous system (otherwise known as the "Fight or Flight" system) kicks in. Heart rate, breathing, blood pressure, and adrenaline are increased. Also, in this focused state of work, People may be unaware or her body positioning and motions and unconcerned about maintaining good postural alignment or taking rest breaks from repetitive movements. Yet, when the individual is practicing the postures, deep breathing, and stretching movements of yoga while working, he or she increases awareness of his or her body positioning and motions and can elicit the relaxation response.

In this case, the parasympathetic nervous system kicks in where muscle tension is reduced, less oxygen in consumed and less carbon dioxide is eliminated, and there is a decrease in the activity of the sympathetic nervous system. Breathing is the only system bodily function that is involuntary as well as voluntary. "If you can learn to control your breath, you can learn to control, or at least influence, how you feel both emotionally and physically". In comparison to Peoplestress, yoga has a dramatic and opposite effect on the body: decreased heart rate, breathing, and blood pressure. Being mindful of the body helps break the poor postural habits and encourages rest breaks from repetitive motions that may contribute to pain and risk for MSDs, thereby decreasing risks of injury. Yoga techniques are prevention skills for life. Although yoga is based on exercises and poses, it is done "without the possibility of further stressing an already stressed-out body".

Yoga classes begin with warm-ups such as head rolls or shoulder rolls. Classes continue with a series of standing, sitting, supine, and prone poses, most of which can be adapted to the sitting position. Finally, once the spine is completely warmed-up, classes may end with a spinal twist and a deep relaxation.

Conclusion

On a daily basis, People face stressors while on the job. This stress may affect the employee's physical and psychological well-being as well as the employer's finances and company morale. "People rush from their high pressure works and tune into the authoritatively mellow voice of an instructor, gently urging them to solder a union between mind and body. With increased clarity and mental acuity, People can return to their workdays with

improved communication, enhanced teamwork, and increased productivity. “The resulting unification of body and mind can have powerful benefits for the rest of one’s life, especially stress-related woes associated with professional’s hectic lives”. Hatha yoga has been shown to relax the body and mind thereby promoting overall improvement in mental and physical health and well-being.

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Effect of Yogic Training and Aerobics on Selected Bio- Chemical Variables among Diabetic Patients

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Introduction

Yoga means the experience of oneness or unity with inner being. This unity comes after dissolving the duality of mind and matter into supreme reality. It is a science by which the individual approaches truth. The aim of all yoga practice is to achieve truth where the individual soul identifies itself with the supreme soul or God. Yoga has the surest remedies for man's physical as well as psychological ailments. It makes the organs of the body active in their functioning and has good effect on internal functioning of the human body. Yoga is a re-education of one's mental process, along with the physical. The stages of yoga are eight, Yama, Niyama, Pranayama, Pratyahara, Dharana, Dhyana and Samathi, they are all integrated. (Iyangar, B.KS., 1999) Yoga is aimed at five universal commandments to create a better world; the five principles are non violence or ahimsa, freedom from greed, satya or truthfulness, charity, freedom from desire.

Five principles of Niyama are cleanliness; contentment; austerity, study of one's own self, which includes the body mind, intellect and ego and the final principle is devotion to God. Practice of postures (Asana) and conscientious practice of the various types of posture. Practice of breath control (Pranayama) is practicing breathing techniques with care and determination. Detachment from worldly activities (Pratyahara) is developing a non – attached attitude of body and mind. Concentration (Dharana) is being able to hold on to a subject mentally. Meditation (Dhyana) is a developing a quiet, meditative stage.Trance (or) state of bliss (Samathi) is reaching a state absorption in a subject (or) in the Divine. (Iyangar, B.KS., 1999)

Biochemical Variables and Its Importance

The exercises produces biochemical changes in the cardio respiratory system and other important alterations in body composition such as High Density Lipo Protein, Low Density Lipo Protein, blood cholesterol, blood glucose and triglyceride levels (Mathews, 1981). Low Density Lipoprotein (LDL) LDL and VLDL contain the greatest fat and least protein components. The LDL's normally carry 60 to 80% of the total cholesterol and have the greatest affinity for the artery wall. They help to carry cholesterol into the arterial tissue to become chemically modified and ultimately cause proliferation of underlying smooth muscle cells and further changes that damage and narrow the artery in the process of coronary heart disease. LDL and VLDL are means for transporting fat throughout the body for delivery to the cells, including those of the smooth muscle walls of the arteries. LDL is targeted for peripheral tissue and is associated with arterial damage. Elevated levels of LDL and VLDL represent an increased risk.

Statement of the Problem

The purpose of this study was to determine the relative effect of yogic training and aerobics on selected Bio- chemical variables among diabetic patients.

Methodology

The purpose of the study was to find out the relative effect of yogic training and aerobics on selected biochemical variables among diabetic patients. This chapter deals with the selection of subjects, selection of variables, pilot study, reliability of the data, Training schedule, administration of tests, research design for the study, laboratory tests taken for the subjects, experimental procedure and the statistical technique used.

Experimental Design

Random group design was followed in this study. Randomly selected (N=30) diabetic patients who were undergoing treatment in Government Hospital, Vijayawada were selected as subjects for this study with their consent. The subjects were divided into three groups, experimental group I, experimental group II and control group. Experimental group I underwent yogic practices, experimental group II underwent aerobics and control group was not given any special treatment. Pre tests were conducted for all the subjects on selected Biochemical variables such as low density lipoprotein. The experimental groups participated in their respective exercises, namely aerobics for twelve weeks and yogic exercises for twelve weeks. The post tests were conducted on the above said dependent variables after a period twelve weeks. The difference between the initial and final scores was considered the effect of respective experimental treatments. To test the statistical significance ANCOVA was used. In all cases 0.05 level was fixed to test the hypothesis.

Discussions

Results on low density lipoprotein The statistical analysis comparing the initial and final means of Low Density Lipoprotein due to Yogic practices and Aerobics among diabetic patients is presented in Table 1

Computation of analysis of covariance of low density lipoprotein

	Yogic Practices Group	Aerobics Group	Control Group	Source of varlance	Sume Of squares	Df	Mean squares	Obtainel
Pre test mean	1060.21	102.15	100.28	Between	82.97	2	41.48	0.42
				within	2676.15	27	99.12	
Post test mean	102	99.01	99	Between	51.04	2	25.52	0.33
				within	2088.44	27	77.35	
Adjusted post test mean	98.21	97.73	101.45	Between	88.46	2	44.23	6.76*
				within	170.17	26	6.55	
Mean diff	-6.38	-654	-1.58					

Table F-ratio at 0.05 level of confidence for 2 and 27 (df) =3.35, 2 and 26 (df) =3.37. *Significant

As shown in Table I, the obtained pre test means on Low Density Lipoprotein on Yogic practices group was 106.83, Aerobics group was 104.17 was and control group was 102.83. The obtained pre test F value was 0.42 and the required table F value was 3.35, which proved that there was no significant difference among initial scores of the subjects. The obtained post test means on Low Density Lipoprotein on Yogic practices group was 101.00,

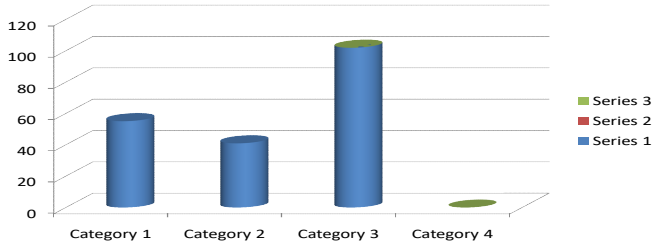
Aerobics group was 98.23 was and control group was 101.00. The obtained post test F value was 0.33 and the required table F value was 3.35, which proved that there was no significant difference among post test scores of the subjects. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 6.76 was greater than the required value of 3.37 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

Table II: Scheffe's Confidence Interval Test Scores on Low Density Lipoprotein

MEANS				**Required CI**
Yogic practices group	Aerobics group	Control group	Mean Differences	
99.12	98.61		0.51	2.96
99.12		102.51	3.39*	2.96
	98.61	102.51	3.90*	2.96

* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Yogic practices group and control group (MD: 3.39). There was significant difference between Aerobics group and control group (MD: 3.90). There was no significant difference between treatment groups, namely, Yogic practices group and Aerobics group. (MD: 0.51). The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.



Discussions on Findings on Low Density Lipoprotein

The effect of Yogic practices and Aerobics on Low Density Lipoprotein is presented in Table I. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 6.76 was greater than the required table F value to be significant at 0.05 level. Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table II proved that there was significant difference between Yogic practices group and control group (MD: 3.39) and Aerobics group and control group (MD: 3.90). Comparing between the treatment groups, it was found that there was no significant difference between Yogic practices and Aerobics group among diabetic patients. Thus, it was found that Yogic practices and Aerobics were significantly better than control group in beneficially altering Low

Density Lipoprotein of the diabetic patients. When comparing between the experimental groups, it was found that there was no significant differences between yogic exercises group and aerobics group. The twelve weeks yogasana training and Aerobics, induced to exert more energy and exercise themselves along with their usual medication. As the subjects began to do the physical exertion there was increased blood circulation, which resulted in reduction of low density lipoprotein. With the additional aerobic power, the LDL cholesterol began to reduce. Hence, there was reduction in LDL. Year (1999) found two months supervised exercise sessions consisted of 40-45 minutes of Aerobics and/or slow jogging resulted in triglycerides decreased in the exercise group from 285 to 223 mg/dl Body weight and total cholesterol and HDL cholesterol, glucose and insulin independent of dietary changes is an effective and feasible method of improving cardiovascular risk factors. The findings of this study are in agreement with these previous findings.

Discussions on Hypothesis

For the purpose of the study, the following hypotheses were made: There would be significant difference in selected biochemical variables, low density lipo protein time due to yogic practices and aerobics comparing to control group among diabetic patients. There would be no significant differences between yogic practices and aerobics in altering selected biochemical variables among diabetic variables. The results presented in Tables 1 on biochemical variables, low density lipoprotein respectively proved that the obtained F values were greater than the required table F value to be significant at 0.05 level. The post hoc analysis results presented in Tables II on the biochemical variables proved that twelve weeks yogic practices and aerobics significantly improved selected biochemical variables, low density lipoprotein the formulated hypothesis No. 1 stated that there would be significant difference in selected biochemical variables, low density lipoprotein due to yogic practices and aerobics comparing to control group among diabetic patients was accepted at 0.05 level. The results presented on post hoc analysis on selected biochemical variables proved that there was no significant differences between treatment groups in altering selected criterion variables and the formulated hypothesis No. 2 stating that there would be no significant differences between yogic practices and aerobics in altering selected biochemical variables among diabetic patients was accepted at 0.05 level except for biochemical variable. As for Low density lipoprotein, there was significant differences between the treatment groups and yogic practices were found to be significantly better than aerobics in reducing among diabetic patients and the formulated hypothesis was rejected to this extent.

Conclusion

It was found that twelve weeks yogic practices and aerobics significantly altered biochemical variable, low density lipoprotein among diabetic patients and the comparisons between treatment groups proved that there was no significant difference between the experimental groups

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Influence of Yogic Practices on Selected Coordinative Abilities of School Boys

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Introduction

Yoga

"Yoga is the art work of awareness on the canvas of body, mind, and soul." Yoga plays a vital role in every walk of life, now a day's everyone is searching of health, that is within them without knowing the concept they are searching here and there, Once they started learning yoga they will not come out from the healthy secret, It gives all round development to human both internal and external, One who know about and learn yoga they will practice regularly and try to teach everyone to learn yoga and preach about the innate wonders within them. If they are good enough to listen to their inner body's feelings and ideas yoga may add healthy life with good mental health, better attention, self-esteem and self-regulation with empowerment. Everybody now starts learning yoga and consuming the benefits, especially youth who are learning yoga in schools, colleges and universities to improve flexibility, sound mind, and to overcome the emotion and stress.

Coordinative Abilities

Coordinative abilities are understood as relatively stabilized and generalized pattern of motor control and regulation processes. These enable the sportsman to do a group of movements with batter quality and effect.

Differentiation Ability

It is the ability to achieve a high level of fine tuning or harmony of individual movement phases and body part movements. Differentiation Ability is to be particularly stressed when the aim is to achieve high level of mastery over sports movements and their effective application in competition. Differentiation Ability appears in different forms in different sports as each sport puts different types of demands on the control and regulation processes.

Space Orientation Ability

It is the ability to determine and change the position and movement of the body in time and space in relation to a definite field of action. The perception of position and movement and the motor action to change the body position should be understood as a unity for the ability for space-time oriented movement regulation.

Methodology

For this study 60 school boys selected from Ramakrishna Mission Vidyalaya high school and Rangaswamy Naidu higher secondary school Coimbatore and their ages ranging from 13 to 15 years. The subjects were divided into two equal groups. Group 1 consist 30 subjects called as the experimental group and group 2 consist of 30 students called as the control group .The group I was assigned aerobic dance and yogic training programme for a period of 12 weeks. The control group was not allowed to participate in any kind of treatment. The subjects were

tested in the selected variables namely differentiation ability tested with backward ball throw test and space orientation ability tested with numbered medicine run test, before and after the training period. The collected data was treated by using paired t-test. The level of confidence was fixed at 0.05 level.

Table-I: Computation of 'T'-Ratio between the Pre and Post Tests on Differentiation Ability of Experimental and Control Groups

Group	Test	M	SD	σ DM	DM	t-ratio	'p' value
Experimental	Pre Test	8.93	2.30	0.28	3.60	12.95*	0.01
	Post Test	12.53	1.96				
Control	Pre Test	9.00	2.56	0.06	0.10	1.79	0.08
	Post Test	9.10	2.52				

* significance at 0.05 level.

The table I indicates that there was a significant improvement on the differentiation ability through the yogic practices. It reveals that the obtained t-ratio 12.95 is significant because the 'p' value is lesser than the 0.05, there was significant improvement between pre and post tests on the selected coordinative abilities. So there was a significant improvement on the differentiation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the differentiation ability was due to the yogic practices alone.

Figure – I: The Figure Showing the Mean Difference of Pre and Post-Tests Scores on Differentiation Ability of Experimental and Control Groups

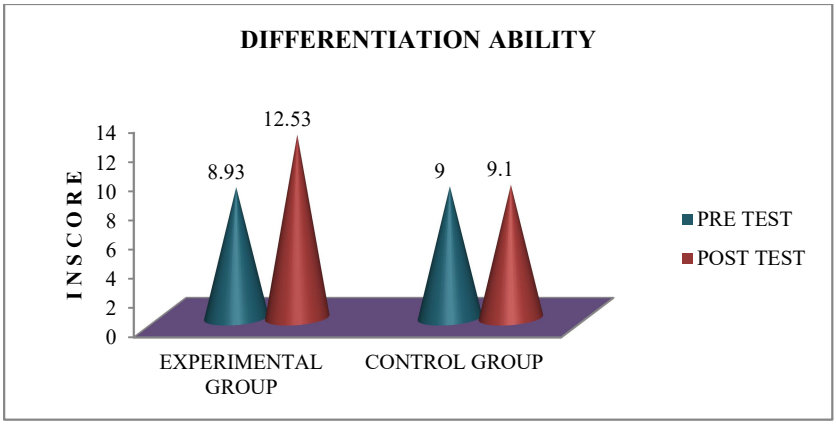


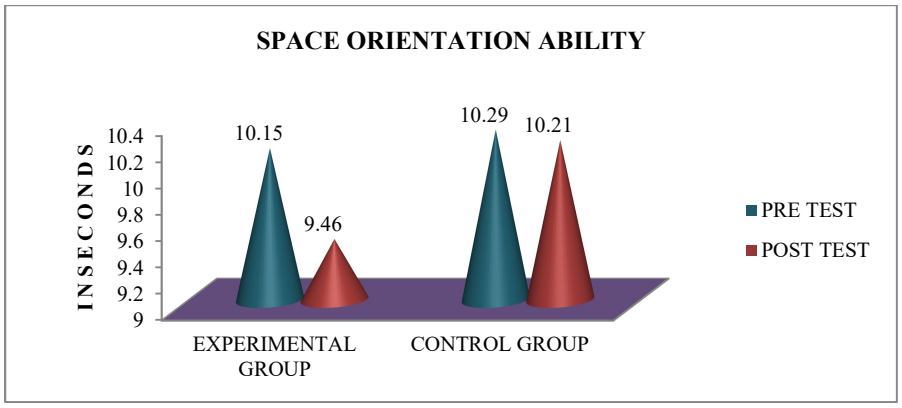
Table-II: Computation of 'T'-Ratio between the Pre and Post Tests on Space Orientation Ability of Experimental and Control Groups

Group	Test	M	SD	σ DM	DM	t-ratio	P
Experimental	Pre Test	10.15	0.74	0.08	0.69	8.69*	0.01
	Post Test	9.46	0.59				
Control	Pre Test	10.29	0.76	0.04	0.09	2.03	0.062
	Post Test	10.21	0.87				

* significance at 0.05 level.

The table II indicates that there was a significant improvement on the space orientation ability through the yogic practices. It reveals that the obtained t-ratio 8.69 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on the space orientation ability selected coordinative ability. So there was a significant improvement on the space orientation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the space orientation ability was due to the yogic practices alone.

Figure – II: The Figure Showing the Mean Difference of Pre and Post-Tests Scores of Space Orientation Ability of Experimental and Control Groups



Discussion of Findings

The result of the study reveals that the twelve weeks of yogic practices on the selected dependent variables there was a significant improvement on the differentiation ability through the yogic practices. It reveals that the obtained t-ratio 12.95 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on differentiation ability. So there was a significant improvement on the differentiation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the differentiation ability was due to the yogic practices alone. The results of the study is in consonance with the research done by Koushik Bhowmik (2016).

The result of the study reveals that the twelve weeks of yogic practices on the selected dependent variables there was a significant improvement on the space orientation ability through the yogic practices. It reveals that the obtained t-ratio 8.69 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on space orientation ability. So there was a significant improvement on the space orientation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the space orientation ability was due to the yogic practices alone. The results of the study is in consonance with the research done by Rajib Ghosh and Sebastian (2016).

Conclusions

It was concluded that there was a significant improvement on the selected variables namely differentiation ability and space orientation ability by the application of yogic practices.

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Effect of specific training programme on selected Motor qualities and skill performance variables of men Cricket players

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Introduction

The history of cricket dates back several thousand years. The game was first created by European monks to be played for entertainment purposes during religious ceremonies. Cricket is a sport played between two players (singles) or between two teams of two players each (doubles).The modern game of cricket originated in the united kingdom in the late 19th century as "lawn cricket" Cricket is an played at all levels of society at all ages. The sport can be played by anyone .

Methodology

The study was aimed at to find out the effect of specific training programme on selected motor qualities and skill performance variables of men cricket players. To achieve the purpose of the study, thirty college level men cricket players (n= 30) from SRKV Maruthi College of Physical Education and faculty of GAPEY, Ramakrishna Mission Vivekananda Educational and Research Institute, Coimbatore were selected as subjects at random. Their age are ranged from 18 to 25 years. All the subjects were divided in to two groups with 15 subjects each as experimental and control group. Group-I underwent specific training for a period of twelve weeks of five days per week and group-II acted as control who did not participate in any special training other than the regular routine. The motor qualities such as shoulder strength and skill performance variables such as volley were selected as dependent variables. Shoulder strength was tested by pull ups test in numbers and volley was tested by dyer backboard cricket test in points. The pre and post test data were collected and treated with analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05.

Results

Shoulder Strength

The data obtained on shoulder strength of the experimental and control group were analyzed using the analysis of covariance presented in table – I

Table – I: Computation of Analysis of Covariance Specific Training Group and Control Group on Shoulder Strength

	ST Group	Control group	Sources of variance	Sum of squares	df	Mean squares	F-ratio
Pre-test Mean	**5.16**	**5.13**	**BG WG**	**0.004 60.84**	**1 28**	**0.004 2.17**	**0.002**
Post –test Mean	**6.35**	**5.14**	**BG WG**	**10.90 68.62**	**1 28**	**10.90 2.45**	**4.45***
Adjusted post-test	**6.34**	**5.16**	**B G W G**	**10.46 2.56**	**1 27**	**10.46 0.10**	**110.31***

BG - Between groups, * significant, WG- Within group, (The table value for 0.05 level for df 1 &28 = 4.19)

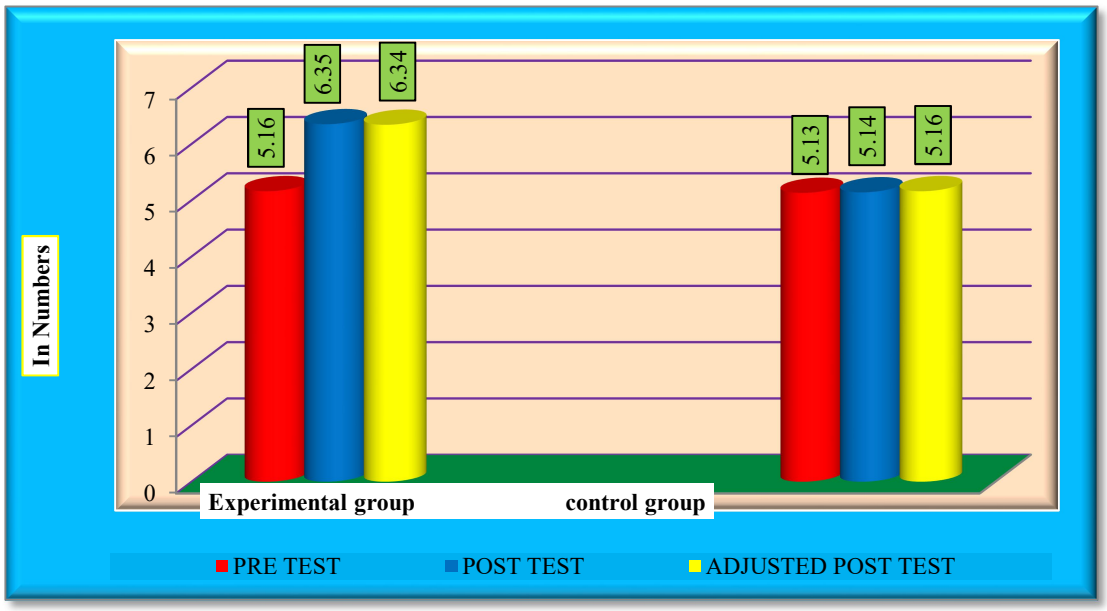
df- Degrees of Freedom &(The table value for 0.05 level for df 1 &27 = 4.21)

Results on Shoulder Strength

An examination of table – I indicates that the results of ANCOVA for pre-test scores of specific training group, and control group. The obtained F- ratio for the pre-test is 0.002 (P<0.05) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The obtained F ratio for the post-test is 4.45 (P>0.05) and the table F-ratio is 4.19. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 28.

The adjusted post-test means of specific training group and control group are 6.34 and 5.16 respectively. The obtained F-ratio for the adjusted post-test means is 110.31 (P>0.05) and the table F-ratio is 4.21. Hence the adjusted post-test mean shoulder strength F-ratio is significant at 0.05 level of confidence for the degree of freedom 1and 27. Pre test, post test and adjusted post test mean difference of the specific training group and control group on shoulder strength is presented in figure I.

Bar diagram showing the pretest, posttest and adjusted posttest mean differences of specific training group and control group on Shoulder strength



Volley

The data obtained on volley of the experimental and control group were analyzed using the analysis of covariance presented in table – II.

Table – II: Computation of Analysis of Covariance of Specific Training Group and Control Group on Volley

	ST group	Control group	Sources of variance	Sum of squares	Df	Mean squares	F-ratio
Pre-test Mean	**18.29**	**18.32**	**BG WG**	**0.01 100.79**	**1 28**	**0.01 3.60**	**0.002**
Post –test Mean	**20.29**	**18.34**	**BG WG**	**28.13 120.71**	**1 28**	**28.13 4.31**	**6.53***
Adjusted post-test	**20.29**	**18.33**	**B G W G**	**29.02 12.35**	**1 27**	**29.02 0.46**	**63.47***

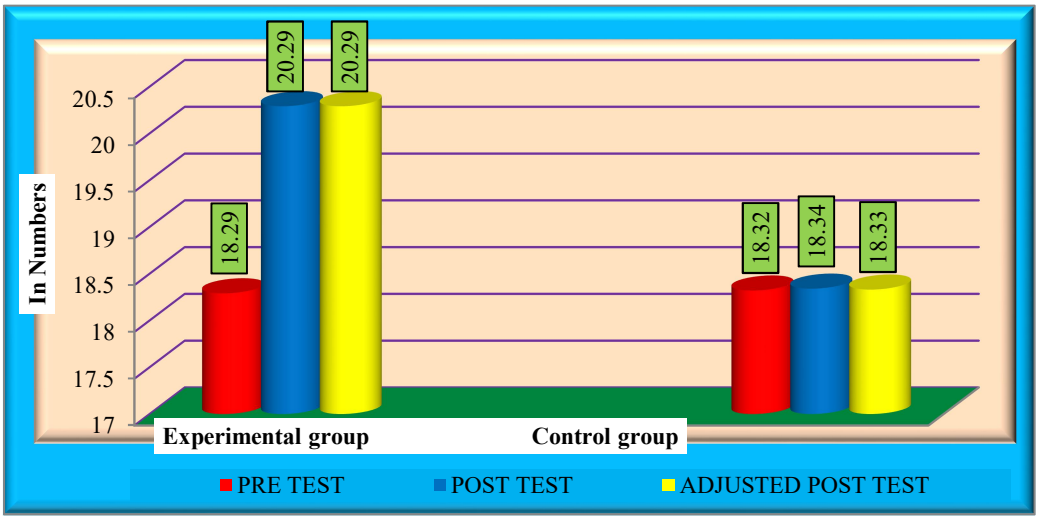
BG - Between groups, * significant, WG- Within group, (The table value for 0.05 level for df 1 &28 = 4.19)
df- Degrees of Freedom, (The table value for 0.05 level for df 1 &27 = 4.21)

Results on Volley

An examination of table – II indicates that the results of ANCOVA for pre-test scores of specific training group, and control group. The obtained F- ratio for the pre-test is 0.002 (P<0.05) indicating that the random sampling is successful and the table F-ratio is 4.19. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 1 and 28. The obtained F ratio for the post-test is 6.53 (P>0.05) and the table F-ratio is 4.19. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 1 and 28.

The adjusted post-test means of specific training group and control group are 20.29 and 18.33 respectively. The obtained F-ratio for the adjusted post-test means is 63.47 (P>0.05) and the table F-ratio is 4.21. Hence the adjusted post-test mean volley F-ratio is significant at 0.05 level of confidence for the degree of freedom 1and 27.
Pre test, post test and adjusted post test mean difference of the specific training group and control group on volley is presented in figure II.

Bar Diagram Showing the Pretest, Posttest and Adjusted Posttest Mean Differences of Specific Training Group and Control Group on Volley



Discussion on Findings

From the result of the present investigation, it was concluded that the cricket players are undergone the twelve weeks training on specific training it improved on selected motor qualities and skill performance variables (shoulder strength The results consent with other studies is isokinetic profile of wrist and forearm strength in elite female Junior Cricket Players **(Ellenbecker., et al. 2006).** In season effect of a combined repeated sprint and explosive strength training program on elit Junior cricket players **(Fernandez-Fernandez., et al. 2014).** The influence of ball velocity and court illumination on reaction time for cricket volley **(Jui Hung Tu., et al. 2010).**

Conclusion

Within the limitation of this study, the following conclusions have been drawn.

1. It was concluded that motor qualities and skill performance variables (shoulder strength and volley) has significantly improved through twelve weeks specific training programme.

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Influence of yogasana practice on selected physical fitness variables of college level women Basketball players

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Introduction

Yoga

"Yoga is the art work of awareness on the canvas of body, mind, and soul." Yoga plays a vital role in every walk of life, now a day's everyone is searching of health, that is within them without knowing the concept they are searching here and there, Once they started learning yoga they will not come out from the healthy secret, It gives all round development to human both internal and external, One who know about and learn yoga they will practice regularly and try to teach everyone to learn yoga and preach about the innate wonders within them. If they are good enough to listen to their inner body's feelings and ideas yoga may add healthy life with good mental health, better attention, self-esteem and self-regulation with empowerment. Everybody now starts learning yoga and consuming the benefits, especially youth who are learning yoga in schools, colleges and universities to improve flexibility, sound mind, and to overcome the emotion and stress.

Methodology

For this study selected 40 women basketball players from Sri Padmavathi Mahila Viswavidyalayam, Tirupati, Andhra Pradesh, and their ages were ranged from 18 to 21 years. The subjects were divided into two equal groups. Group 1 consist 20 subjects called as experimental group and group 2 consist of 20 students called as control group .The group I was assigned yogasana training programme for a period of 12 weeks. The control group was not allowed to participate in any kind of treatment.The subjects were tested in the selected variables namely speedwas tested with 50 yards dash test and flexibility was tested with sit and reachtest, before and after the training period.The collected data was treated by using paired t-test. The level of confidence was fixed at 0.05 level.

Training Sheduel

Total = 12 Weeks, Weekly = 3 Days, Per Session = 1 Hour

Training Programme

It is most essential to warm up before every session. The method of doing yogasanas training explained to the experimental group before starting the training. The researcher herself demonstrated the trainings to the subjects. The training was given for a period of twelve weeks on alternate days, three days in a week.

Yogasanas

Under yogasanas, a batch of 12 asanas, which are commonly called of Suryanamaskar was given to the subjects, followed by Tadasana, Trikona –asana and Paschimottanasana.

The physical base of the practice links together twelve asanas in a dynamically performed series. These asanas are ordered so that they alternately stretch the spine backwards and forwards. When performed in the usual way, each asana is moved into with alternate inhalation and exhalation (except for the sixth asana where the breath is held in external suspension). A full round of Surya namaskara is considered to be two sets of the twelve poses with a change in the second set to moving the opposite leg first through the series.

Each stage of Surya Namaskar was accompanied by regulation of breath.

Results of the Study

Table-I: Computation of 'T'-Ratio between the Pre and Post Tests on Speed of Experimental and Control Groups

Group	Test	M	SD	σ DM	DM	t-ratio	'p' value
Experimental	**Pre Test**	7.68	0.38	0.19	0.03	5.90	0.01
	Post Test	7.48	0.35				
Control	**Pre Test**	7.678	0.39	0.01	0.01	1.45	0.16
	Post Test	7.677	0.39				

* significance at 0.05 level.

The table Iindicates that there was a significant improvement on thespeedthrough the yogasana practices. Itreveals that the obtained t-ratio 5.90is significant because the 'p' value is lesser than the 0.05, level of confidence. So there was a significant improvement on the speed between the pre and posttests of experimental group, whereas the control group showed no significant improvement. Hence the result indicates that the significant improvement on the speed was due to the yogasana practice alone.

Figure – I: The Figure Showing the Mean Difference of Pre and Post-Tests Scores On Speed of Experimental and Control Groups

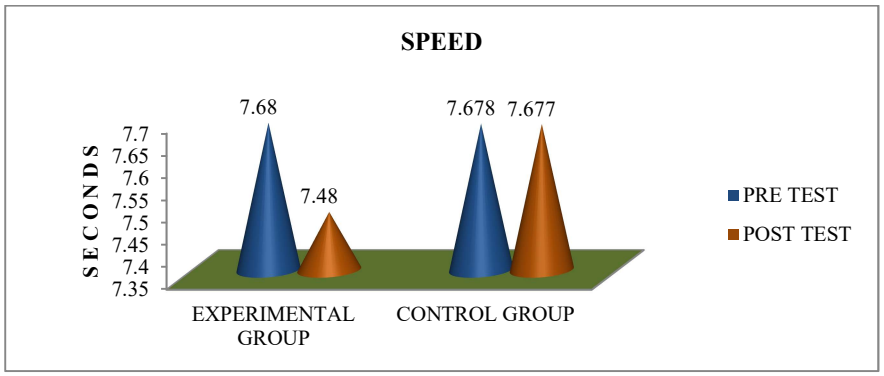


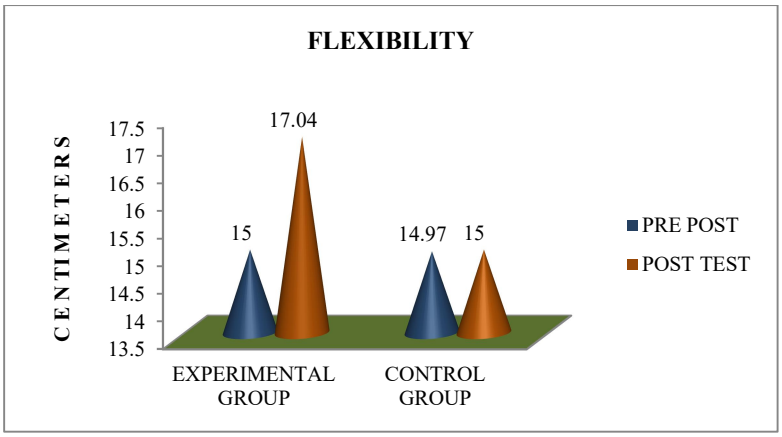
Table-II: Computation of 'T'-Ratio between the Pre and Post Tests on Trunk Flexibility of Experimental and Control Groups

Group	Test	M	SD	σ DM	DM	t-ratio	'p'
Experimental	**Pre Test**	15	1.51	2.04	0.41	4.85	0.01
	Post Test	17.04	1.54				
Control	**Pre Test**	14.97	1.84	0.02	0.18	0.12	0.90
	Post Test	15	1.51				

* significance at 0.05 level.

The table II indicates that there was a significant improvement on the trunk flexibility through the yogasana practice. It reveals that the obtained t-ratio 4.85 was significant because the 'p' value was lesser than the 0.05, level of confidence. So there was a significant improvement on the trunk flexibility between pre and post tests of the experimental group, whereas the control group showed no significant improvement. Hence the result indicates that the significant improvement on the trunkflexibility was due to the yogasana practice alone.

Figure – II: The Figure Showing the Mean Difference of Pre and Post-Tests Scores Of Trunk Flexibility of Experimental and Control Group



Discussion on Findings

The result of the study reveals that the twelve weeks of yogasana training programmeon the selected dependent variable there was a significant improvement on the speed.It reveals that the obtained t-ratio 5.90 is significant because the 'p' value is lesser than the 0.05, level of confidence. So there was a significant improvement on the speedbetween pre and post tests of the experimental group, whereas the control group showed no significant improvement. Hence the result indicates that the significant improvement on the speed was due to the yogasanatraining alone. The result of the study is in consonance with the research done bySunanth TS Raj and GP Sudheer (2018).

The result of the study reveals that the twelve weeks of yogasana practice on the selected dependent variables there was a significant improvement on the trunk flexibility. It reveals that the obtained t-ratio 4.85 is significant because the 'p' value is lesser than the 0.05, level of confidence. So there was a significant improvement on the trunk flexibility between pre and post tests of the experimental group, whereas the control group showed no significant improvement. Hence the result indicates that the significant improvement on the trunk flexibility was due to the yogasana training alone. The result of the study is in consonance with the research done byVairavasundaram and Palanisamy (2014).

Conclusions

It was concluded that there was a significant improvement on the selected variables namely speed and flexibility by the application of yogasana practices.

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Supply Chain Challenges of Organized Sports Goods Retailers: A Descriptive Study of North-East India.

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Abstract

India has a long history of supplying a variety of sports products, which significantly aid in growing sports in India. Over the last several decades, India's sports goods retail industry has developed significantly, and it now plays an important role in the country's economy. According to industry data, India ranks third among Asia's major producers and suppliers of sports goods and equipment, trailing only China and Japan. The sector has grown as a result of the Indian government's continuous initiatives aimed at promoting sports in various regions of the country, however, the North East Indian sports retail industry is not yet developed enough to capitalize on the available opportunities. There are so many challenges facing the sports goods retailer in the supply chain practices. This paper analyses and examines the most pressing concerns and challenges confronting this sector, presents the various supply chain challenges confronting major sports goods retailers and suggests retail supply chains in North East India to improve their business investment in sports and sports promotion, among others. The studies include the challenges factors faced by sports retailers, such as demand management challenges, distribution management challenges, environmental uncertainty, information sharing challenges, and sourcing (procurement) challenges. The major challenges faced by sports retailers in northeast India are being investigated and analyzed, and it has been found that all five study factors are major supply chain challenges in the region for the sports good's retailers. A structured questionnaire with 30 questions was used to collect primary data from 214 organized sports goods retailers in the North East region to study their perceptions of various supply chain challenges.

Key words: North East India, Sports Goods Retailers, Supply Chain Management Challenges.

Introduction

Supply chain management has become one of the most important factors for sports goods retailers, but due to improper retail supply chain practices in north east India, the challenges faced by sports goods retailers are common in many ways and it is a challenging area for many retailers in adopting the supply chain model in their business operational processes. Proper supply chain management and adaptive supply chains are ones that can growth, overcome the challenges and change to meet the needs and demands of consumers. The retail supply chain must be responsive and adaptable to ensure growth **(Ramesh, Banwet, & Shankar, 2008)**. The growth and evolution of the sports goods retail supply chain are influenced by both internal and external factors that increased globalization, substantially reduced trade barriers, better information accessibility, and environmental concerns.

Additionally, sufficient supply of product demand, schedules for distribution, sourcing, inventory management, and government regulations. **Thomas and Griffin (1996)** say that the concept of supply chain management (SCM) represents the most advanced state in terms of the evolutionary growth of purchasing, procurement, and other supply chain operations. Retailers need to develop strong relationships with supply chain partners to enhance supply chain performance (such as complete order fill, accurate and timely information, and reliable and fast order cycle time) **Ellram et.al, (1999)**. The retail industry in North East India is growing, particularly in the sports sector, but it has not yet grown to the desired level when it is compared to other regions of the country. The North East Indian sports goods retail industry is facing various major and minor challenges in managing its overall supply chain network. This study explored the key challenges in the sports goods retail supply chain, in which 214 major sports goods retailers participated. Sports retailers in North East India are more dependent on supply chain management for organizational success since the sector is undergoing development. The challenges are reviewed and discovered in five areas such as, 1) Demand management challenges, Demand management, according to **Croxton, K. L., et al. (2002)** is the process of balancing customer needs with supply chain capabilities. If the correct procedure is in place, management can proactively match supply with demand and implement the plan with minimal disruptions. Forecasting is just one part of the process. It comprises aligning supply and demand, enhancing flexibility, and reducing unpredictability. **Lau, K. H. (2012)** examine the role of demand management in the retail supply chain's downstream in balancing distribution efficiency and customer responsiveness. Effective demand management methods, such as customer segmentation and price discrimination, can assist in enhancing the supply chain's overall distribution efficiency while also providing the essential responsiveness to meet actual customers' requirements. Demand management is a complex and demanding task in retail supply chain. Demand coordination with SC management is challenging, and it required extensive research from a retail supply chain perspective **(Taylor and Fearne, 2009)**. 2) Distribution management challenges, Distribution has been a major component of retailers' marketing strategy in recent years, as per **Fernie, J. (1989)**. Every company was rethinking its distribution strategy, and several of them had made significant modifications. Recent business and technology advancements, according to **Ashayeri, J., and Kampstra, R. (2005)**, have changed the structure and performance requirements of distribution networks. Most retails companies are faced with the challenges of reorganizing their distribution chain, **Baker, P. (2006)** stated that many retails supply chains, particularly distribution Centre's, are facing major challenges in rising globalization and market instability. 3) Environmental uncertainty, **Kreiser, P., & Marino, L. (2002)** explain the concept of environmental uncertainty is recognized as a fundamental element of the retail supply chain management, organizational theory literature and strategy management. Environmental uncertainty plays a critical role in retail supply chain management, according to **Paulraj, A., and Chen, I. J. (2007)**. **Sun, S. Y., Hsu, M. H., & Hwang, W. J. (2009)** believed that the right supply chain (SCM) strategy can improve retail SCM performance. Lee presented a framework for determining the best SC approach based on environmental uncertainty and uncertainty framework and observe how the alignment of SC strategy with environmental uncertainty challenges that perceived SCM performance. 4) Information sharing challenges, **H. Zhou and W. C. Benton Jr. (2007)** investigate how information sharing and supply chain practices are integrated in supply chain management, and reveal that effective information sharing improves supply chain practices significantly, and that supply chain dynamism has a significant positive impact on both data sharing and practices. Both are necessary for good supply chain performance. **Xie, Y., & Allen, C. (2013)** study on information technologies (ITs) by describing their functionalities and operational opportunities and challenges they provide to a retail supply chain (SC). While it is agreed that implementing the ITs across the SC will improve overall SC performance in terms of cost, response efficiency, and customer satisfaction, challenges such as high setup costs, implementation complexity, and privacy and security challenges must still be addressed. Participants in the retail SC will be able to turn challenges into opportunities if they have a better awareness of these opportunities and challenges. 5) sourcing (procurement) challenges, **Kocabasoglu, C., & Suresh, N. C. (2006)** study to understanding the strategic sourcing and to examine the challenges and find that strategic sourcing is based on the purchasing function's status within the firm, the extent of internal coordination of

purchasing with other departments, information exchange with important suppliers, and key supplier development. Low-cost goods must typically be sourced from low-wage foreign suppliers and reveals they are frequently sub-optimal and fail to account for a number of important factors. the sourcing challenges are evaluated using a model developed from the Kaufmann and Hedderich (2005) framework by **Towers and Song (2010)**. Improvement, sourcing location, language barriers, unforeseen delivery risks, and customer service are the most major challenges in retail supply chain. **Cho, J., and Kang, J. (2001)** investigate the various challenges that retail firms face when it comes to sourcing, and how those challenges differ depending on the demographic and managerial characteristics of the firm. Logistics, regulations, cultural differences, and national uncertainty were identified as four challenges. In terms of product type, number of imports, experience, and sourcing regions, the challenges connected with global sourcing differed. The information provided by their study helps us better understand the sourcing activities of apparel retailers with a significant global presence. In the literature, there are various conceptual frameworks are discussed on supply chain challenges and performance measure, however, there are limited empirical analyses and case studies on retail supply chain challenges, and performance in a sports goods retail supply chain practice. We reviewed the various selected literature on supply chain management and retail supply chain challenges, the methodology used is described, followed by data analysis, and, finally, discussion of the findings and conclusion.

Purpose of the Study

The Purpose of the study is :

1. To investigate the major challenges of North East Indian sports goods retailers
2. To examine the current level of each factor's challenges,
3. To determine the sports goods retail supply chain challenges greatest concern in North East India.

Methodology

The data was collected by formulating a structured questionnaire. The questionnaire is divided into five different sections. They are challenges with demand management, challenges with distribution management, challenges with environmental uncertainty, challenges with information sharing, and challenges with sourcing. These five dimensions represent the challenges faced by sports goods retailers in supply chain management; each dimension consists of six equal indicators (30 in total), and it is quantified using a Likert scale. Only 214 out of 270 organized North East Indian sports retailers responded to the survey questionnaires, and the data was used for the studies.

Data Analysis and Interpretation

Percentage analysis was used to determine the supply chain challenges faced by the sports good's retailers in North East India.

Breakdown of response for the survey

Fig. 1 displays a breakdown of the survey responses. Within five weeks, almost all of the responses were received. Due to the unavailability of proper data for such inquiries, eighteen retailers of sporting goods stated that they were unable to respond. Fourteen retail companies returned the questionnaire with the explanation that they were no longer appropriate participants in the survey due to changes in their business practices. Twenty-four retailers answered the survey; however, they were unorganized. The organized retail response rate was only 79%, but we thought it was enough to help us identify sports goods retail supply chain challenges in North East India.

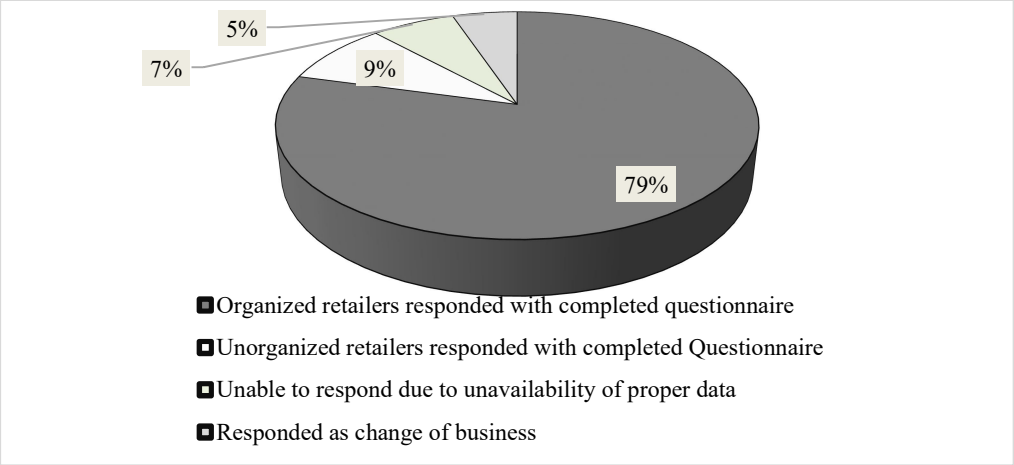

Fig. 1. Breakdown of response for the survey

Analysis on sports goods retail supply chain challenges factors

The retail challenges of all the factors were determined by computing the mean of all respondents and ranking them in accordance with that result, which shows the importance of understanding the challenges by converting problem frequencies to percentages. The percentages more clearly determine how challenges are measured differently in each section. We divided the measures into five categories: (strongly disagree, disagree, neutral, agree, and strongly agree). Researchers believed that by developing a measurement system for the retail supply chain, managers could improve their performance in the future. Our approach is thought to be appropriate for using the data for this study to identify the challenges that sports goods retailers face. The results of this challenge rating survey demonstrate the degree to which supply chain processes face challenges in each dimension.

Demand Management Challenges

66.3% of respondents strongly agree, and 11.21% agree with the fact that demand management is the major challenge hindering the development of the North East Indian sports retail industry. 4.67% of the retailers are neutral in their views. Only 12.14% of respondents are strongly disagreeing, and 5.60% are disagreeing. As a result, the North East Indian Sport Retail Industry faces significant demand management challenges and should priorities improving demand management in order to overcome business challenges.

Distribution Management Challenges

72.42% and 7.47% of respondents consider distribution management as a retail supply chain challenge to the growth of the North East Indian sports retail industry. 3.73 percent of people are neutral. 9.81% of people strongly disagree, while 6.54% disagree. This demonstrates that demand management is a significant challenge for sports goods retailers in North East India.

Environmental Uncertainty

73.83% of respondents strongly agree, and 7% agree that environmental uncertainty in the North East region makes doing business difficult. 6.07% of people are neutral regarding this. Only 8.41% of people strongly

disagree and 4.67% disagree with this statement, indicating that the majority of respondents believe environmental uncertainty is a major challenge for sporting goods retailers in the North East region.

Information Sharing Challenges

76.63% of respondents strongly agree, and 6.07% of respondents agree, that information sharing in supply chain management is a major challenge for the retail industry. 5.60% of respondents are neutral, 7.47% strongly disagree, and 4.20% disagree. This shows that 76.63% of respondents consider information sharing in retail supply chain management as a major challenge for the growth of the North East Indian sports industry.

Sourcing Challenges

68.69% of respondents strongly agree, 5.60% of respondents agree, and 7% of respondents are neutral. 11.21% of respondents strongly disagree, and 7.47% disagree, that sourcing challenges are a major challenge for the sports good's retailers in the North East region. This indicates that sourcing presents a significant challenge for retailers of sporting goods in the supply chain.

S. No.	Challenges Factors	Mean Rating
1	**Demand Management Challenges**	**3.31**
2	**Distribution Management Challenges**	**3.62**
3	**Environmental Uncertainty**	**3.69**
4	**Information Sharing Challenges**	**3.83**
5	**Sourcing (procurement) Challenges**	**3.43**

Table .1 Mean Ratings of Supply Chain Challenges face by North East India Sports Goods Retailers

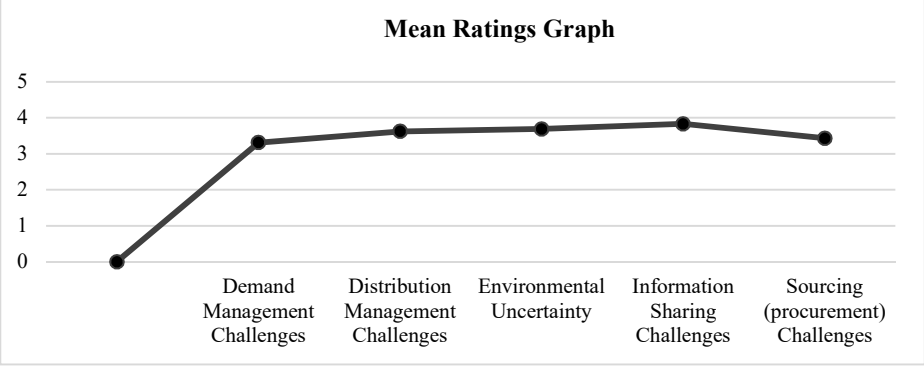

Fig. 2. Mean Rating Graph of Retail Supply Chain Challenges

The Above graph shows that supply chain challenges from North East sports goods Retailers. Information sharing challenges, Environmental Uncertainty, Distribution management challenges, Sourcing challenges and Demand management challenges are the major challenges of sports goods retail supply chain in North East India. Information sharing challenges as their greatest concern in North East sports goods retailers.

Conclusion

In our survey, participants were asked whether the study factors are their challenge in implementing contemporary retail supply chain practices in the North East. The 79% affirmative response clearly demonstrates that managing supply chains for sporting goods retailers in North East India has varying degrees of difficulty depending on the factors of challenge. The retail supply chain literature suggests that effective SCM helps win customers and improve customer service. 76.63% of the respondents in our survey noted that the most significant concern of the retail supply chain was information sharing, and 73.83% of the respondents reported environmental uncertainty. 72.42% of the respondents noted that they have distribution management challenges, 68.69% of the respondents responded that they have sourcing challenges, and 66.3% of the respondents responded that they have demand management challenges in their supply chain practices. According to the study's findings, all five study factors are major challenges in North East India's retail supply chain. We believe it is important to assess the proper supply chain network performance for sports goods retailers. Retailers focused on enhancing information sharing and proper understanding of the environmental factors of the region to effectively conduct business and improve overall supply chain integration in order to improve performance in the sports goods supply chain and move closer to the achievement of the inclusive goal of the retail supply chain. The study's findings on supply chain challenges among sports goods retailers are based on data from sports goods retailers in North East India. Major supply chain challenges for North East sports goods retailers include information sharing challenges, environmental uncertainty, distribution management challenges, sourcing challenges, and demand management challenges. Statistical tests reveal that the degree level of all supply chain challenges factors for North East India sports goods retailers is closely related, resulting in a major stumbling block in their business improvements. The researchers could be helpful in promoting retail supply chains in sports goods retailers' practices and addressing measurement challenges generally, as well as in developing measures and measurement techniques specifically to help firms address the present and future challenges of managing supply chains in sports goods retailers. New research projects are suggested to enhance the supply chain challenges in the sports retail sector. The study can be expanded within sports goods retailers to understand how supply chains are practicing and implementing the network in sports goods business operations to overcome their major challenges and how each specific supply chain challenge factors effectively into operation.

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Comparative Analysis of Selected Physical Fitness and Cardiopulmonary Parameters among Male Football Players of Hilly and Valley Regions of Manipur

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Abstract

Aim and Objectives: The purpose of the study was to compare and analyze the selected physical fitness and cardiopulmonary parameters among male football players of hilly and valley regions of Manipur**.** To achieve the purpose of this study 40 male (N=40) football players were selected from Manipur as a subject and the age ranged between 20- 25 years, 20 male football players from the hilly regions and 20 male football players from the valley regions of Manipur. **Methods:** The selected Physical fitness variables such as 50-meter dash was used to assess speed, a curl -ups test was used to measure the muscular endurance, and a shuttle run test was used to assess agility. The Queen's College Step Test was used to measure VO_2 max (maximal oxygen uptake) and respiration rate was measured using a stethoscope, spirometer was used to assess the forced vital capacity. **Result:** The data collected on selected criterion variables were subjected to statistical analysis using descriptive statistics and the ''t-test' technique was used. The results showed that there was no significant difference between Manipur's hilly and valley football players on speeds, muscular endurance, respiratory rates and forced vital capacity further, agility and VO_2 max values shows significant difference between Manipur's hilly and valley football players. **Conclusion:** It was concluded that there was no significant difference between male football players of hilly and valley regions of Manipur on selected physical fitness and cardiopulmonary parameters such as speed, endurance, respiratory rate and forced vital capacity. Further, there was a noticeable difference on agility and VO_2 max between male football players from Manipur's valley and hilly regions. Footballers from Manipur who lived in the valley have higher agility than those from the hilly area. While Manipur football players from the valley region have greater VO_2 max than those from the hill's region.

Keywords: Football, Manipur players, Hilly and valley region, Physical fitness, and cardiopulmonary parameters.

Introduction

Geographically, Manipur is composed of two sets of landmasses popularly known as the valley and the hills. The hills are occupied by the tribals and the valley is occupied by the non-tribal Meitei. In terms of population, Meitei is the dominant community and had a fair amount of political dominance with socioeconomic development (**Marchang R. 2019**). Moreover, they live in the valley which is highly fertile as a result, they are more prosperous than tribals who live mostly in hill areas. (**Milan S. 2017**). Hill areas in Manipur largely remained undeveloped and lacked basic infrastructure and services like healthcare facilities, educational institutions, public distribution systems, transportation, etc. On the other hand, the Valley districts of Manipur are among the most developed districts in Northeast India (**Milan S. 2017**).

Football is one of the most popular sports in India. The game is played extensively in the country, with the maximum fan following in Goa, Kerala, West Bengal, Mizoram, Manipur and Sikkim. All the international league matches and the soccer World Cup are keenly watched by sports enthusiasts in the sub-continent. The history of soccer in India can be traced back to the pre-independent period when the British people brought the game to the sub-continent. The initial football matches were played between army teams. A number of football clubs in India were soon created, during the British Empire. In fact, these clubs pre-date the most renowned clubs and organizations of football, such as FIFA. (**Singh, L. S. 2015**). Football is a unique sport, with matches involving intermittent high-intensity sprints between periods of jogging and walking and repeated physical contact. Endurance, speed, strength, power and agility are essential physical characteristics (**Cicirko, Leszek. et.al. 2007**).

Physical fitness is the state of body in which a person can do work for a longer duration effectively and efficiently, without undue fatigue. Good health provides sound and solid foundation on which fitness rests and at the same time fitness provides one of the most important key to health and living one's life to the fullest. The importance of certain physical fitness abilities for success in a wrestling bout varies in wrestlers of various wrestling styles and ages. The aim of this research was to identify the differences between the classical style (Greco-Roman) and the freestyle wrestlers in the variables assessing physical fitness. (**Baic, Mario et al., 2007**). Physical characteristics were similar in club level and country level with the exception of indices of speed and agility, fitness levels are similar in club level and country level, the 20-shuttle run test is a modest predictor of V02max in club level and country level (**Stephens et al., 2004**). Football player who enjoys a high height is better in the activities of strength and power than in the activities of endurance. Soccer coaches can select young players based on their anthropometry characteristics other than technical and tactical performance in short term (**Brahim, Mehdi Ben et al., 2013**). Indian players are not meeting the physical and physiological standards expected of professional international footballers (**Singh, Amrinder et al., 2013**).

According to the American College of Sports Medicine (ACSM), cardio-respiratory fitness is determined by oxygen consumption, technically called VO_2. This is measured by how much oxygen (in millilitres) your body can use per kilogram of body weight per minute. VO_2max is the maximum amount of oxygen the body can use, and it directly correlates to fitness capacity (**ACSM, 2000**). Players require the ability to perform repeated maximal or

sub-maximal intensive activities such as jumping, sprinting, changing of direction etc. throughout the match. Therefore, high oxidative energy level is required throughout the match. The demand of oxygen differs from one sport to other sports (**Singh and Patel, 2014**). Thus, the energy requirement is met by anaerobic metabolism during high-intensity exercise periods while aerobic metabolism gains importance in order to supply homeostatic conditions at recovery intervals. The Maximal oxygen uptake (VO_2max) is a key indicator to assess health as well as sports performance (**Matabuena, et. al. 2018**).

The characteristics of an athlete mainly depend upon physical fitness and cardiopulmonary having components like speed, agility, muscular endurance, VO_2 max, respiratory rate and forced vital capacity. Therefore, it is a need to monitor the selected physical fitness and cardiopulmonary parameters of male football players of the hilly and valley regions of Manipur. This will help identify the potential difference and similarities between the valley and hilly regions of the football players of Manipur.

Purpose of the Study

The purpose of the study was to compare and analyze the physical fitness and cardiopulmonary parameters among male football players of hilly and valley regions of Manipur.

Methodology

To achieve the purpose of this study 40 male (N=40) football players were selected from Manipur as a subject and the age ranged between 20- 25 years, 20 male football players from the hilly regions and 20 male football players from the valley regions of Manipur. The selected Physical fitness variables such as 50-meter dash was used assess the speed, curl -ups test was used to measure the muscular endurance, and a shuttle run test was used to assess the agility. The Queen's College Step Test was used to measure VO_2 max (maximal oxygen uptake) and respiration rate was measured using a stethoscope, spirometer was used to assess the forced vital capacity. The data collected on selected criterion variables were subjected to statistical analysis using descriptive statistics and the‘t-test’ technique was used.

Results

Result on Speed:

The comparison of speed among male football players of hilly and valley regions of Manipur through calculation of ‘t’ test is presented in Table I.

Table I: Showing Mean, Mean Different, Standard Deviation and obtained ‘t’ value on Speed among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
Speed	Football Players of hilly regions	9.82	0.96	0.96	0.17	0.60
	Football Players of valley regions	9.65	0.79	0.18		

* Significant at 0.05 level

The results presented in Table I shows that the mean value on speed among male football players of hilly regions of Manipur was 9.82 and male football players of valley regions of Manipur was 9.65 with mean difference of 0.17. The obtained 't' value of 0.60 was lesser than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that the there was no significant difference between the groups and the hypothesis was rejected at 0.05 level.

Result on Muscular Endurance:

The comparison of muscular endurance among male football players of hilly and valley regions of Manipur through calculation of 't' test is presented in Table II.

Table II: Showing Mean, Mean Different, Standard Deviation and obtained 't' value on Muscular Endurance among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
Muscular Endurance	Football Players of hilly regions	33.20	7.04	7.04	1.70	1.03
	Football Players of valley regions	31.50	2.25	0.50		

* Significant at 0.05 level

The results presented in Table II shows that the mean value on muscular endurance of male football players of hilly regions of Manipur was 33.20 and the male football players of valley regions of Manipur was 31.50 with a mean difference of 1.70. The obtained 't' value of 1.03 was lesser than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that the there was no significant difference between the groups and the hypothesis was rejected at 0.05 level.

Result on Agility:

The comparison of agility among male football players of hilly and valley regions of Manipur through calculation of 't' test is presented in Table III.

Table III: Showing Mean, Mean Different, Standard Deviation and obtained 't' value on Agility among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
Agility	Football Players of hilly regions	12.15	2.88	2.88	2.28	**2.98***
	Football Players of valley regions	9.87	1.84	0.41		

* Significant at 0.05 level

The results presented in Table III show that the mean value on the agility of male football players of hilly regions of Manipur was 12.15 and the male football players of valley regions of Manipur was 9.87 with mean difference of 2.28. The obtained 't' value of 2.98 was greater than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that the there was a significant difference between the groups and the hypothesis was accepted at 0.05 level.

Result on Vo_2max:

The comparison of VO_2max among male football players of hilly and valley regions of Manipur through calculation of 't' test is presented in Table IV.

Table IV: Showing Mean, Mean Different, Standard Deviation and obtained 't' value on VO_2max among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
VO_2max	Football Players of hilly regions	61.50	2.52	2.52	6.20	**4.92***
	Football Players of valley regions	55.30	5.04	1.13		

* Significant at 0.05 level

The results presented in Table IV shows that the mean value on VO_2 max among male football players of hilly regions of Manipur was 61.50 and the male football players of valley regions of Manipur was 55.30 with mean difference of 6.20. The obtained 't' value of 4.92 was greater than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that there was significant difference between the groups and the hypothesis was accepted at 0.05 level.

Result on Respiratory Rate:

The comparison of respiratory rate among male football players of hilly and valley regions of Manipur through calculation of 't' test is presented in Table V.

Table V: Showing Mean, Mean Different, Standard Deviation and obtained 't' value on Respiratory rate among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
Respiratory rate	Football Players of hilly regions	8.45	1.96	1.96	0.70	1.15
	Football Players of valley regions	9.15	1.88	0.42		

* Significant at 0.05 level

The results presented in Table V shows that the mean value on respiratory rate among male football players of hilly regions of Manipur was 8.45 and the male football players of valley regions of Manipur was 9.15 with mean difference of 0.70. The obtained 't' value of 1.15 was lesser than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that the there was no significant difference between the groups and the hypothesis was rejected at 0.05 level.

Result on Force Vital Capacity:

The comparison of force vital capacity among male football players of hilly and valley regions of Manipur through calculation of 't' test is presented in Table VI.

Table VI: Showing Mean, Mean Different, Standard Deviation and obtained 't' value on Force vital capacity among male football players of hilly and valley regions of Manipur (Scores in seconds)

Variables	Group	Mean	SD	SEM	MD	t
Force Vital Capacity	Football Players of hilly regions	3.75	0.46	0.46	0.08	0.33
	Football Players of valley regions	3.83	0.91	0.20		

* Significant at 0.05 level

The results presented in Table VI show that the mean value on force vital capacity among male football players of hilly regions of Manipur was 3.75 and the male football players of valley regions of Manipur was 3.83 with mean difference of 0.08. The obtained 't' value of 0.33 was lesser than the required 't' value of 2.086 to be significant at 0.05 level. Hence, it was proved that the there was no significant difference between the groups and the hypothesis was rejected at 0.05 level.

Discussion

The results presented in Tables III and IV proved that there were significant differences among male football players of hilly and valley regions of Manipur on Agility and VO2 max the formulated hypothesis was partially accepted at 0.05 level of confidence.

The results presented in Tables I, II, V and VI proved that there were no significant differences among male football players of hilly and valley regions of Manipur on selected speed, muscular endurance, respiratory rate, and force vital capacity and the formulated hypothesis was failed to the significant level at 0.05 level of confidence.

Conclusion

It was concluded that there was no significant difference between male football players of hilly and valley regions of Manipur on selected physical fitness and cardiopulmonary parameters such as speed, endurance, respiratory rate and forced vital capacity. Further, there was a noticeable difference on agility and VO_2 max between male football players from Manipur's hilly and valley regions. Footballers from Manipur who lived in the valley have higher agility than those from the hilly area. While Manipur football players from the hilly region have greater VO_2 max than those from the valley region.

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Effect of Plyometric Training on the Development of Physical Fitness among University Athletes in Osmania University, Telangana

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Introduction

"Physical activity is probably the most enjoyable and yet most inexpensive form of preventive medicine." A sport is an important ingredient of physical education and is a worldwide phenomenon today. The unprecedented popularity and better organization of sports activities and competitions would have been impossible without the recognition of the importance of sports for modern civilization. The value of exercise programs is becoming evident as more and more people are participating in such programs,and scientific evidence shows that their benefitsare accumulated. Recent medical experiments have indicated that a higher level of strenuous activity must be performed over a relatively long excessiveperiod for the prevention of heart diseases. The benefit of a more strenuous exercise program includes the development of mental discipline and the building of self-confidence in addition to physical benefits.

"Fitness is the ability of an individual to live a full and balanced life. It involves physical, mental, emotional, social, and spiritual factors and capacity for their wholesome expression." Participation in daily physical activities results in the proper growth and maintenance of good health. Running, jumping, throwing, climbing, and hanging from the basic pattern of motor movements throughout the life of human beings. Physical activities promote muscular strength, endurance, agility, speed, and coordination of muscular strength, which are the basis for all physical work of the human body. One of the greatest pleasures in sports is exposure to performance at its highest level. There is something almost artistic about an athletic that is well beyond the normal and demonstrates exceptional grace speed and control while performing a skill. Getting to the highest level requires skill attainment, mental toughness, years of purposeful practice, and dedication (Cho 1990).

Objective of the Study

The purpose of the study was to find out the effect of plyometric training on whether or not any significant difference found between pre-test and post-test of selected physical fitness variables on athletes of men and their performance.

Significance of the Study

The study investigates the existing difference between pre-test and post-test in relation to their effect of plyometric training on selected physical fitness variables among men athletes and their performance. The finding of the study may provide guidance to the physical education teachers and coaches to prepare training programs on the basis of the study. It may further help researchers who are interested in sportsand games. The findings of the study may add to the quantum of knowledge in the area of sports and physicaleducation.

Hypothesis

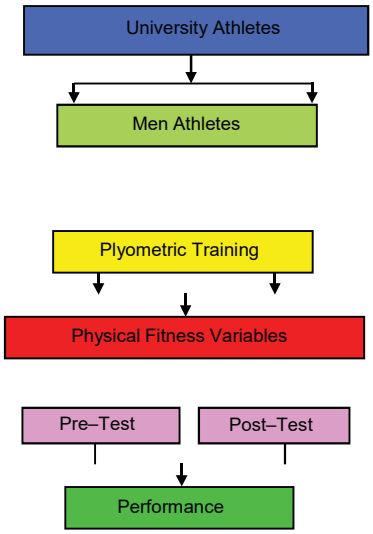
There may not be any significant difference between pre-test and post-test on the effect of plyometric training Programme among men athletes in Osmania University, Telangana in relation to physical fitness variable.

Table 1: The significance between pre-test and post-test on the effect of plyometric training program on the development of university men athletes in relation to physical fitness, i.e., speed

S. No.	Subjects	*n*	Mean	SD	df.	'*t*'-value	Sig. (two-tailed)
1.	Pre-test	50	9.94	0.818	98	16.187	0.000
2.	Post-test	50	7.98	0.553			

Design of the Study

The diagrammatic presentation was presented hereunder



Materials and Methods

The university athletes consisting of 50 athletes from Osmania University, Telangana. The pre-test was conducted, and the post-test was administrated after the experimental treatment of the plyometric training on university athletes for 12 weeks. The researcher has collected the data separately from the experimental group and controlgroup for pre-test and post-test of 50 university athletesof men athletes from Osmania University, Telangana State. The subjects were measured with physical fitness variables, i.e., speed, agility, endurance, and explosive strength, which were administrated on university athletes after systematictraining of plyometric training.

Tools Used

The following selected physical fitness variables,i.e., speed, agility, endurance, and explosive strength, were administrated on university athletes after systematictraining of plyometric training. The subjects of the studywere in the age group between 18 and 22 years from twogroups, i.e., experimental group and control group.

Results and Discussion

The mean value of pre-test of university men athletes is 9.94, SD value is 0.818, and for post-test of university men athletes, the value is 7.98 and SD value is 0.553. It is very clear a significant difference was found between pre-test and post-test of university men athletesat Osmania University, Telangana state with regard to the physical fitness, i.e., speed.

The mean value of pre-test of university men athletes is 14.22, SD value is 0.932, and for post-test of universitymen athletes, the value is 9.70 and SD value is 0.580.It is very clear a significant difference that exists between pre-test and post-test of university men athletesat Osmania University, Telangana state with regard to the physical fitness, i.e., agility.

The mean value of pre-test of university men athletesis 4852.44, SD value is 326.798, and for post-test of university men athletes, the value is 5952.16 andSD value is 529.358. It is very clear that a significant difference was found between pre-test and post-test of university men athletes at Osmania University, Telangana state with respect to thephysical fitness, i.e., endurance.

Table 2: The significance between pre-test and post-test on the effect of plyometric training program on the development of university men athletes in relation to physical fitness, i.e., agility

S. No.	Subjects	*n*	Mean	SD	df.	'*t*'-value	Sig. (two-tailed)
1.	Pre-test	50	14.22	0.932	98	29.770	0.000
2.	Post-test	50	9.70	0.580			

Table 3: The significance between pre-test and post-test on the effect of plyometric training program on the development of university men athletes in relation to physical fitness, i.e., endurance

S. No.	Subjects	*n*	Mean	SD	df.	'*t*'-value	Sig. (two-tailed)
1.	Pre-test	50	4852.44	326.798	98	13.130	0.000
2.	Post-test	50	5952.16	529.358			

Table 4: The significance between pre-test and post-test on the effect of plyometric training program on the development of university men athletes in relation to physical fitness, i.e., standing broad jump

S. No.	Subjects	*n*	Mean	SD	df.	'*t*'-value	Sig. (two-tailed)
1.	Pre-test	50	1.86	0.351	98	4.149	0.000
2.	Post-test	50	2.12	0.328			

The mean value of pre-test of university men athletes is 1.86, SD value is 0.351, and for post-test of university men athletes, the value is 2.12 and SD value is 0.328. It is very clear a significant difference was found between pre-test and post-test of university men athletesat Osmania University, Telangana state with regard to the physical fitness, i.e., standing broad jump.

Conclusions

Hence, it is concluded that the pre-test and post- test of physical fitness variables, i.e., speed, agility, endurance, and explosive strength on the effect of plyometric training on the development of physical fitness among university athletes in Osmania University, Telangana state in their related physical fitness. The science of sports training isrecent to the field of sports science. The sports science discipline has improved at a very fast pace in the past few decades. The knowledge gained by these disciplines has to be understood by the coaches and trainers to apply it correctly to the training process. Sports trainingaims to improving the performance of sportspersons, weight training, and plyometric training are very popular nowadays and effective training methods to promote higher performance in sprinting and jumping events. Plyometric training exercises are included depthjumping, hopping, and bounding drills. Legs plyometricand medicine ball exercise are arm plyometric exercises;these exercises are used to improve speed, explosive strength, and other motor ability components. Weight training is on activities of high intensity, short duration,and opposite side low intensity and high volume or build muscle, strength and endurance.

The major role of recent modernization,commercialization, and increased work schedule of an athlete's lifestyle has prompted the need for higher physical fitness levels. A key component of physical fitness in an athlete is to maintain high agility levels. Several studies have shown the programs of PT to increase physical ability, and such training leads to an increase of muscle power and boosts explosive needs inthe bodies. The factors such as power and acceleration have the range of motion exercises that are useful for many sports movement. According to the previous studies, this method in PT can be currently the most useful training to increase the explosive power in athletes, which is the requirement for athletes to achievehigh levels of performance. Plyometric training is a training strategy designed to improve performance by incorporating the basic needs of agility and power, allows the muscle to reach an exponential increase in the maximum strength and speed of movement.

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Analysis of Psychological and Physiological Variables among High And Low Physical Fitness Male University Kho-Kho Players

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Introduction

Science has established the fact that all efficient functioning of the body improves when it is used and regresses when it is not used. This means that all normal organs of the body perform more efficiently and effectively when they are regularly exercises. Human body is built to be active and thrives on activity. This realization has acquired for physical education and fitness programme an imperative place in the scheme of education in almost all the countries. Further, the need of physical education and fitness program becomes more and more urgent today as a result of increasing use of machines resulting a lesser and lesser use of muscular parts of the body. Sport is psychophysical as well as a social activity. The main objective of sports is to develop physical and psychological health. Further it has to integrate or to bring about Psychophysical coordination, socialization and culture interaction and thus to develop a spirit of tolerance.

The repeated failure in spite of planning and efforts puts one in the state of utter confession and bewilderment. This state of an individual is termed as frustration. Frustration leads to one or combination of four psychological variables namely regression, fixation, resignation, and aggression. Participation in regular physical activity has been shown to be important for health and quality of life. Physical activity also influences physiological and psychological parameters. Playing kho-kho game at university level demands rigorous physical activity. As the physical activity has the influence on psychological and physiological variables, there may be differences in physical on psychological and physiological variables with the difference in fitness levels. Hence the present study has been formulated to verify the effects of high and low physical fitness on selected psychological and physiological variables. Frustration: It can be defined as the blocking of a desire or needs. It refers to failure to satisfy a basic need because of conditions, either in the individual or external obstacles. Regression: Regression means reversion to primitive or childish forms of expression or behaviour. Fixation: It is psychological: a strong attachment to a person or thing, especially such an attachment formed in childhood or infancy and manifested in immature or neurotic behavior persists throughout life. Resignation: An individual tends to withdraw himself from the situation that causes frustration or failure. Aggression: Aggression is defined as "an act whose goal response is injury to an organism. Genevieve(2006) his study states that aggression in team sports as a function of gender, competitive level, and sport type. The results revealed that male players always display more aggressive behaviors than female players, whatever the sport, the competitive level or the nature of the observed aggression; instrumental aggressive behaviors increase and hostile aggressive behavior decrease when competitive level rises. The Frustration Scale by N.S. Chauhan and Govind Tiwari was used to measure frustration.

He concluded that the maximum resignation frustration was seen among the Indians, whereas the maximum regression was seen among the Iranian. The females tended to be aggressive, whereas the males were aggressive

and resigned. The expression of frustration in aggression led to balanced mental status, whereas regression resulted in neuroticism. Adolescents both from India and Iran had more aggression-frustration in comparison with their adult counterparts. The Indian women had predominantly more aggression whereas Iranian females had regression. Werner Helsen and Janet Starkes (2002) examined the relative importance of attributes determined largely by the efficiency of the visual or central nervous system versus cognitive domain specific skills, in the determination of expertise in soccer. A stepwise discriminate analysis of both non-specific abilities and soccer-specific skills revealed an average squared canonical correlation = 0.84, with the significant step variables all being domain–specific skills. Pown Radha In this study, psychological factors, namely sports competition anxiety and aggressiveness were studied in relation to soccer playing ability. Sports Competition Anxiety Test (SCAT) questionnaire and Aggressiveness Questionnaire (AQ) developed by Rainer, Marten and Smith were adopted to measure the anxiety and aggressiveness. Experts subjectively rated the soccer playing ability of the subjects (0 to 10 point scale). He concluded that, to these two psychological factors, aggressiveness is highly correlated with soccer playing ability at insignificant level. The results of this investigation revealed that moderate levels of anxiety and aggressiveness are present among the South Indian-University Soccer players.

Methodology

For the purpose of the study 175 (N=648) kho-kho players were selected from 54 university teams, participated in south zone inter university players men held at nagarjuna University affiliated colleges by following random sampling method. Further the selected players were divided into high and low physical fitness groups based on the AAHPERD youth fitness test. For this the scores of each item were converted to standard score by using Hull scale (The formula. 50 + 100 ÷ 7 (X – Mean) the subjects physical fitness composite scores were derived . The composite scores were arranged in descending order and thirty three percentage of scores of the subjects (58) from the top and thirty three percentage of scores of the subjects (58) from the bottom were selected for high and low physical fitness groups respectively. The scholar made an attempt to compare selected psychological and physiological variables between high and low physical fitness male university kho-kho players.

Psychological variables are regression, fixation, resignation, and aggression. The psychological variables were assessed by a questionnaire constructed by Tiwari G. and Chouhan N.S. The questionnaire consists of 40 questions. Each variable is assessed by ten questions. The physiological variables breath holding time, vital capacity resting pulse rate and blood pressure were assessed by following manual method, wet spiro meter, radial nerve method, and sphygmomanometer respectively.

Description of the Questionnaire:

Tiwari. G. and Chauhan. N. S. manual frustration questionnaire (1972)was used to measure the student's general frustration level. It consists of forty statements. It means measures frustration on four dimensions *viz*. regression, fixation, resignation and aggression. Each of the four modes of frustration has ten items. Each item has six options from "very much" to "not at all".

Method of Scoring:

The frustration test has forty statements. Each of the forty items has six answers from "very much" to "not at all". A score of 5 was given to the response "very much", 4 for "much", 3 for "ordinary", 2 for "less" and 1 for "very less" and 0 for "not at all". The high score indicates that the student is saturated with frustration and the lower score "0" indicates no frustration. There are four categories of frustration in this test namely regression, fixation, resignation and aggression. The score for each of the four categories varies between 0 and 40. The question number items that measure regression are 1, 5, 9, 13, 17, 21, 25, 29, 33 and 37, fixation 2, 6, 10, 14, 18, 22, 26, 30, 34 and 38, resignation 3, 7, 11, 15, 19, 23, 27, 31, 35 and 39 and aggressions 4, 8, 12, 16, 20, 24, 28, 32, 36 and 40. The

scores obtained for regression, fixation, resignation, and aggressions were added separately. The total score for each of the dimensions was considered for statistical treatment.

Reliability of the Data:

The reliability of the data was established by test - retest method. 10 subjects were randomly selected from nagarjuna university affiliated colleges kho-kho teams and they were tested twice by the same testers and similar conditions on each criterion variable. Since the obtained values were much higher than required value, the data were accepted as reliable in terms of instruments, tester, and subjects. The intra-class correlation technique was used to find out the reliability of the data with test - retest scores on each criterion variable separately and they are presented in Table I.

Experimental Design and Statistical Analysis:

The experimental design used for this study was static group comparison design. The study compares the state of psychological and physiological parameters of high and low physical fitness university kho-kho players. The date collected was analyzed by one way analysis of variance to identify the differences between high and low physical fitness groups. The level of significance selected to accept or reject the hypotheses was 0.50 level. The data collected on the criterion variables, i.e., regression, fixation, resignation, aggression, breath holding time, vital capacity, resting pulse rate, systolic blood pressure, and diastolic blood pressure were analyzed separately by using ANOVA and the results were presented below.

Table – II: Analysis Of Variance For The Data On Regression, Fixation, Resignation, Aggression, Breath Holdingtime, Vitalcapacity, Resting Pulse Rate, Systolic Blood Pressure, Diostalic Blood Pressure Among High And Low Physical Fitness Male University Kho-Kho Players.

Sources Of Variables	High Physical Fitness	Low Physical Fitness	Sum Of Squares	Degree Of Freedom	Mean Sum Of Squares	'F' Ratio
Mean	30.96	33.62	B: 204.45	1	204.45	
REGRESSION						4.73*
SD	6.65	6.50	W:4931.59	114	43.26	
Mean	28.72	26.28	B:171.39	1	171.39	
FIXATION						4.16*
SD	7.47	8.69	W:4691.19	114	41.15	
Mean	23.19	25.27	B:276.22	1	276.22	
RESIGNATION						4.21*
SD	7.47	8.69	W:7488.50	114	65.69	
Mean	33.12	29.76	B:327.80	1	327.80	
AGGRESSION						8.37*
SD	6.10	6.41	W:4462.78	114	39.15	
Mean	56.68	47.55	B:2415.80	1	2415.80	
BREATH HOLDING TIME						4.10*
SD	2.24	2.58	W:67148.60	114	589.00	
Mean	220.36	207.02	B:5164.45	1	5164.45	

VITAL CAPACITY						5.14*
SD	30.54	32.78	W:114396.38	114	1003.48	
Mean	68.91	72.38	B:348.28	1	348.28	
RESTING PULSE RATE						10.60*
SD	6.26	5.15	W:3744.22	114	32.84	
Mean	121.12	120.86	B:1.94	1	1.94	
SYSTOLIC BLOOD PRESSURE						0.03
SD	6.87	8.12	W:6449.05	114	56.57	
Mean	80.31	79.50	B:19.04	1	19.04	
DIASTOLIC BLOOD PRESSURE						0.61
SD	5.15	6.03	W:3582.91	114	31.43	

- Significance at 0.05 level
- Table value for significance at 0.05 levels with DF 1 and 114 is 3.93.

Discussion on Findings:

The results of the study indicated that among the four psychological variables, high physical fitness group was significantly less in regression and resignation when compared to low physical fitness group, and also in conformity with present results fixation and aggression higher for high physical fitness group, when compared to low physical fitness group. This Phenomenon is due to the fitness and the other factors like more instrumental aggressive behavior, team sports, ability, the type of training and length of training etc., might have also contributed the finding of Banga, Metz and Alexander, Pawan Radha, and Genevieve are also in conformity with present results. In the physiological variables breath holding time, vital capacity and resting pulse rate are better for high physical fitness group. In case of systolic blood pressure and diastolic blood pressure there was no significant difference between high and low physical fitness groups. The findings of Bucher, Leloahov, etc., also support the findings of the present study.

Conclusion & Recommendations:

Based on the analysis of the data, the following conclusion were drawn

1. Among the selected psychological variables, regression and resignation were significantly less in high physical fitness kho-kho group when compared to low physical fitness kho-kho group.
2. In case of fixation and aggression players of high physical fitness group were significantly higher when compared to low physical fitness group of kho-kho players.
3. In the physiological parameters, high physical fitness kho-kho players were significantly better in breadth holding time, vital capacity and resting pulse rate when compared to low physical fitness kho-kho players.
4. There was no significant difference between high and low physical fitness groups of kho-kho players in systolic and diastolic blood pressure.
5. The results of the study indicate that aggression, resignation and regression are the best discriminator psychological variables in order of priority that classified the high and low physical fitness male university kho-kho players.
6. The results of the study indicate that the resting pulse rate and vital capacity are the best discriminator psychological variables in order of priority that classified the high and low physical fitness male university kho-kho players.

Recommendations

1. Efforts may be undertaken using audiovisual aids to educate the low physical fitness students and its effect can be assessed.
2. Proper physical fitness programme may be designed and implemented for the low physical fitness students to improve their physical and psychological capabilities.
3. Similar study may be conducted on subjects belonging to various age groups.
4. The physical education teachers, and coaches/sports trainers should consider the psychological factors while imparting teaching and training to the students, athletes and players. They should lay emphasis on mental fitness and psychological conditioning.

A comparative study on physical fitness and psychological parameters between athletes and players may be conducted to find out the level of fitness and psychological variation.

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Construction and Standardization of Motor Skills Test for Ball Badminton Players

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Abstract

Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sport may be competitive, where a winner or winners can be identified by objective means, and may require a degree of skill, especially at higher levels. At present the physical education teacher and coaches in India have the resources sufficiently to measure the physical motor and performance related components, whereas the tests measuring the fundamental skills in sports and games are very limited. Further the available tests are also not home based. So the results and conclusions derived from these tests can have a change to mislead due to some extraneous factors. The purpose of this study is to construction and standardization of motor skills test for male ball badminton players. Objective of the study: To construct and standardization of motor skills test for ball badminton players. Methodology: To achieve this purpose of the study 300 hundred ball badminton players were selected from Telangana State were randomly selected as subjects. Their age ranged in between 14 to 22 years. The subjects were divided into three groups namely Group A (Novice), Group B (Median) and Group C (Expert) Speed, Agility and Flexibility was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed finding of the study: The Mean Value of Group A (Novice) is 11.1983, & SD value is 1.4286, Mean Value of Group B (Median) is 10.231, & SD value is 0.9765, and the Group C (Expert) is 9.3010, & SD value is 0.6661, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Speed. There was significant difference found in relation to their speed. The Mean Value of Group A (Novice) is 14.4305, & SD value is 2.2028, Mean Value of Group B (Median) is 12.3212, & SD value is 1.3202, and the Group C (Expert) is 10. 9512, & SD value is 0.5548, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Agility. There was significant difference found in relation to their Agility. The Mean Value of Group A (Novice) is 9.6721, & SD value is 0.4913, Mean Value of Group B (Median) is 10.5421, & SD value is 0.9645, and the Group C (Expert) is 11.4289, & SD value is 1.1773, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Agility. There was significant difference found in relation to their Agility. Conclusion: The present study would bring to light outstanding performance of the players (novice, median and expert) and the teams.

Keywords: Ball Badminton, Motor Skills, Speed, Agility & Flexibility

Introduction

Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sport may be competitive, where a winner or winners can be identified by objective means, and may require a degree of skill, especially at higher levels. Hundreds of sports exist, including those for a single participant, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. The education imparted in our schools and colleges is mainly intellectual. Even though every school and college has a playground and offers facilities for sports like cricket and football, participation in games is not compulsory and little account is taken of it while awarding

certificates and degrees. The organic connection between mind and body must be realized and more attention must be paid to the importance of physical training of the young**.**

Need of Skill Test

At present the physical education teacher and coaches in India have the resources sufficiently to measure the physical motor and performance related components, whereas the tests measuring the fundamental skills in sports and games are very limited. Further the available tests are also not home based. So the results and conclusions derived from these tests can have a change to mislead due to some extraneous factors. However the professionals in the field of physical education and sports are forced to use foreign system because of limited options. In such a situation the resources on tests and measurements to measure the fundamental skills have to be enhanced. For that, physical educators and coaches should have a sound knowledge on testing and measuring the performance related components (physical, physiological, anatomical and psychological).

Such a sound knowledge gained from the test and measurement, help them study the state and progress of individual performance in the fundamental skills and identify the right type of athletes because the aforesaid components are functioning as determinants in individual performance. The field of Indian sports science has very limited scientifically structured tests and measurements to assess the individual performance. The field of test and measurement to Indian applications has been chosen as an area with the intention of imparting the real game situations admissible to Indian conditions. The assessment of sports skills serves many fundamental functions for physical education teachers, coaches, and participants, such as revision of curriculum, improvement of instruction, prescription for correction, feedback to performers, and evaluation of achievement. In spite of the popularity of racquetball as a skill class in most colleges and universities, only a few tests are currently available to determine the overall racquetball skill level of young adults.

Ball badminton is a sport native to India. It is a racket game, played with a yellow ball made of wool, on a court of fixed dimensions (12 by 24 metres) divided by a net. The game was played as early as 1856 by the royal family in Tanjore, the capital of Thanjavur district in Tamil Nadu, India. It enjoys the greatest popularity in India. Ball badminton is a fast-paced game; it demands skill, quick reflexes, good judgment, agility, and the ability to control the ball with one's wrist.Games are usually played outdoors during the day. As a result, weather conditions wield a considerable influence, and ball badminton's rules allow the effects of weather conditions to be distributed more-or-less evenly between both teams. More recently, indoor versions of the game have been played under artificial lighting. All-India tournaments are conducted regularly using floodlights in Tamil Nadu, Puducherry, Andhra Pradesh, Telangana and Karnataka. Ball Badminton sport is managed by "Ball Badminton Federation of India". Ball badminton is now an officially recognised game in India. Total 34 units are affiliated to "Ball badminton federation of India " in which 26 are States units including Bihar, jharkhand, Nagaland etc. 5 Public sector units and 3 provisional affiliated units.

Significance of the Study

Ball badminton being an old traditional game and there is a need for deep research with regards to establish motor skills test for the evaluation of the players' performance. Hence, an attempt has been made to construct and standardize the motor skills test norms for ball badminton. The present study contains the following statements:

1. This study will aim to establish the criterion or basis for the motor skills test norms in ball badminton in relation to motor fitness.
2. This study will aim to establish the criterion or basis for the motor skills test norms in ball badminton in relation to Skill test.

Objectives of the Study

The purpose of the study is to find out whether or not any significant on the construction and standardization of motor skills test for male ball badminton players

- To construct and standardization of motor skills test for ball badminton players.
- To construct and standardization of skills test for ball badminton players.

Methodology:

The purpose of this study is to construction and standardization of motor skills test for male ball badminton players. To achieve this purpose of the study 300 hundred ball badminton players were selected from Telangana State were randomly selected as subjects. Their age ranged in between 14 to 22 years. The subjects were divided into three groups namely Group A (Novice), Group B (Median) and Group C (Expert) Speed, Agility and Flexibility was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed.

TOOLS USED

The following tools used for Motor skills (Speed – 60 mts Run, Agility- 4 x 10 mts, Flexibility – Sit & Reach).

Results and Discussion

Table Showing the Mean Values, SD, df, 't' value and p-value between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Speed

Sl. No.	Subjects	N	Mean	SD	p-value
1	Group A (Novice)	100	11.1983	1.4286	0.000
2	Group B (Median)	100	10.231	0.9765	
3	Group C (Expert)	100	9.3010	0.6661	

Table Showing the Mean Values, SD, df, 't' value and p-value between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Agility

Sl. No.	Subjects	N	Mean	SD	P - value
1	Group A (Novice)	100	14.4305	2.2028	0.000
2	Group B (Median)	100	12.3212	1.3202	
3	Group C (Expert)	100	10. 9512	0.5548	

Table Showing the Mean Values, SD, df, 't' value and p-value between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Flexibility

Sl. No.	Subjects	N	Mean	SD	P - value
1	Group A (Novice)	100	9.6721	0.4913	0.000
2	Group B (Median)	100	10.5421	0.9645	
3	Group C (Expert)	100	11.4289	1.1773	

Finding of the study:

Table1 Showing the Mean Value of Group A (Novice) is 11.1983, & SD value is 1.4286, Mean Value of Group B (Median) is 10.231, & SD value is 0.9765, and the Group C (Expert) is 9.3010, & SD value is 0.6661, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Speed. There was significant difference found in relation to their speed. Table 2 Showing the Mean Value of Group A (Novice) is 14.4305, & SD value is 2.2028, Mean Value of Group B (Median) is 12.3212, & SD value is 1.3202, and the Group C (Expert) is 10. 9512, & SD value is 0.5548, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Agility. There was significant difference found in relation to their Agility. Table 3 Showing the Mean Value of Group A (Novice) is 9.6721, & SD value is 0.4913, Mean Value of Group B (Median) is 10.5421, & SD value is 0.9645, and the Group C (Expert) is 11.4289, & SD value is 1.1773, between Group A (Novice), Group B (Median) and Group C (Expert) in relation to their Agility. There was significant difference found in relation to their Agility.

Conclusion:

The various actions in sports and games are so fast that it is difficult to justify the performance of a player without analyzing them. It is also essential to ascertain development of players in various factors affecting performance. The top most teams in national or international have come up because they have evaluated performance of their players in training and competitions and worked hard to reach world level through long term systematic and scientific training. This study is to analysis on construct and standardizes of motor skills test for male Ball Badminton of Telangana state. The present study would bring to light outstanding performance of the players (novice, median and expert) and the teams.

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A study on the Level of Knowledge of Kinesiology and its Application among Coaches and Athletes.

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Abstract:

Man is a living organism that has inherited the not only a systematic structure but also, motor behaviour patterns. By understanding these patterns, we can classify each motor act and identify basic similarities and variations that occur in specific situations. To achieve this, we have to use information from other fields, namely, from for the explanation of operating forces; from muscular physiology and Anatomy for the explanation of human joints and action. Kinesiology is a field based on related fields of study and helps to understand and supplement the efficiency of physical movements. The human body is a very complex system which is subject to both mechanical and biological laws and principles. How effectively and efficiently it performs, depends on both its mechanical and biological aspects as they are directly related to the performance of activities in any skill.

Introduction

The term Kinesiology is a term formed by the combination of two Greek verbs, KINEIN, meaning 'to move and 'LOGOS' meaning to discourse' and kinesiology can be defined as the study of the movement behaviour of all living organisms. The study of 'Kinesiology' will show that it is a combination of familiar terms 'ology' meaning the science of and 'Kinesis' meaning 'motion'. The combination of the two terms shall mean 'science of motion! Thus, the term Kinesiology is an inclusive term which is a Science, an organised system of information related to motion. It is the study of Scientific principles of movement in assessing motor performance. Improvements in muscular strength and development through Kinesiological principles coupled with the application of physiology of exercise have resulted in improved physical performance."

Objectives of the Study

The objectives of this study are to find out:

a) How far are the Coaches who are playing a vital part in better performances and making sports a lifelong process, provided with the tools (Knowledge of Kinesiology) to teach the understanding of Kinesiology, the science of the motion of the human body?
b) How far the coaches guide the students, and the athletes in acquiring proficiency in motor skills towards their optimum performance.

Need for the Study

The need of this study is to evaluate the Kinesiological Knowledge among the Coaches and the Athletes. The Coaches of NIS trained full term (Diploma in Coaching) and are involved in coaching the athletes (Sportsmen) are considered for this purpose. The athletes include those who participated in all sports and games and are being

coached by the coaches. In evaluating the Kinesiological knowledge the Investigator studied the Syllabus of the courses the coaches underwent at the coaching programme and the practical working knowledge the athletes gained through the Coaches.

Hypothesis

It is hypothesised that:

1. There is no significant difference in the Knowledge of kinesiology and its Application among Coaches and Athletes.
2. There is no significant difference in the knowledge of the need for Kinesiology among Coaches and Athletes.
3. There is no significant difference in the Knowledge of the importance of leverage among Coaches and Athletes.

Sample

The investigator included the Coaches of One Year Diploma Trained Coaches irrespective of the fact whether they coach in Schools College or Associations or Clubs and irrespective of the discipline they had specialised in coach, to evaluate their knowledge of Kinesiology. As the investigator is interested to cover the geographical area of Tamil Nadu state, he randomly selected 60 coaches from different parts of Tamil Nadu. The investigator also by selecting 60 athletes and randomly administered the questionnaire to evolve their knowledge of Kinesiology. Only those athletes who have participated in State Level or University level or National level competitions have been selected, irrespective of their Sports, Games and events.

Data collection and Analysis

Questionnaires were delivered in person to the Coaches, and a total number of 50 responses were collected. Similarly, 66 responses from the athletes were also collected through the Schools, Colleges and Associations. In order to have some more questionnaires from the Coaches, the investigator personally approached the Coaches coming from districts and collected more questionnaires. On the perusal of the data collected through the questionnaire, about five questionnaires from the athletes and five questionnaires from the coaches were found to be defective and hence the number of responses taken for this study is 60 from the Coaches and 60 from the Athletes.

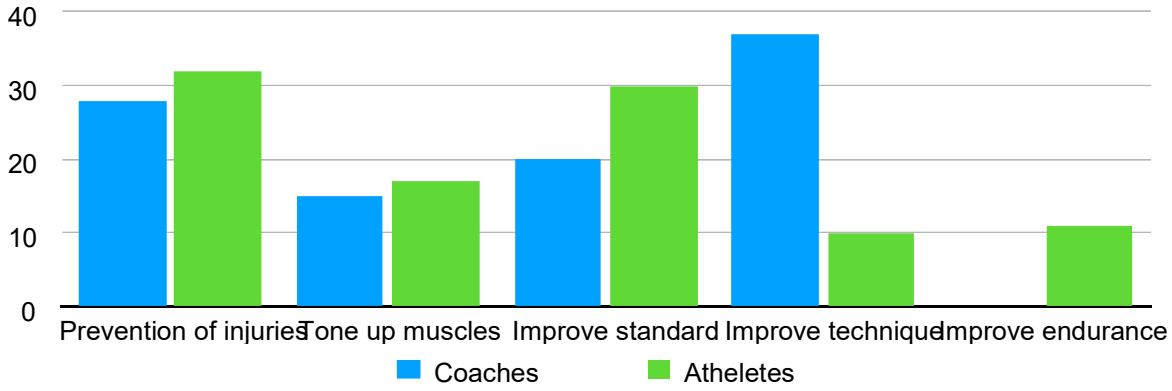
Findings

The following were the findings based on the collected data:

With regard to the knowledge of Kinesiology and the application of that knowledge by the coaches and Athletes, four questions were put to the subjects. The data received are presented in Chart 1. The analysis reveals that Coaches and athletes have different opinions with regard to the purpose of this discipline. While 22 Coaches assert that Kinesiological knowledge is to improve the technique, 19 athletes assert that is for the prevention of injuries. 53 coaches and 46 athletes accepted that knowledge of leverage is essential. 23 Coaches and 19 athletes do say that The change of climate shall affect the performances. 97% of the Coaches and 67% of athletes agreed that Follow through prevents injuries caused by the abrupt stopping of a moving body. The obtained data are further graphically presented in Tables 1 to 3.

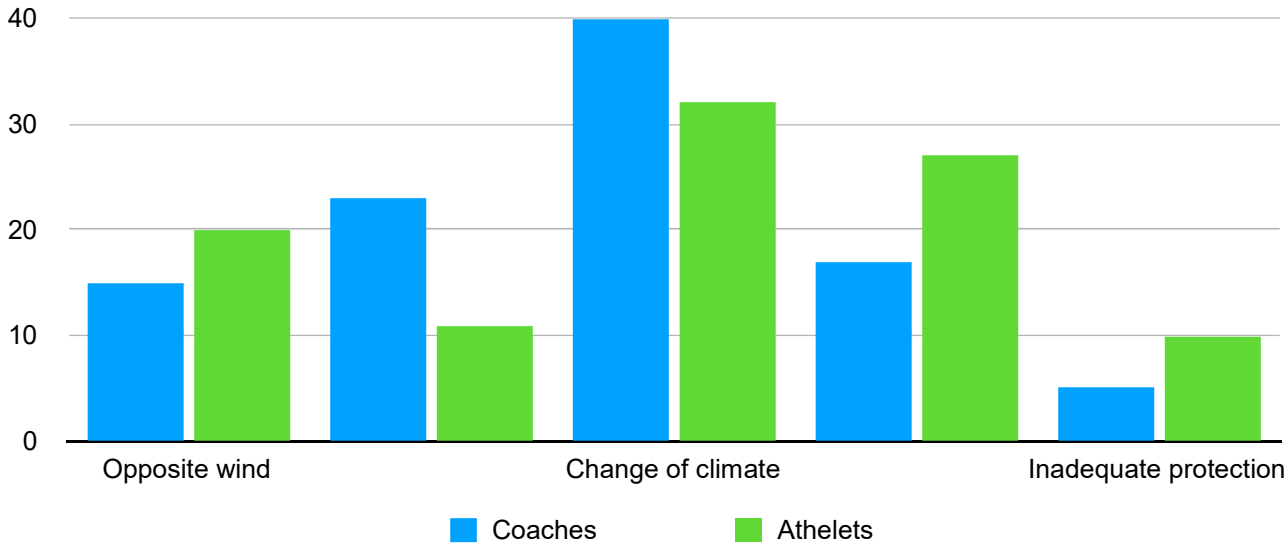
1. Evaluation of Knowledge of kinesiology and its Application among Coaches and Athletes.

Chart 1

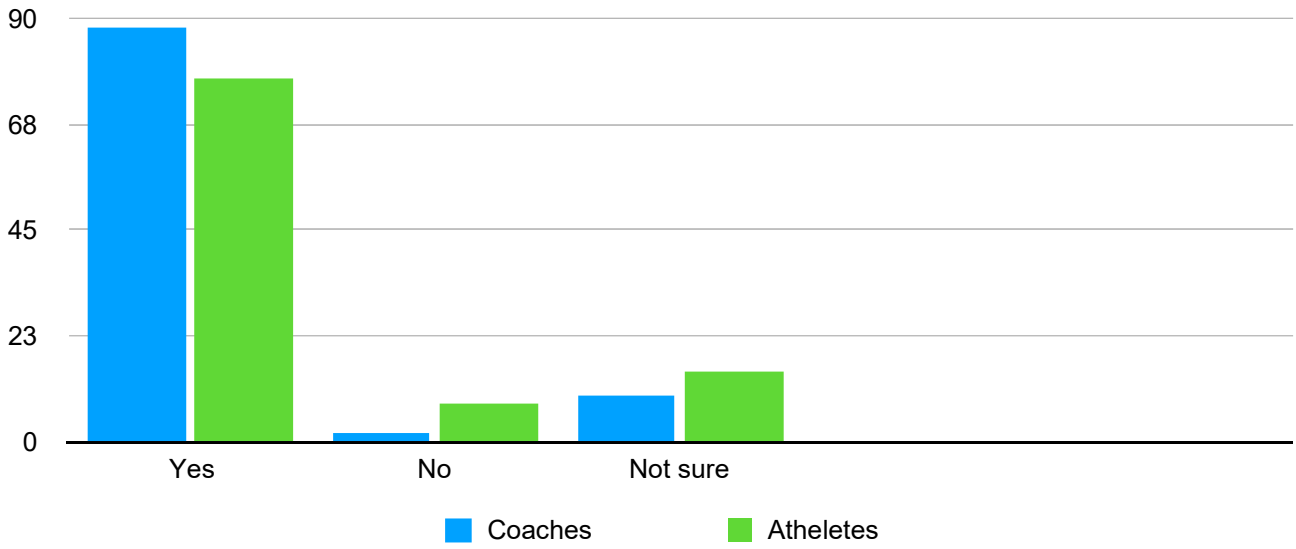


2. Evaluation of the knowledge of the need for Kinesiology among Coaches and Athletes.

Chart 2



3. Evaluation of Knowledge of the importance of leverage among Coaches and Athletes. Chart 3



Result

Physical Educators and Coaches need to understand muscles (Kinesiology) in order to teach students how to strengthen and maintain all big muscle groups in the body. Muscular strength and endurance need to be attained before skill in sports can reach its highest level. Knowledge and understanding of the muscular system are enhanced by the questions of how and where to activate individual muscles. Almost daily a coach or an athlete is confronted with these questions. A thoughtful question that always stimulates an interesting discussion is "What is the best way o do chins (pull-ups) palms toward the face or palms away". How can you physically educate something that you do not know or understand The investigator in his attempt to evaluate the Kinesiological knowledge amongst the Coaches and athletes obtained the necessary data presented in The graphical charts 1 to 3.

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Exploring the Emotional Maturity of Post Graduate Students

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Introduction

As everyone knows, God's greatest creation is the human race. The human mind, heart, and other attributes have a role in this. The human species is built on a foundation of strong emotions. Emotional development ranks high on the list of life's most crucial aspects. Any behavior shown by a human being is infused with emotional underpinnings. That which motivates thought and action is a result of these. Their effects on one's wellbeing, whether physical, mental, social, character or adjusting to new circumstances is far-reaching. Human emotions are shaped in large part by the maturation and learning processes. There is some evidence that a child's exposure to and instruction in the outside world can help him develop his abilities. It manifests itself in a wide range of emotions, including love, fear, anger, joy, and terror. Maturity in dealing with one's emotions is what's meant by the term 'emotional maturity'.

To be emotionally mature, one must learn to master their feelings rather than having them dominate their actions. In order to manage our feelings and thoughts, we must first recognize the role that false and unhelpful assumptions play in shaping them. A person's emotional maturity can be gauged by their level of wisdom and their willingness to take charge of their own lives.

Separate accounts of feeling and emotional development are needed to grasp emotional maturity. The Latin verb 'emovere', meaning 'to move', is the source of our English word 'emotion'. Experiencing emotions is part of being human. Emotions such as joy, expectation, anger, disgust, grief, astonishment, fear, and acceptance are fundamental to the human experience (Ashtaputre Sisode, 2016). Everything we do as people is influenced by our emotions. Only those who are emotionally mature are capable of expressing their feelings in a responsible manner (Kapri and Rani, 2014). The Penguin Dictionary of Psychology defines an emotionally mature adult as someone whose emotional responsiveness is appropriate and normal.

The term 'maturity' describes an end to natural growth. Emotional maturity is unrelated to physical maturity, which is expected but does not rise with age. Emotionally mature individuals are sensible, don't gripe, or place blame. They have complete control over their lives. They reflect on who they are and what role they have in other people's life. Emotionally mature individuals had a pleasant outlook on life and led well-adjusted lifestyles. There are various levels of emotional maturity. The highest level of emotional detachment comes from a complete awareness of emotions, letting go of all emotions, whether they are good or bad, and feeling content. Emotional maturity is a critical component of success and greatly predicts the level of success that a person will encounter during their lives.

Objectives of the Study

The objective of the study was to compare the emotional maturity between Arts and Commerce post graduate students of Pondicherry university.

Materials and Methods

Collection of data

Data for this study was collected in the campus by using standardized questionnaires. The questionnaires were administered personally by the research scholar to the subjects obtaining a genuine response from the subjects.

Selection of subjects

A random selection was used to choose sixty post-graduate students from Pondicherry university to participate in the study. Thirty of these students were from the arts, thirty from the Commerce.

Scale of Emotional Maturity

Drs. Yashvir Singh and Mahesh Bhargava (1988) created an emotional maturity scale with forty-eight items to assess the students' emotional development. Totaling 48 items across its five categories emotional instability, emotional regression, personality disintegration, social maladjustment, and lack of independence the emotional maturity scale measures emotional development.

A five point scale for self-reporting emotional maturity exists. The scale's items, which are in the form of questions and demand answers for each of the five options listed, are Very Much, Much, Undecided, Probably and Never.

Results

Table 1. Mean value, standard deviation, and 't' score of emotional maturity between Arts and Commerce students

Dimensions	Subjects	N	Mean	Standard deviation	't' Value
Emotional Instability	Arts students	30	25.60	6.50	1.713
	Commerce students	30	28.00	5.66	
Emotional Regression	Arts students	30	24.00	6.90	3.956*
	Commerce students	30	30.77	6.03	
Lack of Independence	Arts students	30	27.67	6.48	1.791
	Commerce students	30	30.77	6.55	
Personal Disintegration	Arts students	30	22.31	4.91	3.101*
	Commerce students	30	27.53	7.71	
Social Maladjustment	Arts students	30	24.80	5.05	1.860
	Commerce students	30	22.70	3.56	
Emotional maturity	Arts students	30	124.37	21.28	2.647*
	Commerce students	30	139.77	23.40	

* Significant at 0.05 level, Critical value: 2.00.

Table 1 exhibit that emotional maturity's dimensions of arts students and commerce students in emotional instability arts students have a mean and standard deviations of 25.60 and 6.50, commerce students have 28.00 and 5.66. The 't' value 1.713 shows no significant difference between arts and commerce discipline students. When

mean values are compared, commerce discipline students have more emotional instability than arts discipline students.

In emotional regression, arts students have a mean and standard deviation of 24.00 and 6.90; commerce students have 30.77 and 6.03. The 't' value 3.956* shows a significant difference between arts and commerce discipline student. Here, commerce discipline students have shown more emotional regression than arts discipline students.

In lack of independence, arts students have a mean and standard deviation of 27.67 and 6.48, commerce students has 30.77 and 6.55. The 't' value 1.791 shows no significant difference between arts and commerce students. When mean values are compared, commerce discipline students have more lack of independence than arts discipline students.

In personal disintegration, arts students have a mean and standard deviation of 22.31 and 4.91, commerce students have 27.53 and 7.71. The 't' value 3.101* shows a significant difference between arts and commerce discipline students. Here, commerce discipline students have shown more personal disintegration than art discipline students.

In social maladjustment, arts students have a mean and standard deviation of 24.80 and 5.05; commerce students have 22.70 and 3.56. The 't' value 1.860 shows no significant difference between arts and commerce students. When mean values are compared, arts discipline students have more social maladjustment than commerce discipline students.

In emotional maturity, arts students have a mean and standard deviation of 124.37 and 21.28 commerce students have 139.77 and 23.40. The 't' value 2.647* shows a significant difference between arts and commerce discipline student. Here, commerce discipline students have shown more emotional maturity than art discipline students.

Conclusion

From the results obtained in the study, it is concluded that, there is a significant difference between arts and commerce discipline students in emotional regression, personal disintegration and emotional maturity. There is no significant difference between arts and commerce discipline students in emotional instability, lack of independence and social maladjustment. This is because of the curriculum structure and approach of the students opted the particular discipline.

"Emotional maturity is a facet that is intimately connected to the individual's character. This is what the person's day-to-day interactions with themselves and their surroundings will ultimately boil down to. When a person can step back and evaluate situations with dispassion, we can say that they have developed emotionally. Constructive and engaging emotional expression is a hallmark of emotional maturity. Those who have developed to the point of emotional maturity are able to regulate their feelings, think rationally, know who they are, and express their emotions in appropriate contexts.

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Effect of Structured Resistance Training and Varied Intensities of Weight Training On Speed and Breath Hold Time among Weightlifters

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Abstract

Aim of the Study find out the assess the effect of structured resistance training and varied intensities of weight training on Speed and breath hold time among weightlifters. The study was formulated as a true random group design, consisting of a pre test and post test. The subjects (n=60) were randomly assigned to three equal groups of twenty men Weightlifters in each group. The groups were assigned as Experimental Groups I, II and control group respectively. Experimental group I was assigned as Structured Resistance Training (SRT) and Experimental group II was assigned as varied weight training (VWT) and control group. The control group was not given any special treatment except of their routine. Pre tests were conducted for all the subjects on selected Speed, and breath holding time The experimental groups participated in their respective training protocols for a period of twelve weeks. The statistical significance of the differences were tested through ANCOVA. In all cases 0.05 level was fixed to test the hypothesis of this research.

Key Words: Speed & Breath holding time.

Introduction

Sports in the present world has become extremely competitive. It is not the mere participation or practice that brings out victory to an individual. Therefore, sports life is affected by various factors like physiology, biomechanics, sports training, sports medicine, sociology and psychology etcetera. All the coaches, trainers, physical educational personals and doctors are doing their best to improve the performance of the players of their country. Weightlifters of all the countries are also trying hard to bring laurels, medals for their countries in International competitions.

Statement of the Problem

The purpose of the study was to investigate the effect of structured resistance training and varied intensities of weight training on Speed and breathe hold time among Weightlifters.

Limitation

Uncontrollable factors associated with the study were accepted as limitation and the following were considered as limitation of the research study:

1. Certain factors like rational habits like life style, daily routine, diet and climatic conditions were not taken into account in the study.

2. The influence of vigorous academic activity of students could have discouraged or motivated the subjects during training and during testing period.
3. The heterogeneous characters of the subjects in hereditary and environmental factors were recognized as limitations.
4. The subject's body type and socio economic status of the students were not taken into consideration.
5. Uncontrollable changes in climate and whether conditions such as atmosphere, temperature, humidity and other meteorological factors during the training programme were regarded as limitations.

Delimitation

This research will be delimited to the following areas:

1. Sixty (n=60) men Weightlifters who had represented their colleges in intercollegiate meets in Telangana were selected for this study.

2. The age of subjects for the study between 19 to 25 years and all the subjects were good in health.

3. Experimental period will be 12 weeks.

4. To test the hypothesis the following parameters will be analysed.

Dependent Variables

1. 1 Speed & Breath Holding Time

Independent Variables

1. Twelve Weeks Structured Resistance Training Exercises

2. Twelve Weeks Weight Training Exercises

Methodology

Selection of Subjects

To find out the effects of structured resistance training and varied intensities of weight training on selected Speed and breath hold time among college level Weightlifters, the investigator randomly selected 60 Weightlifters, who competed at inter collegiate level sports meets representing different colleges in Telangana. They were divided into three groups at random again consisting twenty subjects in each group and they were randomly assigned as experimental group I (SRT –Structured Resistance Training) and Experimental group II (VWT – varied weight training). And control group. The requirements of the experimental procedures, testing as well as exercise schedules were explained to them so as to avoid any ambiguity of the effort required on their part and prior to the administration of the study, the investigator got the individual consent from each subject.

Experimental Design

The study was formulated as a true random group design, consisting of a pre test and post test. The subjects (n=60) were randomly assigned to three equal groups of twenty men Weightlifters in each group. The groups were assigned as Experimental Groups I, II and control group respectively. Experimental group I was assigned as Structured Resistance Training (SRT) and Experimental group II was assigned as varied weight training (VWT) and control group. The control group was not given any special treatment except of their routine. Pre tests were conducted for all the subjects on selected Speed, and breath holding time The experimental groups participated in their respective training protocols for a period of twelve weeks.

The post tests were conducted on the above said dependent variables after the experimental period of twelve weeks for all the three groups. The differences between the initial and final means on selected variables were considered. The obtained data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis set for this study.

Criterion Measures

The following criterion measures were adopted to measure the test.

1. To find out the Speed of the subjects 50m run test was conducted and scores were recorded in seconds.
2. To find out the breath holding time, nose clippings and the stop watch were used to record the time.

Table I: Intra Class Correlation Coefficient of Test – Retest Scores

S.No	Variables	Coefficient of Correlation
1	Speed	0.93*
2	Breath Holding time	0.86*

* Significant at 0.05 level

Results on Speed

The statistical analysis comparing the initial and final means of Speed due to Structured Resistance Training and Varied Weight Training among Weightlifters is presented in Table II

Table II: Computation of Analysis of Covariance of Speed

	Structured Resistance Training	**Varied Weight Training**	**Control Group**	**Source Of Variance**	**Sum Of Squares**	**Df**	**Mean Squares**	**Obtained F**
Pre Test Mean	6.28	6.27	6.34	Between	0.05	2	0.02	0.77
				Within	1.85	57	0.03	
Post Test Mean	6.16	6.21	6.33	Between	0.32	2	0.16	5.71*
				Within	1.59	57	0.03	
Adjusted Post Test Mean	6.17	6.23	6.30	Between	0.15	2	0.08	13.68*
				Within	0.31	56	0.01	
Mean Diff	-0.12	-0.06	0.00					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16. *Significant

The obtained post test means on Speed on Structured Resistance Training group was 6.16, Varied Weight Training group was 6.21 was and control group was 6.33. The obtained post test F value was 5.71 and the required

table F value was 3.16, which proved that there was significant difference among post test scores of the subjects. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 13.68 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table III.

Table III: Scheffe's Confidence Interval Test Scores on Speed

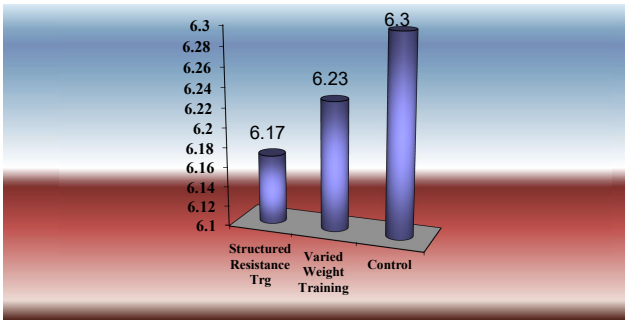
MEANS				Required C I
Structured Resistance Training Group	Varied Weight Training Group	Control Group	Mean Difference	
6.17	6.23		0.06	0.06
6.17		6.30	0.13	0.06
	6.23	6.30	0.07	0.06

* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Structured Resistance Training group and control group (MD: 0.13). There was significant difference between Varied Weight Training group and control group (MD: 0.07). There was significant difference between treatment groups, namely, Structured Resistance Training group and Varied Weight Training group. (MD: 0.06).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure I: Bar Diagram on Ordered Adjusted Means on Speed



Discussions on Findings on Speed

The effect of Structured Resistance Training and Varied Weight Training on Speed is presented in Table II. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 13.68 was greater than the required table F value to be significant at 0.05 level. Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table V proved that there was significant difference between Structured Resistance Training group and control group (MD: 0.13) and Varied Weight Training group and control group (MD: 0.07). Comparing between the treatment groups, it was found that there was significant difference between Structured Resistance Training and Varied Weight Training group among Weightlifters. Thus, it was found that Structured Resistance Training was significantly better than Varied Weight Training and control group in improving Speed of the Weightlifters.

Results on Breath Holding Time

The statistical analysis comparing the initial and final means of Breath Holding Time due to Structured Resistance Training and Varied Weight Training among Weightlifters is presented in Table IV

Table IV: Computation of Analysis of Covariance of Breath Holding Time

	Structured resistance training	**Varied weight training**	**Control group**	**Source of variance**	**Sum of squares**	**Df**	**Mean squares**	**Obtained f**
Pre Test Mean	33.20	30.60	32.25	Between	69.23	2	34.62	0.85
				Within	2327.75	57	40.84	
Post Test Mean	36.75	33.20	32.75	Between	192.03	2	96.02	3.39*
				Within	1616.70	57	28.36	
Adjusted Post Test Mean	35.89	34.23	32.58	Between	108.96	2	54.48	8.06*
				Within	378.30	56	6.76	
Mean Diff	3.55	2.60	0.50					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16. *Significant

As shown in Table, the obtained pre test means on Breath Holding Time on Structured Resistance Training group was 33.20, Varied Weight Training group was 30.60 was and control group was 32.25. The obtained pre test F value was 0.85 and the required table F value was 3.16, which proved that there was no significant difference among initial scores of the subjects. The obtained post test means on Breath Holding Time on Structured Resistance Training group was 36.75, Varied Weight Training group was 33.20 was and control group was 32.75. The obtained post test F value was 3.39 and the required table F value was 3.16, which proved that there was significant difference among post test scores of the subjects. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 8.06 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented

Scheffe's Confidence Interval Test Scores on Breath Holding Time

MEANS				Required C I
Structured Resistance Training Group	Varied Weight Training Group	Control Group	Mean Difference	
35.89	34.23		1.65	2.07
35.89		32.58	3.31*	2.07
	34.23	32.58	1.65	2.07

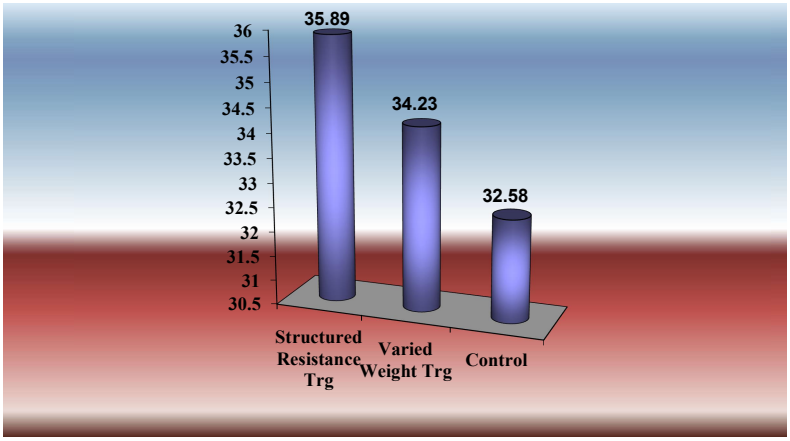
* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Structured Resistance Training group and control group (MD: 3.31). There was no significant difference between Varied Weight Training group and control group (MD: 1.65). There was no significant

difference between treatment groups, namely, Structured Resistance Training group and Varied Weight Training group. (MD: 1.65).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure II.

Figure II: Bar Diagram on Ordered Adjusted Means on Breath Holding Time



Discussions on Findings on Breath Holding Time

The effect of Structured Resistance Training and Varied Weight Training on Breath Holding Time is presented in Table IV. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 8.06 was greater than the required table F value to be significant at 0.05 level.

Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table proved that there was significant difference between Structured Resistance Training group and control group (MD: 3.31). There was no significant difference between Varied Weight Training group and control group (MD: 1.65). Comparing between the treatment groups, it was found that there was significant difference between Structured Resistance Training and Varied Weight Training group among Weightlifters.

Thus, it was found that Structured Resistance Training was significantly better than control group in improving Breath Holding Time of the Weightlifters.

Conclusions

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that structured resistance training and varied weight training exercises significantly improved Speed of the college level Weightlifters. Comparing between the treatment groups, it was found that structured resistance training was better than varied weight training group.

2. It was concluded that structured resistance training significantly improved breath holding time of the college level Weightlifters. Comparing between the treatment groups, it was found that there was no significant difference between structured resistance training and varied weight training group.

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Effects of Plyometric and Circuit Trainings on Selected Performance Variables among School Kho-Kho Players Vizianagaram, Andhra Pradesh

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Abstract

The aim of this study was to find out the effects of plyometric training and circuit training on selected performance variables of school kho kho players Vizianagaram (Dt) Andhra Pradesh .For this purpose randomly selected 75 school level kho kho players from Vizianagaram (Dt) Andhra Pradesh was selected and the performance variables selected were single chain run and double chain run. The study was formulated as a true random group design consisting of a pre-test and post test. The subjects (N=75) were randomly assigned to three equal groups of twenty five school boys. The groups were designed as experimental group I – plyometric training group, experimental group II Circuit training group and control group respectively. Pre test was conducted for all the 75 subjects on selected performance variables. The experimental groups (plyometric and circuit training) participated in respective training for a period of six weeks. The control group did not participated in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected to statistical analysis using ANCOVA. When significant F values obtained the results were further subjected to post hoc analysis using Scheffee's confidence interval test.
Key Words: Plyometric training, Circuit Training, Single Chain run, Double Chain Run

Introduction

Kho Kho is one of the most popular traditional sports in the country. Some of the interesting facts about the game. The position of the players sitting is random; one will never find the same set of players sitting in the same order as when the game starts. The game requires immense stamina and speed. It is a tag game of our country. Its roots are as old as the epic Mahabharata, with plans and strategies likely derived from the epic itself. As the tale narrates, on the 13th day of the war, the Kaurava Guru Dronacharya planned the sole tactics 'Chakravyuh', a special military defensive plan broke by Abhimanyu. Unfortunately, he died as he had to fight alone against 7 warriors and he was badly injured. His style of fighting reflected the concept of ring play – a defensive tactic in the game. The game during age-old times involved 'raths' and chariots and was named Rathera.

The Asian Kho Kho Federation first came into existence in 1987 at the time of the third SAF Games in India. The Kho Kho game gained international credit with the first Asian Championship which was held in Kolkata in 1996. The second championship was held in 2000 which added further shine to the game.The modern-day game was invented in the Indian state of Maharashtra. The Deccan Gymkhana of Pune tried to lend a sense of reliability and recognition to the game by introducing certain rules and regulations to make it more formal. As a result, countries such as Pakistan, Bangladesh, Nepal, Sri Lanka, and the Maldives also participated in the game. Sitting in

squares, diving, chain formation, making circles, pole dive, giving Chou, turning round the pole, running, dodging, sudden change of direction are basic skills of the game. (https://www.kreedon.com/kho-kho-game/)

Athletic performance has dramatically progressed over the past few years. Performance levels unimaginable before are now common place, and the number of athletes capable of outstanding results is increasing. One factor is that athletics is a challenging field, and intense motivation has encouraged long, hard hours of work. Also, coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. A broader base of knowledge about athletes now exists, which is reflected in training methodology (Bompa, 1999) .

Plyometric training is one of the best methods of developing explosive power in sports. Basically plyometrics provide a method of training for the optimum relationship between strength and speed which will ultimately manifest in self as explosive power. Today plyometric movement are performed in almost all sports. Basic strength level must be attained before starting plyometric training programme. The choice of exercise must correspond to age, sex and biological development of sports person. These should be gradually increase stress during a complete training cycle. Body weight should be the determining factor in assigning the value of jumps in ork out. Generally the number of sessions to devote the plyometric training is 2 or 3 times per week (Will and Freeman (1980) ,

Circuit training employs a series of exercises stations that consists of weight training, flexibility, calisthenics, and brief aerobic exercises. In circuit training the subjects can move rapidly from one station to the next and perform whatever exercise is to be done at that station within a specified time period. A circuit would consist of 8 to 12 stations and the entire would be repeated within three of four times, concentrating on the legs, abdomen, back, arms, shoulders and trunk. These exercises should be organized so that the subject moves from one muscle group to another. This method allows working hard on a muscle group and then resting it, while the other groups have their own work out (Tancred, 1987) .

Raju. S./S (2019) determined the effect of plyometric training on agility. Sixty Kho-Kho (N=60 were randomly selected as subjects and their age ranged between 16 and 18 years. The selected subjects were randomly assigned into two equal groups with thirty subjects each (N=30). Group I experimental, Group II Control group the experimental groups underwent their respective experimental treatment for twelve weeks 3 days per week and a session on each day. Control group was not exposed to any specific training apart from their curriculum. Agility was taken as variable for this investigation. The pre and posttest were conducted one day before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analysis the collected data. Scheffe's test was used as a post hoc test to determine which of the paired mean differed significantly. The results revealed that there was a significant difference between experimental groups on speed ($P \leq 0.05$) Further it related that the plyometric training and plyometric training produced significant improvement($P \leq 0.05$) on agility as compared to control group.

Shahram Alam et.al. (2012) fond out the effect of plyometric circuit exercises on the physical preparation indices of elite handball player in the city of Behbahan. The participants' records were registered in 4 pre- and post-tests and compared. The results of the study revealed that 6 weeks plyometric circuit exercises have meaningful effect on the participants' records in four tests (vertical jump- shuttle briskness- medicine ball throw- 30 meters speed run) and have caused improvements in the results of these four tests. Therefore, it seems that plyometric circuit exercises have been effective on the physical preparation indices of handball players and can improve the athletes' performance of this field.

Clutch et al. (2001) examined the effect of depth jumps and weight training on leg strength and vertical jump in two studies. It was found that weight plus jumping produced no added beneficial performance improvement than the jumping alone group. The weight training programme did not provide added benefit.

Fletcher and Hertwell (2002) examined the effect of an 8 week combined weights and plyometrics training program on golf drive performance. Eleven golfers were randomly assigned to control and experimental group. The control group continued their current training programmes. The experimental group performed combined weight and plyometric training twice in a week. The treatment group showed significant changes in head speed and driving distance.

Hortobagyi, et al., (1991) examined the effects of simultaneous training for strength and endurance on upper and lower body strength and running performance. High Resistance (HR), Low Resistance (LR) and Control groups of college men were used as subjects without the difference in body compositions in fitness. It was concluded that gains in strength were compromised by simultaneous endurance training. High resistance or low resistance training did not affect the gains in strength and endurance. It would appear to be unproductive to mix strength and endurance training because an athlete would gain maximum benefits in the mixed training.

Padder, M.W.J and Ramesh, G. (2021) determined the impact of ladder training and plyometric training on speed and agility among school level Kho-Kho players in Kashmir. Forty-five male Kho-Kho players from higher secondary school Vessu Anantnag, higher secondary school Wanpoh Anantnag and higher secondary school Kelam kulgam in Kashmir, who had participated in interschool competition, were selected as subjects at randomly and their age ranged from 14 to 17 years. The subjects (N=45) were randomly assigned in to three equal groups of fifteen Kho-Kho players each as experimental group-I, experimental group-II and control group. The experimental groups and control group underwent normal routine KhoKho practices and in addition the experimental group-I underwent ladder training and experimental group-II underwent plyometric training for one hour in the morning session. The control group was not given any special training apart from their normal daily exercises. The period of training was twelve weeks in a schedule of weekly three days for alternative days. The data was collected on selected dependent variable before and after the training period. The collected data were statistically analysed by using analysis of covariance (ANCOVA) was used to find the significant difference among the groups. The scheffe's post hoc test was used to find the paired mean difference if any. The level of confidence was fixed at 0.05. Based on the study it was conclude that ladder training and plyometric training were significantly improved the speed and agility among school level Kho-Kho players

Most scientific knowledge, whether from experience or research, aims to understand and improve the effects of exercise on the body. Exercise is now the focus of sport science. Research from several sciences enriches the theory and methodology of training, which has become a branch of science. Thus, this study was intended to fi9nd out the effect of plyometric training and circuit training on selected performance variables of school level kho kho players.

Methodology

Subjects

To facilitate the study, 75 school kho kho players from different schools from Vizianagaram (Dt). Andhra Pradesh were randomly selected as subjects and their age ranged between 14 to 16 years. They were further divided into three groups namely Plyometric training group, circuit training group, and control group (CG), on random basis.

Selection of Variables

Taking into consideration the feasibility and availability of instruments kho kho game performance variables, single chain run and double chain run were selected.

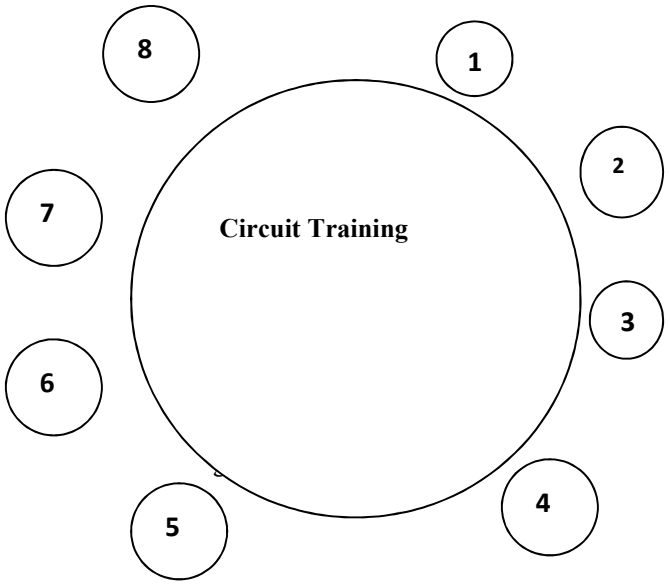
Training Programme

Tab 1: Training Schedule for Plyometric Training

Name of Exercise	Repetitions			Rest
	I & II	III & IV	**V & VI**	
Squat Jumps	10	12	14	2 minute
Jump to Box	10	12	14	2 minute
Box Jumping Both Legs	10	12	14	2 minute
Lateral Jump to Box	10	12	14	2 minute
Medicine Ball Chest Push with Partner	10	12	14	2 minute

Training Schedule for Circuit Training

DIAGRAM SHOWING CIRCUIT TRAINING SCHEDULE



1. Pouncing
2. Hopping
3. Skipping
4. Push ups
5. Sit ups
6. Squat thrust
7. Full Squat Jump (Forward and backward)

Training Schedule for Circuit Training

Day	First three weeks		Fourth to Sixth Weeks	
	Each Station	Set	Each Station	Set
Monday	45 Sec	2	45 Sec	3
Tuesday	50 Sec	3	50 Sec	4
Wednesday	55 Sec	4	55 Sec	5
Thursday	50 Sec	5	50 Sec	5

Friday	55 Sec	4	55 Sec	4
Saturday	60 Sec	3	60 Sec	3

Measuring Single Chain Run and Doiuble Chain Run

In a kho kho game situation, the chaser was asked to stand in the first post line and the subject for whom the single chain test was administered was asked to sat in the first box. On command 'go', the chaser run to the subject and gave 'Kho'. The timer was asked to start the stop watch at the moment of giving 'kho' to the subject. Immediately the subject began to run in single chain form in zig zag manner crosses the second line post and came back in the same way and cross the first line post. And the timer was asked to stop the stop watch which formed the single chain run time.

Similarly for double chain run, the subject began to run in double chain form in zig zag zag manner which forms the double chain time. Score was the time elapsed from the moment the subject was given 'kho' and moment of time crossed the line post.

EXPERIMETNAL DESIGN AND STATISTICAL ANALYSIS

The study was formulated as a true random group design consisting of a pre-test and post test. The subjects (N=75) were randomly assigned to three equal groups of twenty five school boys. The groups were designed as experimental group I – plyometric training group, experimental group II Circuit training group and control group respectively. Pre test was conducted for all the 75 subjects on selected performance variables. The experimental groups (plyometric and circuit training) participated in respective training for a period of six weeks. The control group did not participated in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected to statistical analysis using ANCOVA. When significant F values obtained the results were further subjected to post hoc analysis using Scheffee's confidence interval test.

Results:

Tab III: Computation of Analysis of Covariance on Single Chain Run (In Seconds)

	Plyometric	**Circuit training**	**Control**	**Source of variance**	**Sum of squares**	**Df**	**Mean squares**	**Obtained f**
Pre Test Mean	17.34	16.99	17.16	Between	1.8	2	0.90	
Standard Deviation	0.97	1.18	0.94	Within	83.7	72	1.16	0.78
Post Test Mean	15.04	14.04	17.34	Between	127.1	2	63.54	
Standard Deviation	0.87	1.25	0.97	Within	76.8	72	1.07	59.60*
Adjusted Post Test Mean	14.13	14.99	17.13	Between	118.0	2	59.02	
				Within	62.6	71	0.88	66.95*
Mean Diff	-2.30	-2.95	0.18					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.13, 2 and 71(df) =3.13 .
*Significant

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table iv

Tab IV: Post Hoc Analysis on Scores on Single Chain Run

MEANS			Mean Difference	Required C I
Plyometric Training	Circuit training	Control		
14.13	14.99		0.86*	0.67
14.13		17.13	3.00*	0.67
	14.99	17.13	2.14*	0.67

* Significant

Tab V: Computation of Analysis of Covariance on Double Chain Run (In Seconds)

	Plyometric	**Circuit Training**	**Control**	**Source Of Variance**	**Sum Of Squares**	**Df**	**Mean Squares**	**Obtained F**
Pre Test Mean	17.14	16.72	17.28	Between	6.2	2	3.10	2.26
Standard Deviation	1.17	1.08	1.16	Within	98.6	72	1.37	
Post Test Mean	15.04	13.13	17.14	Between	215.6	2	107.79	83.74*
Standard Deviation	0.96	1.26	1.17	Within	92.7	72	1.29	
Adjusted Post Test Mean	13.35	15.02	17.09	Between	164.7	2	82.37	101.10*
				Within	57.8	71	0.81	
Mean Diff	-2.10	-3.59	-0.15					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.13, 2 and 71(df) =3.13 .
*Significant

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table XV

Tab VI: Post Hoc Analysis Scores on Double Chain Run

MEANS			Mean Difference	Required C I
Plyometric Training	Circuit training	Control		
13.35	15.02		1.66*	0.64
13.35		17.09	3.73*	0.64
	15.02	17.09	2.07*	0.64

* Significant

Discussions on the Findings

The ANOVA results shown in Tables III and V, there was no significant different at pre test scores of single chain run timings and double chain run timings which proved that the random assignment of the subjects were successful and their scores before the training were equal and there was no significant differences. However the post experimental scores F values were significant, which proved the experimental treatments significantly improved performance variables of kho kho players. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 66.95 on single chain run and 101.10 on double chain run were greater than the required value of 3.13 and hence it was accepted that the plyometric training and circuit training, significantly improved the performance variables of kho kho playersd. The post hoc analysis results presented in Tables IV and VI on single chain run and double chain run on the obtained ordered adjusted means proved that there was significant differences existed between control group and plyometric training group and control group and circuit training group. This proved that due to six weeks plyometric training single chain run of the School Kho Kho players improved significantly. While comparing between the two experimental groups, it was found that plyometric training group was significantly better than circuit training group in improving single chain run and double chain run of school kho kho players.

Conclusions

Based on the results of this study, it was found plyometric training was better than circuit training in improving performance variables of school kho kho players.

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Effect of Practice with Tennis Ball on the Performance of Dribbling and Pushing Ability in Hockey

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Abstract

The purpose of the study was to find out the effect of practicing with tennis ball on the performance of dribbling and pushing ability in hockey. To achieve this purpose, 30 students from the B.P.Ed. course of study were selected as subjects randomly. They were divided into two groups, randomly again and there were 15 subjects in each group. They were given initial test in dribbling and pushing and the scores were recorded. The experimental group I was practising the skills with the standard hockey ball and the experimental group II was given practice with the tennis ball. An initial test was administered on all the subjects to assess their dribbling and pushing ability in hockey. The performance of every subject was recorded. One group was kept as experimental group ;I and the other group was treated as experimental group II. Both the groups were undergone the experiment for a period of six weeks. Each group had 15 subjects and they had six sessions of 75 minutes daily for a week and the total experimental period was for six weeks continuously. The experimental group I was practising with the tennis ball whereas the experimental group II was practising with the standard hockey ball to develop the skills in hockey. After the experimental period of six weeks, both groups were given the tests in dribbling and pushing ability and the scores were recorded and analysed. The results of the study showed that dribbling ability of the hockey players who practiced with tennis ball was significantly better than the hockey players practiced with standard balls. However, there was no significant difference between the treatment groups in altering pushing ability of hockey players. It was concluded that practicing with tennis balls for dribbling skills in hockey would improve the dribbling ability of the hockey players.

Introduction

Hockey is a beautiful game which calls for intelligence, keen eyes, powerful wrists, physical fitness, presence of mind, reaction time and above all mastery over all playing skills. Skillful technique results from careful and constant individual as well as team practice which adds enjoyment of the game to both players and spectators. The success in field hockey depends on understanding among the team players. According to Whitakar (1986) , In every tactical move in hockey one depends on team work and the individual skills such as good pushing, hitting, dribbling, stopping the ball, controlling the ball, anticipating the ball and keeping eyes on the ball and moving players. Tactics will succeed only through mastery on individual fundamental skills and with players thinking as a team.

Hudson (1971) describes that the game of Hockey is very complicated in terms of skills and team work. Control of the Hockey ball is perfected by the development of fundamental skills and there are lot of drills and

training methods to improve the skills of the game, Hockey. Morehouse and Miller (1967) are of opinion that "skill is the element of performance which enables the performer to accomplish a large amount of work with a relatively small amount of effort. Skill is acquired mainly through a refinement of the co-ordination of different muscle groups. Debey (1999) quotes that practice can be defined as any activity which a player undertakes in order to try to modify or consolidate skilled actions. Sample repetition of an action is not enough and all types of practices should stress quality. Quantity alone is not sufficient and indeed the practice of wrong movements may only serve to confirm bad habits and so will be detrimental. Normally it is accepted that shorter, more frequent practice sessions are most beneficial. But if the criterion of quality is applied, then it can be seen that length and distribution of practice sessions will be determined by how much a player can absorb and how long he or she can sustain the standard of the practice.

Tennis balls are used in teaching spiking skill in volleyball. Dhanaraj (1969) devised an exercise is as follows. The spiker goes nearer to the net with a tennis ball in his right hand. He jumps and throws it over the net and spikes into the other court. This is done with two-foot take of and also one foot take off. Like this, the use of bigger and smaller equipments had been carried out in other games also. Nyce (1972) conducted a research on the effect of a light weight bowling ball upon various stages of learning of beginning bowlers and found groups improved in their bowling ability. Puma (1974) conducted a study on the influence of practising in a smaller ring the performance of shooting in basketball and the results showed that the group which practiced in a smaller ring improved shooting accuracy. Henschin (1972) conducted a research on the effect of a small basket upon basket ball shooting accuracy with the non-dominant hand. The results showed that small basket training device appears to be more of a beneficial and for developing lay up shooting accuracy with the non-dominant hand for boys and girls than does practice at the regulation basket. Adams (1972) conducted a research on a study to investigate the effectiveness of using a light weight plastic ball in teaching the overhead volley in volley ball and found significant difference between pre and post test on the wall volley. Raymond conducted a research on the effect of two sizes of rackets on performance of the forehand and backhand tennis strokes. The results proved that the experimental group practiced with the smaller rackets had shown significant improvement in both the forehand and backhand strokes. Reginald Varges (1986) conducted a research on the effect of practicing with tennis ball on the performance of dribbling in soccer and was found that thee was significant improvement in dribbling. Radhalakshmi (1992) conducted a study on the effect of practising with various sized balls on dribbling ability in hockey. The result of that investigation showed a highly significant improvement in dribbling on the subjects of the experimental group after a period of five weeks training with difference size balls.

The review of related literature proved that unstandardized equipments tried on improving different skills of different sports and games contributed for improvement in skills of the game and the investigator also felt that practising with tennis ball would stimulate the muscle groups to co-ordinate successfully which was a genuine need for the better performance in dribbling and pushing ability in hockey. Hence, this study was devoted to find out the effectiveness of practising with tennis ball on dribbling and pushing ability in hockey.

Methodology

The purpose of the study was to find out the effect of practicing with tennis ball on the performance of dribbling and pushing ability in hockey. To achieve this purpose, 30 students from the B.P.Ed. course of study were selected as subjects randomly. The age of the selected students were ranging from 18 to 23 years. They were divided into two groups, randomly again and there were 15 subjects in each group. All were not familiar with the game hockey and they were beginners only. They were given initial test in dribbling and pushing and the scores were recorded. The experimental group I was practising the skills with the standard hockey ball and the experimental

group II was given practice with the tennis ball. After the period of six weeks training both the groups were tested in dribbling and pushing ability in hockey. The scores were recorded and analysed to find out the results of this study.

Design of the Study

The purpose of the study was to find out whether the practice with the tennis ball would significantly improve the dribbling and pushing ability in hockey. To achieve this purpose the experimental design was formulated, because a good experiment design maximize the treatment variance and minimize the error variance. With this in mind the investigator has taken all possible steps to control the extraneous factors while choosing the experimental design for the present study. Among the 30 subjects 15 subjects were randomly selected to practice with tennis ball and the other 15 subjects were asked to practice with the regular ball in all the evening sessions daily. An initial test was administered on all the subjects to assess their dribbling and pushing ability in hockey. The performance of every subject was recorded. One group was kept as experimental group ;I and the other group was treated as experimental group II. Both the groups were undergone the experiment for a period of six weeks. Each group had 15 subjects and they had six sessions of 75 minutes daily for a week and the total experimental period was for six weeks continuously. The experimental group I was practising with the tennis ball whereas the experimental group II was practising with the standard hockey ball to develop the skills in hockey. After the experimental period of six weeks, both groups were given the tests in dribbling and pushing ability and the scores were recorded and analysed. Thus the experimental design selected by the investigator was the "Post test only random group design" as recommended by Clark and Clark. (1984) The independent groups 't' ratio (uncorrelated) formula as stated by Clarke and Clarke (1984) was used to test the difference between two groups at 0.05 level of significance.

Results:-

Tab I: Means, Standard Deviation, Standard Error Mean Difference and Obtained `t' Value for the scores of the Dribbling Test of the Groups practiced with Standard Ball and Tennis Ball.

Groups	Mean	Mean Difference	SD	Standard error of Mean	`t' Value
Tennis Ball	14.9	2.7	.55	.81	3.33*
Standard Ball	17.6		.66		

Required `t' value = 2.05 * Significant at .05 level

Table I shows that the mean values obtained by the groups that practiced with tennis ball and standard ball were 14.9 and 17.6 respectively. The mean difference was 2.7. The standard deviation values for the scores of the dribbling test of the groups that practiced with tennis ball and standard ball were .55 and .66 respectively and the standard error of the mean was .81. The `t' value obtained was "3.33". The mean difference `2.7' showed that the group practiced with the tennis ball proved to be better in dribbling than the group that practiced with the standard ball. This mean difference was found to be significant at .05 level with 28 degrees of freedom as the obtained `t' value "3.33" was more than the table value of "2.05". Therefore it is proved that the group which practiced with tennis ball improved significantly in dribbling than the group that practiced with the standard ball.

The data regarding the mean values, standard deviations, standard error of the means of the final scores and the `t' value of the pushing ability of the groups that practiced with the standard ball and tennis ball are shown in the table II.

Tab II: Means, Standard Deviation, Standard Error Mean Difference and Obtained `t' Value for the scores of the Pushing Ability of the Groups practiced with Standard Ball and Tennis Ball

Groups	Mean	Mean Difference	Standard Deviation	Standard error of mean	`t' Value
Tennis Ball	58.8	1.69	.4.22	.1.56	1.08
Standard Ball	57.1		.4.36		

Required `t' value = 2.05 Not Significant at .05 level

Table II shows that the mean values obtained by the groups that practiced with tennis ball and standard ball were 58.8 and 57.1 respectively. The mean difference was 1.7. The `t' value obtained was 1.08. The mean difference `1.06 showed that the group practiced with the tennis ball had not improved in pushing ability of hockey as the obtained t value of 1.08 was less than the required value to be significant at 0.5 level.

Discussion

The investigator was convinced with the results that the practiced in dribbling with tennis ball improved the performance in dribbling ability in hockey. The training given to the experimental group with tennis ball had an influence on the experimental group and had shown improvement in dribbling than the other group that practiced with standard hockey balls in the final test. The results of the study showed that any one could became a good hockey player provided he has a good control over the ball. In practice a hockey player at the beginning stage would find it different to control the nonstandard ball with standard sticks whereas it was easy to control the regulation balls with sticks. Therefore the experimental group was given training for dribbling ability with tennis ball. Thus, practicing with tennis ball was found significant and highly satisfactory as the group practiced with tennis ball showed greater improvement than the group that practiced with regular stick and ball. Therefore it was strongly felt that the improvement in the group that practiced with tennis ball was definitely due to the practice they had with tennis ball and regular stick. However, in the case of pushing ability, the practice with tennis ball did not alter the pushing ability of the hockey players as the obtained 't' value was less than the required 't' value to be significant, as pushing practice with light weight ball than standard one did not improved the hand strength.

Conclusions

It was concluded that practicing with tennis balls for dribbling skills in hockey would improve the dribbling ability of the hockey players.

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Effect of Resisted Sprint Training on Muscular Strength among Intercollegiate Athletes

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Abstract

The purpose of the present study was to investigate the effect of resisted sprint training on muscular strength among intercollegiate athletes. To achieve the purpose of the study thirty college level male athletes were selected from Government Degree College, karvetinagaram, Chittoor District, Andhra Pradesh, India during the year 2022. The athletes, who has taken as a subjects age ranged from 18 to 25 years. The selected athletes were divided into two equal groups consists of 15 subjects each namely experimental group and control group. The experimental group underwent Resisted Sprint training for eight weeks. The control group was not taking any training. In this study Muscular strength was taken as criterion variable. The selected athletes were tested on muscular strength was measured through modified sit ups test. Pre-test score was taken before the training period and post- test score was measured immediately after the eight weeks training period. Statistical technique 't' ratio was used to analyse the means of the pre-test data and post test data of experimental group and control group. The results were showed that there was a significant difference found on the criterion variable. The difference is found due to Resisted Sprint training given to the experimental group on muscular strength when compared to control group. Keywords: Resisted Sprint Training, Muscular strength and 't' ratio.

Introduction

Strength and conditioning programs have evolved from mainly strength training into well attention exposed, periodized programmes that central on using a variety of modalities to improve athletic performance. While there a vast number of modalities that may be utilize in a sport performance program, the most common seem to be strength training, Olympic weightlifting, plyometrics, and agility exercises. The periodization scheme used may follow linear or undulating values. Common equipment used in strength and conditioning program differ broadly depending on space, setting, and financial resources. Equipment may include squat racks, barbells, dumbbells, boxes, and objects of different weights and materials. However the goal of these methods and equipment is to enhance sports performance.

Uphill training:

- It helps develop power and muscle elasticity.
- It improves stride frequency and length.
- It develops co-ordination, encouraging the proper use of arm action during the driving phase and feet in the support phase.
- It promotes strength endurance.
- It develops maximum speed and strength.

Research Methodology

Selection of subjects

The purpose of the study was to find out the effect of Resisted sprint training on muscular strength among intercollegiate athletes. To achieve this purpose of the study, Intercollegiate athletes were selected as subjects at random. The athletes, who has taken as a subjects age ranged from 18 to 25 years

Selection of variable	
Independent variable	**Resisted sprint training(uphill Running)**
Dependent variable	**Muscular Strength**

Experimental Design and Implementation

The selected subjects were divided into two equal groups of fifteen subjects each, such as a Resisted Sprint training group (Experimental Group) and control group. The experimental group underwent resisted sprint training for three days per week for eight weeks. The control group was not taking any training. The following physical variable namely muscular strength was selected as criterion variable. All the subjects of two groups were tested on selected criterion variable Muscular strength was measured through modified sit ups test at prior to and immediately after the training programme.

Statistical technique

The 't' test has used to analysis the significant differences, if any, difference between the groups respectively.

Level of significance

The 0.05 level of confidence was fixed to test the level of significance which was measured as an appropriate.

Analysis of the Data

The significance of the difference among the means of the experimental group has found out by pre-test. The data had analysed and dependent't' test has used with 0.05 levels as

Confidence:

The basis of this results obtained the following conclusions are drawn,

1. There was a significant difference between experimental and control group on Muscular strength after the training period.
2. There was a significant improvement on muscular strength. However the Improvement was in favour of experimental group due to eight weeks of resisted sprint training.

Table I: Analysis of t-ratio for the pre and post test scores of experimental and control group on Muscular strength (Scores in numbers)

Variable	Group	Mean		SD		df	't' ratio	P value
		pre	post	Pre	post			
Muscular Strength	Control	37.53	38.26	1.99	1.62	14	1.703	0.111
	Experimental	38.73	41.60	1.70	1.45	14	8.911	0.001**

***Significance at 0.05 level of confidence.**

The mean of pre test and post test experimental group were 38.73 and 41.60 respectively. The pre test and post test means for control group were 37.53 and 38.26 as shown in the table – I. The mean difference between experimental and control group are 2.867 and 0.73 and p- value is lower than 0.05 in Experimental Group. This means that there was statistically significant rise in athlete scores in the post test in experimental group. In control group p-value is greater than 0.05. This means that there was statistically no significant in athlete post test scores. The obtained 't' ratio was 8.911* since the obtained 't' ratio was greater than the required table value of 2.145 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant.

Discussions on Findings

The result of the study shows that the experimental group, namely resisted sprint training group had significantly improved the selected dependent variable that is muscular strength, when compared to the control group. It is also found that the improvement caused by resisted sprint training when compared to the control group.

Conclusion

The basis of the results obtained the following conclusions are drawn,

1. There was a significant difference between experimental and control group on muscular strength after the training period.
2. The p-value is less than the significant value 0.05 in Experimental group and p-value is greater than the significant value 0.05 in control group.
3. There was a significant improvement on muscular strength. However the improvement was in favour of experimental group due to eight weeks of resisted sprint training.

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National / State Physical Fitness Scheme – Health for All

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Abstract: One of the challenges of modern physical Education is how to make value Physical Education effective and useful to the society. Education at present with its emphasis on materialism and competition for achievement has side lined its central concern for the development of physical, mental, social, moral, and spiritual side of human personality. Let us provide to the present generation the opportunity of learn to live and contribute best to the society. "Fit/healthy people are asset and weak are liable to the nation". Introduce State or National level physical fitness drive similar to National Physical Efficiency Drive organized in India from 1959 to 1978. Men and women of all age groups of non and school going population participated. The scheme based on the age. Group 1- men below 18 yrs, group 2- 18 to 34, group 3- 35 to 44, group 4- 45 and above. Women group 1- below 16 yrs, group 2- 16 to 30, group 3 - 31 above. Tests consist of different components- strength, speed, endurance, flexibility and body composition. Depending on total score awards presented with one, two and three stars respectively. With modern technology, the scheme can be administered with greater number of centers effectively to reach maximum people. The scheme of this nature is in many countries and have met with great success. This scheme if implemented can also serve as basis for winning medals.

Introduction:

The aim of this scheme is to activate interest in Physical Fitness and health in particular to arouse enthusiasm among the young and elderly of both sex in pursuit of their standards of physical excellence. Health should be of immediate and ultimate concern of any society at any point of time. when the benefits of science and technology are around, the slackness on the part of people is worst than any disease. Body is the instrument to perform duties of life and should be maintained in a healthy condition for efficient functioning. Health is not merely the absence of disease, rather it is complete state of physical, mental and social wellbeing of complex factors that represents at all levels of vital body functions. The human body is one of the greatest wonders of the nature. Very few realize that just as a machine / car maintenance / fine tuning, like wises human body needs proper care, exercise, balanced diet, rest & relaxation that are pass wards to good health, termed as body fitness. Good health is priceless possession to any man or women. It is unfortunate that many people do not realize their maximum potential and never function at an optimum level of efficiency

At this stage, our concern is health related fitness otherwise called as **Health for All**. Physically fit citizens are asset and weak are liable to the nation. The Human Resource Development of the nation is based on fitness levels of its people. Fitness is an ability of an individual to perform daily task with vigor and alertness without undue fatigue to body and mind. Health related fitness is necessary to every citizen, men or women of all ages irrespective of their profession. The new term for fitness is wellness. The factors that define wellness include not only traditional criteria of fitness but also adaptability to cope up with stress, feeling of accomplishment, ability to express positive and creative life style, feeling of contentment and happiness. For example. Bus conductors who walk most of the

time to issue tickets had less heart attacks than more sedentary bus drivers. Similarly, It was found that the postal workers who delivered the mail had lower incidence of heart attack than those who stood and sorted the mail.

American College of Sports Medicine endorse that adult should have 30 minutes or more moderate physical activity in a day as the human body is designed for movement and intense physical activity. Lack of physical activity in the average life will lead t**o hypo- kinetic disease.** According to recently published research in the journal of the American Medical Association, post-menopausal women who walked four or more hours a week had 41% lower risk of hip fracture when compared to those who did little or no exercise. The greatest benefits occur when the most sedentary become somewhat more active. 45 to 75 year old, who become active even after years of sedentary life, experiences low risk death an add years of life.

India and China got their independence more or less at the same time. Then leaders of China wanted their countrymen to be happy and healthy. They believed education was important and health was more important. Germany- the size of Kerala State in terms of population, could conveniently rival the sporting might of the U.S.A. in Olympic Games. Look at Japan and Korea. Tiny nation have been exhibiting their supremacy in international competitions. U.S.A. during 1963 –President Physical Fitness scheme introduced by enacting a bill in the National Assemble as yearly feature irrespective of the party in power. There was a huge opposition for the bill. Then President, John F. Kennedy convinced the members with a statement that he was investing considerable amount on this scheme so that many hospitals need not be built in future. The spectacular progress achieved by the developed countries is attributed to their strong commitment to their broad based policies of Phy. Edu & Sports.

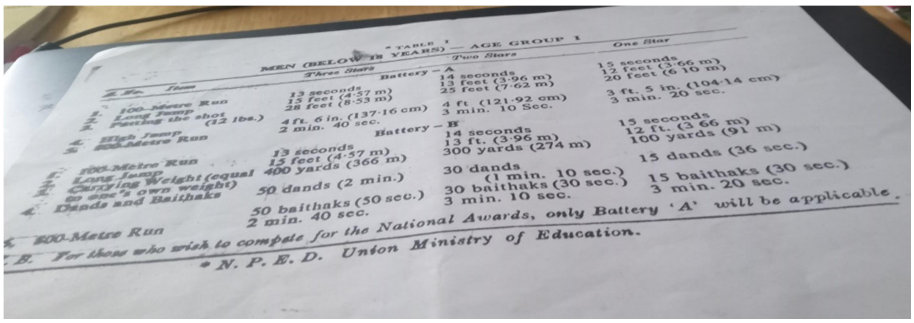
Situation in India: Children of every nation are born mostly with same capabilities. It is the environment that makes world of difference. It is where India differ with others. There was two occasions in the country once in 1950s and in 1960s, the system of education could have been revised with greater trust on Phy. Edu & Sports. This creates a situation where in majority of the population denied of the opportunity of sports participation to derive health benefits. To fill up gap, "National Physical Efficiency Drive" was prevalent from 1958 to 1978 organized by the govt. of India. People participated length and breadth of the country with bubbling interest. An awareness of being physically fit was gaining momentum. This was similar to the President Physical Fitness Scheme in United States of America. Policy makers and the government in India may feel that education, sports and youth welfare programmes are the non-profitable entities unlike other areas of agriculture, science & technology. But money spent on education, sports and youth welfare programmes has much more value as it can play greater role in Human Resource Development, men behind machinery fit enough produce greater results.

Need for State Physical Fitness Scheme

Degeneration of morals, ethics and social values result in human rights violation, gender apartheid, criminalization of politics, damage to public property, bomb culture, terrorism, corruption and bureaucracy are dangers to the society. The youth instead of contributing for salvation of nation's problems are encountered with the problems of eve teasing, drug addition, dowry deaths, unemployment, aids., social and economic inequalities and face many health problems. Reasons are many. 'State Physical Fitness Scheme' is the answer to many of these problems as it has a message to all age groups of both sex with no restrictions for participation, no selections, no entry fee and it is individuals responsibility.

It is a competition against once own ability. The test batteries aim to develop speed, agility, strength, endurance, stamina, body balance and health in general. The scheme based on the age. Group 1- men below 18 years, group 2- 18 to 34, group 3 - 35 to 44, group 4- 45 and above. Women group 1- below 16 years, group 2- 16 to 30, and group 3 - 31 above. The test items are like 100 m. Run, 400 m. walk, Long Jump or Standing Broad Jump, Throwing Shot Put or Cricket ball, High Jump or Standing High Jump, Pull-ups, Dands or Baithaks, Suryanamaskar and one of the Asans spread to different age group tests. Tests and norms are decided according to age and sex.

Participants depending on their test scores badges and certificates of **One Star, Two Stars, and Three Stars, Certificates are awarded**



This is the test battery used for group one. Similar test batteries are used for remaining groups, men and women.

Salient Features of the Scheme:

1. If a person wins one star this year and his target for next year is to win higher stars to compete higher test battery.
2. First and second place winners of below 18 yrs and below 16 age group from each center shall have district level and inter district competition to decide state level winners which may serve as incentive to enter competitive sports. Winners will be honored with **State Physical Fitness Awards.**
3. This could be implemented in the State as **'Chief Ministers Physical Fitness** Scheme' by enacting law in the State Assembly to become annual feature irrespective of the party in power.
4. A committee with a technical expert as Chairman prepare modalities of entire scheme and submit Report to the concerned Ministry in the government. The committee would consider all areas for successful implementation.
5. NPED scheme discontinued for the reasons not known. Proposed scheme may be effective when prepared with the base of present conditions of education, science and technology advancement.

Conclusion:

I believe that the authorities concerned would realize the importance of the – **Health for All** in the form of **'Chief Minister Physical Fitness** Scheme' as in U.S.A. Once again I reiterate the values of being physically fit – free from disease, increase productivity, and minimize medical expenses, happiness in the family, positive thinking, and increase life expectancy. If administered not only eye-opener to the Central Government and role model to other States as well as plus point to the State Government as it is beneficial to all sections of people.

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Effect of Aerobic Dance on Physical Variables of Women Degree College Students in Peddapaali Telangana

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Abstruct:

The purpose of the study was to investigate the effect of Callisthenic aerobic dance on selected Physical variables of women Degree college students of peddapalli district to achieve the purpose of the study, 50 women students were selected from different colleges of peddapalli. The subjects age ranges from 17 to 23 years. The selected students were divided in to two equal group consists of 25 students, namely experimental and control groups. The experimental group given 12 week of aerobic dance training and control group was not participate in any special training apart from their regular spots and practice. The subject was tested on selected criterion variables such as Strength and Agility. Strength was measured by Standing Broad jump (meters) and Agility was measured by Shuttle run (count in seconds. The pre- test was taken before the program and post –test was measured of experimental groups offer the 12 weeks of aerobic dance training. The result of the present study has revealed that there was in significance difference between experimental and control groups on selected variables of women degree college students. The Experimental group students having well Strength and Agility than Control group students.

Keywords: Strength, Agility, Aerobic Dance and women Degree college students.

Aerobic dancing is an aerobics style in which a group instructor choreographs several short dance combinations and teaches them to the class. This is usually achieved by teaching the class one to two movements at a time and repeating the movements until the class is able to join the whole choreography together. Aerobic music is used throughout the class. This is sometimes followed by a strength section which uses body weight exercises to strengthen muscles and a stretch routine to cool down and improve flexibility. Classes are usually 30–60 minutes in length and may include the use of equipment such as a barbell, aerobic step, or small weights.

In freestyle aerobics, the instructor choreographs the routine and adjusts it to the needs and wants of her/his class. There is often no difference between base movements in freestyle and pre-choreographed programs. It is practiced to improve aerobic fitness, flexibility and strength.

Statement of the Problem:

This study evaluates the physical fitness of the college student through practice of Aerobic dance for healthy life.

1) The effect of dally practice of activity during the school years and continuing throughout life on the improvement of physical fitness components (motor). i.e. speed, endurance, agility, strength, and flexibility and physiological variables i.e. vital capacity, systolic blood pressure and Diastolic blood pressure.

2) The development of physical health depends upon their motor abilities up to a very high extend; the easier process should be incurred to develop that type of motor ability.

Objective of the Study:

The study was undertaken with the following objectives.

1. To investigate the Agility status of the women Degree college students in peddapalli.
2. To investigate the Strength status of the women Degree college students in peddapalli.

Methodology:

Sample of the study:

The researcher will select randomly Women Degree college students in Peddapalli district as subjects between the age group of 17-23years. The subjects were chosen from different Women Degree college students in Peddapalli district of Telangana State For the present investigation, the research scholar has selected 50 Women Degree college students as Control 25 Women Degree college students as Experimental Group considered as shown below. Aerobic Dance training will be given to experimental group for 12 weeks for the same students and not training was given to control group.

Sample of Aerobic Dance Training Exercises.

SI. No	Category of the subjects	Category	Age Group	Number of subjects
1	Control Group	School students	17-23years	25
2	Experimental Group	School students	17-23years	25
Total				50

Schedule of the Training:

The training schedule is designed to the experimental group to practice of Aerobic Dance one hour ever day in the morning, six days a week up to twelve weeks except on Sunday. The training time is scheduled between 6-A.M to 7 A.M. For a good workout that's a lot of fun, aerobic dance steps are a good place to turn. While a traditional aerobics class might be boring for dancers, there are plenty of dance steps that constitute aerobic exercise; these steps get your heart rate up, which conditions your heart and lungs, not to mention burns calories and fat.

Types of steps in Aerobic Dance will be given in the morning one hour.

1. Aerobic Dance Steps 2. Chorus Line Kicks 3 Grapevine Circle 4. Ballet Leaps and Tap Wings.

Tests/ Tools used:

The table shows the variables, Tests/Tools and the Unionist of Measurements of selected physical and physiological Variables used in this study. Among group differences were assessed by using 't' test. The level of 0.05 was considered significant.

Showing the physical variables, Tests and equipment required and its Measuring Units.

S.No	Variables	Test and equipment's Required	Measuring Units
1	Strength	Standing Broad jump	Meters
2	Agility	Shuttle Run	Seconds

Statistical analysis:

Mean, standard deviation, standard 'norms' simple and multiple correlation coefficients and regression equations of various physical parameters will be computed.

Comparison of Strength and Agility Among school students of peddaplli,Telangana.

Variable	Group	N	Mean	S. D	"t" ratio
Strength	Experimental group	25	6.86	0.38	1.32
	Control group	25	6.86	0.56	
Agility	Experimental group	25	6.48	0.63	
	Control group	25	6.05	0.24	4.39

Significance at 0.05 levels.

The above table depicts the mean value, standard deviation and 'Strength and Agility. There was significant difference in 'Strength and Agility among control group and Experimental groups of the Women Degree college students of Peddapalli,Telamgana. Experimental group's students have good Strength and Agility than Control group students. The above table shows the calculated 't' value 1.32and 4.39, which is significant at 0.05 levels.

Result:

The above result shows that there was significant difference between the Experimental group and control group in the selected physical variables such as Strength and Agility between Experimental group and Control group students. There was significant difference in Strength and Agility of Women Degree college students of Peddapalli, Telangana. The Experimental Group of students were having good Strength and Agility than Control Group students of Peddapalli, Telanngana.

Conclusion:

Finally, I concluded that on the basis of result, there was a significant difference between Experimental group and control groups on selected Physical variable like Strength and Agility.

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Effect of Yogic Practices and Physical Exercise on Selected Psychological Variables among High School Girls

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Abstract

To achieve the purpose of this study, sixty high school girl students (N= 60) of standard 8^{th} to 10^{th} class from Municipal High School Girls were randomly selected as subjects from Nandyal district, Andhra Pradesh. Their age ranged from 13 to 17 years. The selected subjects (N=60) were divided into three equal groups and named Group–I as yogic practice group, Group–II as physical exercises group and Group–III as control group, each group consisting of twenty subjects. Subjects in the Group-I underwent the yogic practices, subjects in the Group-II underwent the physical exercises and subjects in the Group–III did not go through any specific yogic (or) physical exercise but their regular practice. During the training period, training was given for both experimental groups. The yogic practices and physical exercises were given for twelve weeks, five days per week for forty five minutes each day in the morning session under the supervision of the investigator. The psychological variables namely somatic and cognitive anxiety. Psychological parameters were measured by standard tests namely competitive state anxiety questionnaire-II (CSAI-2) developed by Martens, Burton, Vealey. The data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyze the collected data. Scheffe's post hoc test was followed to determine the level of significant difference between the paired means. All of the statistical analysis were computed at 0.05 level of significance. Yogic practices and physical exercises groups had shown significant changes in speed and agility, when compared to control group among High School Girls. Physical exercise group are better than yogic practices on speed and agility among High School Girls.

Keywords: Yoga, physical exercise, speed and agility

Introduction

Today performance in sports not only demands systematic training to develop physical, physiological variable and technical aspects of sports but also demands training and consideration of psychological characteristics of success. In this field, Sports psychology is the science of applying Psychology to sports. It is a study of behavioral science in sports setting. Sports psychology is gradually and steadily gaining momentum in the field of training of high level sports persons. Today, sport is no more a recreation. Psychological preparation is very essential to any competitive sports continually urge players to 'think' out to concentrate. Psychological fitness is almost important because a player cannot be in the right time. It is of little use to have superstic work and footwork without fitness, because a player will never have the stamina to carry out his or her skills having run half the length of field psychological parameters where the knowledge and application of exercise physiology is important towards the attainment of top performance. The physical educationists and coaches are trying to bring the new innovations as they are deeply involved in the preparation of sportsmen for present and future. The modern trend in preparation of sportsmen is to proceed in a scientific manner and take its help of allied sciences to achieve a top level of

performance. The origin of anxiety may be either psychic or somatic or even both. The most vital point in each case is the intensity of abating, that triggers off psycho-chemical reaction on the body and creates a vicious circle. Complex psychic state like depression, helplessness, threat to ego and aggression's etc. may produce psychological imbalance.

Purpose of the study

The purpose of the study was to find out the effects of yogic practices and selected physical exercises on psychological variables among High School Girls

Methodology

The purpose of the study was to investigate the effects of yogic practices and selected physical exercises on psychological variables among High School Girls. 60 subjects were randomly selected from Municipal High School Girls from Nandyal District, Andhra Pradesh. Their age ranges from 13 to 17 years. The selected subjects (N=60) were divided into three equal groups and named Group–I as yogic practice group, Group–II as physical exercises group and Group–III as control group. Each group consisting of twenty subjects. Subjects in the Group-I underwent the yogic practices, subjects in the Group-II underwent the physical exercises and subjects in the Group–III did not go through any specific yogic (or) physical exercise. During the training period, training was given for both experimental groups, the yogic practice and physical exercises were given for twelve weeks, five days per week for forty five minutes each day in the morning session under the supervision of the investigator.

The psychological variables namely somatic and cognitive anxiety. Psychological parameters were measured by standard tests namely competitive state anxiety. Questionnaire-II (CSAI-2) developed by Martens, Burton, Vealey. The data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyse the collected data. Scheffe's post hoc test was followed as a post hoc test to determine the level of significant difference between the paired means. All of the statistical analyses were computed at 0.05 level of significance.

Analysis of the data

Table 1: Analysis of covariance of pre, post and adjusted post-test means of yogic practices, physical exercises and control groups on cognitive and somatic anxiety

Test	Yogic practice group	Physical exercises group	Control group	SOV	SS	df	MS	F-ratio
Cognitive Anxiety								
Pre test								
Mean	24.68	24.62	23.68	B.M.	9.04	2	4.02	0.74
SD(±)	2.15	2.09	2.98	W.G.	250.62	40	4.96	
Post test								
Mean	19.43	21.06	23.50	B.M.	123.79	2	65.89	24.32*
SD(±)	1.07	1.30	2.00	W.G.	178.87	40	2.50	
Adjusted post test								
Mean	19.43	21.07	23.47	B.S.	116.61	2	60.30	22.53*
Somatic Anxiety								
Pre test								
Mean	16.25	16.06	17.62	B.M.	22.29	2	10.64	0.62
SD(±)	0.75	0.89	5.83	W.G.	627.68	40	15.17	
Post test								

Mean	13.56	14.93	16.31	B.M.	50.50	2	29.25	20.84*
SD(±)	1.02	1.28	1.00	W.G.	52.31	40	1.28	
Adjusted post test								
Mean	13.53	14.89	16.38	B.S.	53.78	2	31.89	23.08*
				W.S.	48.25	39	1.22	

SOV – Source of variance, SS – Sum of square, df – degrees of freedom, MS – Mean square, B.M. -Between, Mean W.G. – Within groups,B.S. – Between sets, W.S. – Within set

*Significant at 0.05 level of confidence. (The table values required for significance at 0.05 level of confidence for 2 & 40 and 2 & 39 are 3.20and 3.21 respectively)

The table I shows that the obtained 'F' ratio cognitive anxiety 0.74 and somatic anxiety 0.62 for pre-testmeans was less than the table value, 3.20 for df 2 and 40 required for significance at 0.05 level of confidence. The obtained 'F' ratio cognitive anxiety 24.32 and somatic anxiety 20.84 for post-test meanswas greater than the table value 3.20 for df 2 and 40 required for significance at 0.05 level of confidence.The obtained 'F'ratio of cognitive anxiety 22.53 and somatic anxiety 23.08 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 39 required for significance at 0.05 level of confidence. The results of the study indicated that there was a significant difference among the adjusted post-test means of yogic practice, physical exercises and control groups on cognitive anxiety and somaticanxiety.

Table 2: The scheffe's post hoc test for the difference between paired means of yogic practice, physical exercises and control groups on cognitive and somatic anxiety

Yogic practice group	Physical exercises group	Control group	MD	CI
Cognitive anxiety				
20-+.43	21.07	-	1.54*	1.21
20.23	-	23.47	4.00*	
-	21.07	23.47	2.3*	
Somatic anxiety				
13.53	13.89	-	1.26*	0.86
13.53	-	16.38	2.75*	
-	13.89	16.38	1.39*	

*Significant at 0.05 level of confidence

The table II shows that the mean difference values between yogic practices group, physical exercises group, yogic practice group, physical exercises group and control group are 1.54, 4.00 and 2.3 respectively, which are greater than the confidence interval value 1.21 at 0.05 level of confidence on cognitive anxiety and somatic anxiety is 1.26, 2.75 and 1.39 respectively, which are greater than the confidence interval value 0.86 at 0.05 level of confidence on somatic anxiety. The results of the study showed that the yogic practices group is better than physical exercise on cognitive and somatic anxiety among High School Girls.

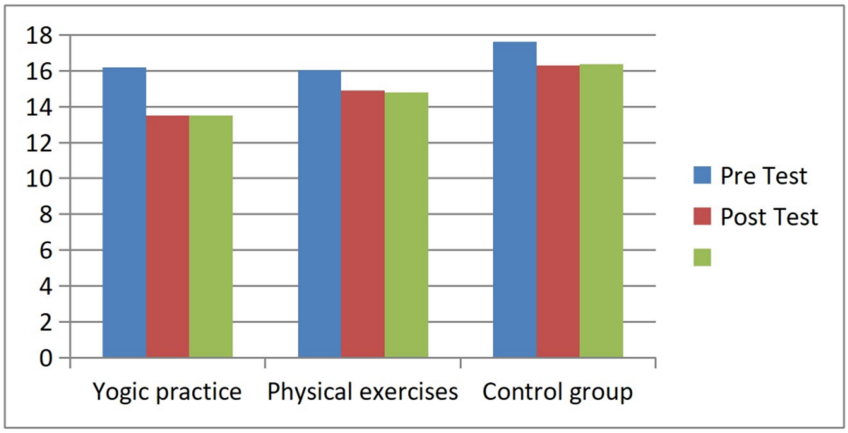

Fig 1: The pre, post and adjusted mean values of yogic practices, physical exercises and control groups on cognitive anxiety.

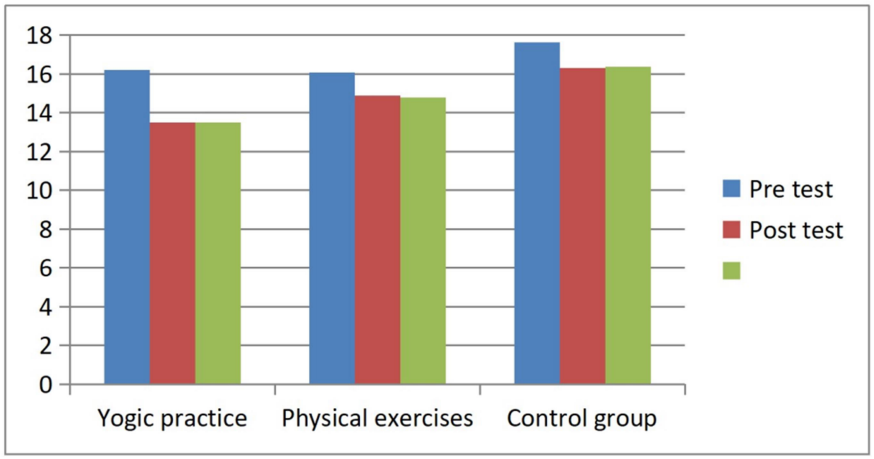

Fig 2: The pre, post and adjusted mean values of yogic practices, physical exercises and control groups on somatic anxiety.

Discussion on Findings

The results of the study indicated that the experimental group's namely yogic practices and physical exercises had a significant influence on cognitive and somatic anxiety among High School Girls. The results of the study showed that the yogic practice group is better than physical exercise on cognitive andsomatic anxiety among High School Girls.

Conclusions

From the analysis of the data, the following conclusions were drawn.

1 The yogic practices and physical exercises groups had shown significant changes in cognitive and somatic anxiety when compared to control group among High School Girls.

2 The yogic practices group was better than physical exercise on cognitive and somatic anxiety High School Girls

3 The control group had not shown significant change on cognitive and somatic anxiety High School Girls.

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Effect of Plyometric Training on Speed and Power among Teenage Boys

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Abstract

The aim of the research is to assess the improvement in speed and power among teenage boys on administrating a eight weeks plyometric training. Total twenty teenage boys were randomly allocated into two equal (n=10) groups. To achieve the purpose of this study a total of 20 teenage boys were selected based on the inclusion and exclusion criteria, and they were divided into Experimental group and Control group, Experimental group were engaged in plyometric training for 8 weeks with a frequency of three sessions per week. The speed was measured using 50-meter sprint test, the power assessed by standing broad jump test, The data were collected before and after the training were analyzed by using descriptive statistics, 't' test and the level of significant was fixed at 0.05 level. The results of the study clearly indicated that the speed and power improved following 8 weeks of plyometric training.

Key Words: Plyometric training, Speed, Power.

Introduction

Plyometric training is an effective mode of training as it enhances motor learning and neuromuscular efficiency by promoting the excitability, sensitivity, and reactivity of the neuromuscular system to increase the rate of force production (power), motor-unit recruitment, firing frequency (rate coding), and synchronization. Muscles produce the necessary force to change the direction of an object' s centre of mass. All movement patterns that occur during functional activities involve a series of repetitive stretch shortening cycles. The neuromuscular system must react quickly and efficiently following an eccentric muscle action to produce a concentric contraction and impart the necessary force (or acceleration) in the appropriate direction. Therefore, specific functional exercises that emphasize a rapid change in direction must be utilized to prepare each athlete for the functional demands of a specific activity. Plyometric training provides the opportunity to train specific movement patterns in a biomechanically correct manner at a more functionally appropriate speed. This provides functional strengthening of the muscle, tendon, and ligaments specific to the demands of everyday activities and sports. The ultimate goal of plyometric training is to improve the reaction time of the muscle action spectrum (eccentric deceleration, isometric stabilization, and concentric acceleration). The speed of muscular exertion is limited by neuromuscular coordination. This means that the body will move most effectively and efficiently within a range of speed that the nervous system has been programmed to allow. Plyometric training improves both neuromuscular efficiency and the range of speeds set by the central nervous system. Optimum reactive performance of any activity depends on the speed at which muscular forces can be generated

Purpose of the Study

The purpose of the study was to find out the effect of Plyometric training on speed and power among teenage boys.

Methodology

The objective of the study was to examine the effect of Plyometric training on speed and power among teenage boys. A consent form was given to all the subjects after the researcher explained in detail to the subjects about the training program, to achieve the purpose of the study a total of 20 teenage boys were selected based on the inclusion and exclusion criteria they were divided into experimental group and control group, pre-test measure of the control group and experimental group were assessed by using the 50-metre sprint test for speed, power was measured using the standing broad jump. The experimental group were engaged in Plyometric training for 8 weeks with a frequency of three sessions per week. Post-test measures for the speed was measured using the 50-metre sprint and power was measured using the standing broad jump. The data were collected before and after the training were analysed by using independence and dependence "t" test, the level of significance was fixed at 0.05 level.

Statistical Analysis

All data were described using means and standard deviations (±), and the data's normality was determined using the Kolmogorov-Smirnov and Shapiro Wilk tests. To ensure that there were no significant differences between groups at the baseline, a independence t test was used. To compare the pre and post-test measures of speed and power of the experimental and control group a dependent t test was used. To indicate statistical significance, a p value of 0.05 was used. SPSS for Window, version 23.0 was used to perform all statistical analyses.

Results of the Study

In the study, groups (i.e. Control: experimental) means and standard deviations were observed for power and speed in Table 1. Data's normality was determined using the Kolmogorov- Smirnov and Shapiro-Wilk test were observed no significant difference ($p>0.05$) in Table 2 which implies that test measures of Power and speed was following normality. Moreover, there were no significant difference ($p>0.05$) between the groups for power and speed at baseline was given in Table 3.

Table 1 Descriptive Statistics

Group	Variable		Mean	Std. Deviation
Experimental	Power	Pre-test	202.77	7.693
		Post-test	223.00	5.766
	Speed	Pre-test	8.29	0.295
		Post-test	7.66	0.177
Control	Power	Pre-test	205.27	6.958
		Post-test	209.54	8.583
	Speed	Pre-test	8.45	0.264
		Post-test	8.46	0.334

Table II: Normality Test Calculation

Variable	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Power	0.103	20	0.200	0.977	20	0.892
Speed	0.125	20	0.200	0.949	20	0.349

Table III: Independent t Test

Variable	Group	Levene's Test for Equality of Variances		t	Sig(2-tailed)	95% Confidence Interval of the Difference	
		F	Sig			Lower	Upper
Power	Experimental Control	0.230	0.631	-o.333	0.743	-8.041	5.841
Speed	Experimental Control	0.084	0.776	-1.021	0.321	-0.394	0.136

Table IV: The statistical analysis used to determine the effects of training on Speed and Power was presented in table showing dependent "t" test, of the teenage boys

Group	Variable	Mean Difference	Std. Deviation	Std Error Mean	t	Sig	95% Confidence Interval of the Difference	
							Lower	Upper
Experimental Pre and Post test	Power	-19.60000	4.57530	1.44684	-13.547	.000	-22.87297	-16.32703
	Speed	.63700	.17926	.05669	11.237	.000	.50876	.76524
Control Pre and Post test	Power	-2.70000	3.12872	.98939	-2.729	.063	-4.93815	-.46185
	Speed	-.06300	.06717	.02124	-2.966	.076	-.11105	-.01495

The obtained "t" value of 13.547 and 11.237 of power and speed for experimental group shows that there was a significant difference ($p<0.05$) in the pre-test and post-test due to Plyometric training. Moreover for the control group the obtained t value 2.729 and 2.966 of power and speed shows that there was no significant difference between the pre-test and post-test which exhibited that no significant improvement on power and speed in the control group.

Discussion

In this study finding showed that when Plyometric training is given over the course of eight weeks, there was a significant improvement in the component of Speed and Power

Conclusion

Present study revealed significant improvement in teenage boys in terms of speed and power domains after practising the Plyometric training. It is recommended that schools should administrated the plyometric training session among teenage boys for better performance in sports.

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Effect of Resistance Training On Fat Free Mass and Percentage of Body Fat among Trained Athletes

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Abstract

The objective of the study was to examine effect of resistance training on fat free mass and percentage of body fat among trained athletes. To achieve the purpose of the study a total of 20 men athletes were selected based on the inclusion and exclusion criteria, and they were divided into Experimental Group and Control Group, Experimental group were engaged in resistance training for 8 weeks with a frequency of three sessions per week. The fat free mass and percentage of body fat was measured using InBody270 machine. The data were collected before and after the training were analysed by using independence and dependence "t" test, the level of significance was fixed at 0.05 level. The results of the clearly indicated that fat free mass was increased and percentage of body fat was decreased after eight week of training intervention. It was concluded that resistance training is the best method of training to increase fat free mass and decreasing percentage of body fat among athletes.

Key Words: Muscle Hypertrophy

Introduction

Effective training programs involve the coordination of many variables in a systematic fashion that enables the body to adapt and performance level to improve. Resistance training is also referred to as *weight training* or *strength training* and can be done with measured weights, body weight, or other resistive equipment. Resistance exercises stress the body's musculoskeletal system, which enlarges muscle fibers and improves neural control of muscle function, resulting in greater muscular strength and endurance. Resistance training improves muscle strength and tone to protect joints from injury helps maintain flexibility and balance, Resistance training is a training modality that holds many potential benefits for both healthy and diseased populations. Resistance training is a modality of training that "requires the body's musculature to move against an opposing force". This opposing force can be provided by a resistance training equipment or one's own bodyweight. In a published guideline for exercise prescription, the American College of Sports Medicine (ACSM) 2014 encourages the inclusion of resistance training in a weekly exercise program for its many health benefits such as improvements in body composition, blood pressure, blood lipid profile, glucose tolerance, insulin sensitivity and bone mass.

Regular resistance training with an adequate *load,* or amount of weight lifted, will result in an increase in muscle strength. Although men tend to realize greater gains in muscle size due to higher testosterone levels, women can often have a larger capacity to improve strength (Hubal, et al, 2005). The amount of lean muscle tissue will increase, the amount of fat tissue will decrease, and thus the ratio of lean-to fat will improve. Research has demonstrated that such higher lean-to-fat ratios improve your overall health profile and reduce the risk of heart attack, stroke, and death from cardiovascular diseases (Calling, et al, 2006). More muscle means a faster metabolic

rate, because pound for pound, muscle tissue expends more energy than fat tissue. With more total calories being expended during the day, weight control becomes easier and more effective. The most successful weight maintainers (those who lose weight and keep it off for long periods of time) incorporate some type of resistance training into their overall fitness programs (Marks, et al, 1995).

Muscular conditioning is the process in which muscles, bones, cartilage and connective tissues (ligaments and tendons) are conditioned to be able to absorb and produce force. Conditioning training will increase the density of bone (Conroy *et al*., 1992), increase the strength of connective tissue (ligaments and tendons) (Suominen and Heikkinen, 1975) and increase the blood supply to muscle through improved vascularization increase in the number of veins, arteries and capillaries supplying muscle. The combination of these adaptations reduces the likelihood of injury.

Purpose of the study

The Purpose of the study was to find out the effect of resistance training on fat free mass and percentage of body fat among trained athletes.

Methodology

The objective of the study was to examine the effect of resistance training on fat free mass and percentage of body fat among male athletes. A consent form was given to all the subjects after the researcher explained in detail to the subjects about the training program, to achieve the purpose of the study a total of 20 men athletes were selected based on the inclusion and exclusion criteria they were divided into Experimental Group and Control Group, Pre-test measure of the control group and experimental group were assessed by using the InBody270 the subject's fat free mass and percentage of body fat was assessed. The experimental group were engaged in resistance training for 8 weeks with a frequency of three sessions per week, intensity was fixed at 70% of 1RM. Post training the fat free mass and percentage of body fat was measured using InBody270 machine. The data were collected before and after the training were analysed by using independence and dependence "t" test, the level of significance was fixed at 0.05 level.

Results of the Study

The statistical analysis used to determine the effects of Resistance Training on fat free mass was presented in table I showing the Paired 't' Test, Mean, Standard Deviation of the athletes.

Table I: Descriptive Statistics

Group	Variable		Mean	Std. Deviation	Std. Error Mean
Experimental	Fat free mass	Pre-test	46.350	4.699	1.485
		Post-test	54.690	4.138	1.308
	Fat mass	Pre-test	15.050	2.097	.6632
		Post-test	10.340	.8871	.2805
Control	Fat free mass	Pre-test	48.800	4.432	1.401
		Post-test	49.030	4.220	1.334
	Fat mass	Pre-test	12.170	2.490	.7874
		Post-test	12.610	2.218	.7015

Table-II: Showing‘t’ ratio on Pre-test & Post-test of Experimental group & control group on Fat free mass & Fat mass

Group	Physiological Variable	Mean Difference	Std. Deviation	Std Error Mean	t	Sig	95% Confidence Interval of the Difference	
							Lower	Upper
Experimental Pre & post test	Fat free mass	8.34	2.11	.668	12.46*	.000	-9.85	-6.82
	Fat mass	4.71	1.47	.467	10.07*	.000	3.65	5.76
Control Pre & post test	Fat free mass	-.230	.774	.244	-.939	.372	-.784	.324
	Fat mass	-.290	.831	.263	-1.102	.299	-.885	.305

*Significant at 0.05 level

The obtained “t” value of 12.46 and 10.07 of Fat free mass and Fat mass for experimental group shows that there was a significant difference ($p<0.05$) in the pre-test and post-test due to Resistance training. Moreover, for the control group the obtained t value .939 and 1.102 of Fat free mass and Fat mass shows that there was no significant difference between the pre-test and post-test which exhibited that no significant improvement on Fat free mass and Fat mass in the control group.

Table-III: Independent “t” test Showing Scores of Experimental & Control group on Fat free mass and fat mass

Variable	Levene's Test for Equality of Variances		t	Sig(2-tailed)	95% Confidence Interval of the Difference	
	F	Sig			Lower	Upper
Experimental & control Fat free mass	4.362	.051	-.300	.768	-6.081	-4.056
Experimental & control Fat mass	5.559	.030	-8.543	.000	-6.703	0.136

To ensure that there were no significant differences between groups at the baseline, an independence t test was used, Moreover, there were no significant difference ($p>0.05$) between the groups for Fat free mass and Fat mass at baseline was given

Discussion on Finding

The study's findings showed that when resistance training was given over the course of eight weeks, there was a significant improvement in the growth of fat-free mass and the loss of fat mass. The results also showed a significant transformation in fat free mass and significant alteration in percentage of body fat between the control and experimental groups.

Conclusion

It was concluded that resistant training produced significant impact on fat-free mass and percentage of body fat. The results also showed eight-week resistance training intervention produced significant conversion on fat free mass and significant alteration on percentage of body fat between the control and experimental groups.

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Effects of Interval Training on Speed among College Football Players

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Abstract:

In this modern scientific era, sportsmen are trained utilizing incredibly advanced methods to improve their performance in the relevant sport. They are being introduced to training and fitness regimens that have been successful in helping people reach high standards. The purpose of this study was to examine the effects of interval training on speed and Agility performance among college football players. To achieve the purpose of the study, sixty men football players were randomly selected from different colleges from Adoni, Kurnool dist.AP.The selected subject were assigned into two groups of ten each, such as experimental and control group. Group I underwent interval training for three days per week for six weeksrespectively and Group II acted as control group who did not undergo any special training programme apart from their regular physical activity. The following variables namely speed was selected as criterion variables. All the subjects of groups groups were tested on selecteddependent variables namely speed by using speed 50 yard dash before and after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The Scheffe's test was applied as post hoc test to find out the paired mean difference among the group. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study showed that there was a significant improvement in interval training group on speed and Agility when compared with control group. Keywords: Interval Training and Speed

Introduction

Sports is a unique activity that infuses the best qualities in our human being. A sports field is considered a laboratory where sports activities groom the individuals physically, mentally and morally with the important values of life to face the world confidently. The values imbibed elicit the best Character, behavior and action of an individual which bring happiness to the individual, the family, the organization and the society. The 'association football' which is more commonly known as only 'football' which is also known as 'Soccer' is one of the most popular games in the world. If we see the etymology of the word football, it is widely assumed that the word "football" (or "foot ball") references the action of the foot kicking a ball. There is a alternative explanation, which is that football originally referred to a variety of games in medieval Europe, which were played on foot. There are a number of references to traditional, ancient, or prehistoric ball games, played by indigenous peoples in many different parts of the world. The Ancient Greeks and Romans are known to have played many ball games, some of which involved the use of the feet. Various forms of "football" can be identified in history, often as popular peasant games.

Methods

To achieve the purpose of the study, sixty men football players were randomly selected from different colleges from Adoni, Kurnool dist.AP.The selected subject were assigned into two groups of thirty each, such as

experimental and control group. Group I underwent interval training for three days per week for six weeks respectively and Group II acted as control group who did not undergo any special training programme apart from their regular physical activity. The following variable namely speed was selected as criterion variables. All the subjects of groups were tested on selected dependent variables namely speed by using speed 50 yard dash before and after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The Scheffe's test was applied as post hoc test to find out the paired mean difference among the group. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate.

Results on Speed

The initial and final means on Interval Training group and control group on Speed among Football players and the obtained results on Analysis of Covariance (ANCOVA) has been presented in Table III.

Table III: Computation of Analysis of Covariance on Speed

Test measures	Group		Sourcesof variation	Sum of Squares (S.S.)	d.f.	Mean squares	Variance ratio(F)
	Experimental	Control					
Pre TestMean	7.10	7.06	Between batches	0.05	1	0.05	1.84
			Within batches	3.18	118	0.03	
Post TestMean	6.99	7.08	Between batches	0.24	1	0.24	11.72*
			Within batches	2.46	118	0.02	
Adjusted Post TestMean	6.98	7.10	Between batches	0.44	1	0.44	86.73
			Within batches	0.59	117	0.01	
Mean Diff	-0.11	0.02					

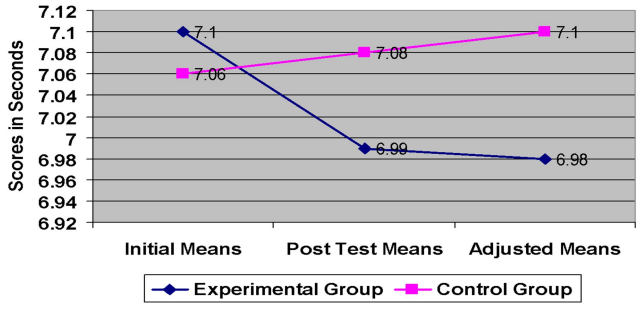
Table F-ratio at 0.05 level of significance for 1 and 58 (df) =2.37, 1 and 57(df) =2.37.

* Significant

The pre test mean on experimental group was 7.10, and control group was 7.06 and the obtained F value was 1.84, which was less than the required F value of 2.37 to be significant. Hence, it was not significant and the groups were equal at initial stage. Taking into consideration the initial and final mean values adjusted post test means were calculated and the obtained F value was greater than the required F value to be significant 2.37 and hence, there was significant difference.

Thus, it was proved that experimental group gained mean difference on, Speed -0.11 was due to Interval Training given to Football players, and the difference was found to be significant at 0.05 level. The initial, post and adjusted means values of experimental and control group on Speed is presented in Figure 1 for better understanding of the results of this study.

Figure 1: Line Graph Showing Initial, Final and Adjusted Means on Speed of Experimental andControl Groups



Discussions

The results presented in Table III proved that the Speed has not been significantly improved among control group as they do not underwent Interval Training . However, the twelve weeks Interval Training given to the experimental group significantly improved Speed among Football players. The statistical mean difference between initial test and final test of experimental group stood at -0.11 and control group stood at 0.02. The adjusted mean taking into consideration of initial and final means on Speed among experimental group was 6.98 and control group was 7.10 and showed favorable effects on Interval Training group than control group. And the differences, statistically treated using ANCOVA, were found to be important at 0.05 level as the acquire F value of 86.73 was greater than the required tableF value of 2.37 to be notable at 0.05 level.

Thus, it was proved that Interval Training was significantly better than control group in favorably influencing Speed of the Football players.

Conclusions

Within the limitations and delimitations of the study, the following conclusions was drawn: It was concluded that 12 week Interval Training protocols experimented in this research significantly improved physical fitness variable, speed of the Football players compared to control group.

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The Effect of Yogasana on Hb Factor

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Abstract:

The purpose of this study was to find out the effect of "Yogasana" on selected psychological factors such as anxiety. To achieve this purpose, 80 students studying in the Govt Degree college Janagon were randomly selected as subjects. They were divided into two equal groups; group 1 underwent Yogasana training for 24 weeks and group 2 acted as control group; that did not undergo any special training program apart from their regular program. All subjects of both groups were tested on selected dependent variables for a period of 6 months before and immediately after the training program. The analysis of covariance was used to analyze the significant difference, if any among the group. „T- Test for Equality of Means? and „Levene?s Test for Equality of Variances? was carried out on both the group. The results of this study showed that there was a significant difference between Yogasana group subjects and control group subjects for selected variables such as anxiety. And also it was found that there was a significant improvement on selected criterion variables due to Yogasana.

Key Word: Yogasana, Selected Psychology factor & Students.

Introduction:

Yoga has a complete message for humanity. It has a message for the human mind and it has also message for the human soul with intelligence and capable youth came fourth carry this message to every individual not only in India, but also in every part of the word. Yogasana are simple action for keeping the internal and external part of the body in good health. No activity can be performed well so long as the internal and external part of the body is not in the good health. The body and mind are closely interred related.

Objective of the Study:

The objective of the study was to know the effect of Yogasana on some selected psychological factor.

Methodology:

The purpose of the study was to find out the effect of the Yogasana on selected psychological factor such as anxiety. To achieve this purpose of the study 80 student Studying in Govt Degree College were selected on the basic of random sampling method. They were divided in two equal groups. Each group consisted of the 40 subject. Group I underwent Yogasana per week for 24 weeks. Group II acted as control that did not undergo any special training program apart from their regular program me. The following variable namely anxiety criterion variables all the subject of two groups were tested on selected dependent variable at prior to immediately after training program. The analysis of covariance was used to analyses significant difference, if any among the group. The 0.05 level of

confidence was fixed as the level of significance to test the „F? ratio obtained by the analysis of covariance, which was considerate as an appropriate.

Statistical Analysis of the Data:

Anxiety:

The analysis of covariance on Anxiety of the pre and post test score of Yogasana group and control have been analyzed and presented Table I

Table No. I: Analysis of Covariance of the Data on Anxiety of Pre and Post Test Scores of Yogasana and control groups

Test	Yogasana Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F Ratio
Pre Test							
Mean	18.2	17.9	Between	0.01	1	0.01	0.02
S.D	0.21	0.24	Within	11.51	28	0.41	
Post Test							
Mean	25.7	18.2	Between	119.64	1	119.64	291.80
S.D.	0.13	0.22	Within	11.41	28	0.41	
Adjusted Post Test							
Mean	24.9	18.1	Between	119.67	1	119.67	221.61
			Within	14.68	27	0.54	

* Significant at 0.05 level of confidence

(The table value required for significance at .05 level of confidence with df 1 and 28, 1 and 27 were 4.20 and 4.215 respectively). The table I show that the adjusted post –test mean values of Yogasana group and control group are 25.7 and 18.2 respectively. The obtained "F" ratio of 37.48 for adjusted post-test means is greater than the required table value of 4.215 for df 1 and 27 required for significance at .05 level of confidence on flexibility

The results of the study indicated that there was a significant difference between the adjusted post-test means of Yogasana group and control group on Anxiety.

Conclusion:

On the basis of the analysis following conclusion drawn: There was a significant difference between Yogasana group and control group on selected criterion variables such as long term memory and anxiety.

There was a significant improvement on selected criterion variable namely anxiety due to Yogasana.

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Sociological factors affecting women participation in sports.

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Abstract:

Sports are a crucial part of a student's growth and development. They help in the development of mental health and physical health of the body. In addition to that then helps on improving skills, experience and confidence that are helpful for developing their personality. Sports are a very different aspect from general social life and academics. It knows no boundary between Caste, Religion or Sex. It is a field in which the talent of a person matters irrelevant of any other factor. However due to the physical limitations that women have put them off the radar in Sports for a long time. But in this ever changing world came a time when the women overcame all the struggles they had been facing from the long past and shone brightly in the field of sports.

Key words: Sports, growth, women, mental and physical, skill.

Introduction:

Women's Participation in Sports:

Women are the back bone of not only a family but also the entire society. They are the great achieverswho play a major role in empowering society, but women are underestimated and their capabilities are undermined in comparison to men. Women are humiliated in different domains of profession and are not allowed to perceive their dreams and careers. Several women in sports in India have tried to break the gender bias and tried to made free from social discrimination and establishing a promising career for themselves.

Barriers for female participation in sportsin ancientdays :

Lack of opportunity for girls who wish to becomea elite athletes. The shyness of the girls in wearing sporting uniform and they were not allowed to play the games and sports equal to boys by their parents Many years ago the girls were not having confidence due to slow learning of skills and low number of coaches or unwillingness of playing games.

Women are discriminated againstinsporting events :

Women's and girls get fewer athletic opportunities. There is a lack of a back-up and support structure for sportswomen and for girls who show potential in their sports. There are very less viewers for women sports. In view of less viewershipthe sports media has less inclination to put time and effort into converting it. If there is a every girl child and boy child in a house, the parents won't allow the girl to play and to travel different places.

History of women in sports in India :

The history of women's sports can be dated back in 19th century as upper-class women were actively involved in playing games like horseriding, archery, skying, tennis, golf and skating etc.

Women participated in modern Olympics games for the first time during the second edition of Olympics in 1900 and women could only participate in the sports events that were considered as "Feminine Sports" and also known as women's sports events. The Olympic games were dominated by men who considered women as vulnerable beings and not suitable for all the games. Only 12 women participated in the second Olympic games out of 1066 athletes from 19 countries. Sports are the universally shared human culture that has changed the mind set of people over time. Later on women were participated in Olympics and won many medals.

These are some of the famous women sports players of India.

Sl.No.	Name of famous female sports player in India	Sports
1	P.T.Usha	Athletics
2	ThePhogatSisters	Wrestling
3	DeepikaKumari	Archery
4	SaniaMirza	Tennis
5	PV.Sindhu	Badminton
6	Mary Kom	Boxing
7	Rani Rampal	Hockey
8	DipaKarmakar	Gymnastics
9	MithaliRaj	Cricket
10	Anju Bobby George	Athletics
11	SakshiMalik	Wrestling
12	Hima Das	Athletics
13	Dutee Chand	Athletics
14	KarnamMalleshwari	Weight Lifting
15	BulaChowdhury	Swimming
16	AkulaSreeja	Table Tennis

Golden Girl of Indian Sports:

PT Usha she won 4 Asian gold medals and 7 Silver medals. She often called the "Queen of Indian track and field". On 6th July, 2022, She was nominated to RajyaSabha by former President Ram NathKovind and she was elected as first women IOA president of Indian Olympic Association. It has been proven that when girls and women have access to team support, they are able to cultivate critical skills confidence, leadership and problem solving.

Challenges faced by women in Sports in India:

Gender equality is one of the major concern of Indian society and it is now being looked after by several authorities and women as well. A survey says only 20% of women participated in sports compared to 43% of men women are made to face the consequences of buoyant sexism and they are judged in all aspects of etc. women have now excelled and endorsed in their lives. The Sports industry has seen an upsurge in number of women athletes. The first and foremost challenge faced by women in sports is the dip in their pay scale as women athletes are paid either less or half what is paid to the male counter parts. Women are being discriminated against based on their gender. The low involvement of women in sports is not due to lack of interest it is due to discrimination and many other problems that women have to contend therefore it is thought to investigate social cultural factors influencing the female participation in sports.

Sociogical factors

Parents:

The role of parents is the major concern in preventing girls from participating in sports.

1. Parents think about the safety of girls
2. Parents feel that sending girls to sports will inculcate bad habits and bring bad name to their personal life.
3. Parents do not dare to send girls to sports grounds against their customs and manners.
4. Many parents follow age old practice and are barbaric and do not know the preference of women and confine them to the home without permitting them to get in to the mainstream of life.
5. A major reason for not sending their children to sports is that they are horrified by some of the events happening in society.
6. Non-availability of sports grounds.
7. Lack of budget.
8. Lack of knowledge about sports.
9. Lack of proper coaches and equipment and facilities is a big reason.
10. A major reason for not sending girls to sports is that parents are not aware of the benefits of sports.

Culture:

1. India has a traditional family system. Thus women lose their personal freedom as the house holder in the family takes decision.
2. The practice in some areas are such that women are kept away from sports.
3. Sports culture in those areas is also not flourishing due to lack of promoters of sports and non-performance of them.
4. People in some regions strongly believe in their doctrines.
5. Lack of transportation.

Religion:

Some religious and cultures have laws or expectations which make it more difficult to participate in sport. In some cultures, clothing requirement can restrict women involvement in physical activity. For instance in Islam women have to keep their bodies covered up and also negative experience or acts of racism may be reason for certain minorities to avoid participating in specific sports.

Gender:

1. In any sports men are given more preference than women as they think that women is physically weak than men.
2. There is not just inequality in participation and opportunity, but also with pay women make less money compared to men.
3. This gender inequality leads to the discouragement to the women to participate in sports.
4. Many men feel that women are not capable as much as them.
5. The gender inequality starts from the family itself parents think boys can excell in sports than girls.
6. The inherent masculine nature of men often makes gender based discrimination a common feature in it. Women participation in sports was restricted for a long time and even today women face multiple barriers in participation.
7. Because of some harassments on sportswomen also leads to discouragement to the women to participate in sports.

Peergroup:

Peer group influence the participation by the girls in sport and games.

1. Girls are taunted by their peers when they go to the sports fields.
2. Those in this peer group give bad publicity to girls playing on the sports fields.
3. These groups of peers who see that girls are being coached on the playing field without any difference between boys and girls have a bad impression of themselves and misrepresent the same to the parents of girls.
4. Sports are wrongly thought to make girls lose discipline.
5. Peer group feel that girls are harassed on sports grounds.

Changes that are taken place in recent years:

Many female athletes have occupied an esteemed place in society, by acquiring numerous roles other than being just a mother. Their hard work and passion to prove themselves has helped them to attain respect and they are finally acknowledged and appreciated. The society have started considering women as admirable, who inspires the rest of world to become the best perhaps. The phenomenal growth of women is a remarkable outcome of their dedication and desires.

Parental encouragement is significantly related to a child's attraction to and competence in playing sports. Parents who provide positive encouragement instill a greater sence of enjoyment ability and motivation to their child. Sports play major role in girls life and thus the development of women's sports in present century definitely is one of the most fascinating topic. It is necessary to find out the parental attitude towards female participation in physical activities , which may adversely affecting the participation of female's in physical activities. Despite of the facts them are parents who encourage their wards to name a few P.V.Ramana (Interntional volleyball player) and P.Gopichand (International badminton player). P.V.Ramana father ofP.V.Sindu. He encouraged his daughter by not sending to higher studies and encouraged her to play badminton today she become an International badminton player and bought two Olympic medals to India andP.Gopichandfather ofP.Gayatri, he also encouraged his daughter andshe become an International badminton player. By taking inspiration from such parents others should also encourage their wards to participation in games and sports.

Some cultural background alsoinfluence the physical activity they choose to pursue. In some cultures, families and community responsibilities take precedence area recreational activity. In India badminton mean we will remember Hyderabad, Wrestling mean Haryana, Hockey mean Punjab, Volleyball mean Kerala because many players are from these areas represented India in international tournament. Too much pressure to win could cause and female athlete to become extremely nerves, anxious or stressed which will in term affect motivation and performance. Girl children also isolated or a ostracized from their peers are restricted in their ability to develop social skills and self-confidence

Hence the researcher thought of putting forward some of the recommendationto ensure more participation from girls in sports and games.

Recommendations:

1. Government at all levels should create enabling environment for unfettered participation of women in sports.
2. Government should encourage women to participate in sports by providing scholarship and incentives to excel in sports competition.

3. The private organization and individuals in society should support government to improve and provide all sports facilities and equipment in schools, inter and degree colleges as to enable more participation in sports by women
4. Government should eliminate all socio-cultural biases against female participation is sporting activities.

Conclusion:

Gender equality prevents violence against women and girls participation in sports. Societies that value women and men as equal in all aspects of sports has the power to change lives of men or women. Participation of women in sports may become inspiring role models for future generations. Sports organizations need to work towards gender equity. Don't spread negativity and give proper education of sports and opportunities for women.

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Role of Tennis for Future Women in India

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Abstract

Tennis is one of the most popular sports for women's. It is one of the few sports in which women command fame and popularity that equal those of their male counterparts. In women tennis matches usually game played without more powerful and effect compare to men. Women play the game most of time from baseline and also serve with less power but things in this field getting improving as well as growing more and more popular since 1990s. Tennis a racquet sport always been one of the few individual sports that Indians have been good and produce good talent also they have equal contributions with their male players. Tennis player career were not easy in India because no sponsorship, no encouragement from the local government it is very difficult to move to the next level of training and traveling to tournaments. Parents were the only source of financial support. Players those who want to improve their game, they develop speed, agility, strength and coordination through exercise and workouts. However, the great players approach the game especially by mental attitude. In general when one play regularly with different players who are more experienced as well as participated in higher level competition it is easy to improve the skills and to develop the strategies in tennis. A vital component to become a professional tennis player is to attack and adapt the same strategies to our strengths. Physical fitness in tennis is very important both to prevent injuries as well as to increase the performance. Each player vary from their intensity and duration.

Women Tennis Association is the main organization works for the female tennis players, which was founded by Billie Jean King in 1973 on the principle of equal opportunity. Now the WTA is the global leader in women's Tennis professional sports. Players use the service of WTA and gain concrete skills to maximize their performance. During the tennis career and after that former players should access to a range of programs from financial planning and investing, gaining coaching certifications, networking and legends activities, discounted university education, leadership, and career coaching. Such Women player development programs are proven to keep female tennis players in the top of their game.
Key words : Tennis, Fitness, Performance, Strength, Tournament.

Introduction

Today sports and games are given more importance because the lifestyle leads to various problems and comes with a lot of deception. Sports are very important part of everyone's life it helps to create talent and hobbies so that people can help to bring professional goals. Sports relieving person physical and emotional stress which leads to healthy life. The need for sporting events is also used for promotional purposes where as various brands use sports as a platform for marketing and advertising their products.

Participating in various sports activities is important in ensuring that one can reap the benefits of it . There are many types of sports activities that one can ensure that they can lead a healthy and active life. Tennis it's a long

history, looking at in the mid19th century a British major and a Spanish merchant combined rackets and Pelotas games together and later started the first tennis club in 1847. While Wimbledon started in the year 1877 as a fundraiser, which is not exactly auspicious beginning later becomes one of the biggest tournaments in tennis. Today tennis a sport of grand stadiums, more sponsors, advanced equipment and technology and excellent coverage of television matches. The first ladies championship tournament was held in the year 1884. It was introduced and played in the Olympic sport in the year 1896 but no tournament was held till the next summer at the Olympic till 1896.

Tennis grown popularity among all the genders in the early 20th century. New tournaments were organized including the four grand slams. Women were wearing costume which are more like modern tennis clothes. Women's tennis really did not established 1960 but after the establishment of the women's tennis association in the 1970 after a years of women advocating for equal prize money, in 2007 Wimbledon became the last Grand Slam to equalize the price money. Speaking of women's Tennis in India Sania Mirza is the only player to be highly successful in doubles players like Rutuja Bhosale, Ankita Raina, Rishika Sunkara, Prema Bhambri are some of the players having a long way in competing with the best in the world. Today women in tennis have the opportunity to earn just as much as men. They are going to continue to be a part of professional tennis.

Features of women's tennis:

In women's tennis matches, the ball is usually played with less effect and games tend to play more from the baseline typically is generally less powerful when compare to men. The service is also less powerful. However, there has been a noted evolution in this field since the 1990s, women's tennis is improving and is growing more and more popular. The best female tennis players were started coming during the open era of tennis-from 1968 to the present. Sania Mirza is the single most influential sport person in women's tennis in India has got many laurels for India with her brilliant display of tennis along with Mahesh Bhupathi and Leander Paes. Sania has made her mark on the international circuit as one of India's most grand slam winning tennis player.

Controversy:

The world of women's tennis is sometimes described as "sexist". Over the years, women have been openly sexualized for outfits worn during matches. One of the biggest cases in women's tennis was regarding pro player, serena Williams, in 2018. Serena Williams lost to Naomi Osaka in the 2018 women's final- but post-match headlines ended up centering around controversy instead of Osaka's big win. Williams was fine for three code violations, including coaching, breaking her racket and the "verbal abuse" of chair umpire in French open In may 2018, she also received criticism for wearing a so-called "catsuit" bodysuit to the French open. The suit was designed to prevent blood clots since she had given birth a few months earlier. Williams continues to deny that there was a clear coaching violation or that she ever lost control of her emotions and that wants to express themselves. Women are always judged more harshly for reacting to situations with emotion or with frustrations and reprimanded for things that men would not be reprimanded for. This is also true in the world of tennis. There exists an undeniable double standard between the men and women in the tennis world. When women slam their rackets, or yell at umpires they are more likely to get docked points or games, whereas if a man does the same thing he's typically looked at simply "stressed out" and receives no repercussions. Players like cornet and Williams are not the only female players that have been punished for things that men would not be reprimanded for. Sania Mirza has voiced her opinion against domestic violence, sexual assaults, female feticide, and unequal pay on several occasions Islamic clerics issued a fatwa against her calling her skirts and t-shirts un-Islamic and corrupting this did not dishearten her, she continued to fight what she believed in, and her fan base kept growing. Incidents have happened to majority of female players around the world.

Gender Equality:

The prize money difference between male and female was more different in the 1970s, everyone like men tennis players, tennis promoters were making more money when compare to women tennis players. Women were financially back footed because of domination by men in the sport. Male players owned and promoted more tournaments on their owe because most of them were former tennis players. This provoked 9 of the top women tennis players to take stand for equality. Those women were called Original 9 women tennis players did not play any tournaments and want to create their own tennis tournament. The International Lawn Tennis Federation(ILTF) began to drop several women tennis players from the tournaments, In 1970 the ILTF sanctioned only 15 men tennis players were allowed to play the tournaments. ILTF women's grand prix circuit was conducting 19 tournaments which is all based in United States, later this grand prix circuit is called WTA tour.

Broadcast of Grand Slam Tournament:

In 1973 the US open tennis tournament became the first grand slam tournament to award the same prize money for woman as well as men followed by the Australian open would become the second grand slam offering equal prize money in 1985 although the tournament awarded men more money from 1996-2000 but returned equal prize money from 2001. The momentum that began in 1970s to 1980s the television contracts to broadcast tournaments allowed tennis to come into everyone's home. The sport became more popular as coverage spread taking tennis out of country and landed in many public arenas, you do not need ticket to see the spectacle of players represent for their counties around the global.

Growth milestones:

The WTA circuit continued to expand in the year 1980 over 250 women were playing professionally and 47 circuit all over the global events. These increased financial opportunities for developments not only for tennis, but across all women's sports. WTA pushed for equal prize money at both the French open and wimbledon grand slam events in 2007. Sania has achieved several major successes and has served as an inspiration to millions of young girls who aspire to play tennis. She was the first Indian women to enter the top 100 of the WTA singles rankings, to win a WTA singles tournament, to win the year ending WTA doubles(finals) and to win a slam . She also done exceptionally well for India at multi-nation competitions, winning many medals(including gold) in singles and doubles at the commonwealth games, Asian games, Afro-Asian games, she came up just short of bronze medal in the Rio Olympics, losing in the semi-finals.

Role of Woman Tennis Association (WTA):

The women's tennis association (WTA) is the principal organizing body of women's professionals tennis. It governs the WTA tour which is the worldwide professional tour for women and it was founded to create a better future for the women's tennis. The corporate headquarters is in st.petersburg, florida, European headquarters in London. The women's tennis association was founded in the year june 1973 by Billie Jean King. The WTA have more than 2500 women tennis players from nearly 100 countries all over the world competing with millions of prize money. In 1977 women's tennis was the first professional sport to include transgender women . The New York Supreme Court ruled justice in favour Ranee Richards a player who underwent reassignment surgery from male to female sex, Eligibility of transgender players is officially regulated in current WTA official rulebook. The ITF women's circuit organized several ranking tournaments by the International Tennis Federation each year with more funds as a prize money. In 2020 the name of the tournament was simplified to align the ATP system like WTA 1000, WTA 500 and WTA 250.

Conclusion:

The player's council is a group of members under the WTA board of directors consisting of eight selected players on the tour advocate player interest, handles grievance, changes in the tennis schedule and other concerns.

At the time when women's roles in society were regulated to the household, inviting female competitors onto the courts was an magical inclusion. In the following century some of the traditions established Wimbledon tournament is still the only major tennis event held on grass court whereas the spectators has grown significantly from 200 spectators in initial championship and nowadays it has been increased in thousands. In addition high profile sponsorships, broadcast viewing figures, setting page views, and increase stake in prize money. Wimbledon has consistently served as center stage for emerging titans in the world of women's tennis. Today women professional at tennis have opportunity to draw a large crowd when compared to past decade, they earn as money as their male tennis players.

Tennis become a sport with extraordinary women's come out of difficult obstacles we explore the sport significance whereas a few women who have achieved the path of greatness tennis superstar are Venus and Serena, Steffi Graf, Martina Hingis many more. These women not only excelled at the physical, they pushed the limits of the possible and also helped the sport into its modern form. They want to be strong women and they are going to be allowed to do that because of today in tennis there is no debate that woman are queens of the court. The equality has not yet been fully achieved, the game tennis comes closer than any other modern sport thanks to the extraordinary women who have been a part of this changes the final frontiers left to conquer it is clear that women in tennis have shown their unity in sport at the table and on the court when it comes to defend the future of sport. Today women in tennis earn more money and endorsements than any other female athletes.

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Influences and Role of Technology in the Sport of Kabaddi

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Abstract

The origin of the Kabaddi dates back to pre-historic times played in different forms. The first Known framework of the rules of Kabaddi as an indigenous sport of India was started in Maharashtra in the year 1921. The modern Kabaddi was played all over India and some parts of south Asia from1930. The core idea of the game is to score points by raiding into the opponent's court and touching as many as defence players possible without getting caught with a single breath. It is a rectangular in shape and is divided into two half's for two competing teams were referees who stand at the end lines to monitor and judge the ongoing match the decision taken by the referees are manual and may lead to conflicts. Accuracy in judging is very important and crucial in any sport or game any minor errors in umpiring may change from one favours to the another. This sport is a sensitive of touches which go undetected by human eye and also cause the major impact in the results of the game. In this case the technology can replace manual umpiring decisions and referral systems can be deployed. Introduction of new technology, Techniques and changes in rules has made the kabaddi more interesting and advantage to skilled players to defeat heavier players with better skills and techniques. A lot of the innovations and changes have found into the sport at large contribution which suited the younger generations more than the senior players. Kabaddi is not only about strength or power anymore it is played in terms of strategy, planning, and analysis. Teams having luxury analyst to utilize the players to know how one specific raider does a bonus or how the defender tackles which helps to use strategy against specific player. Now days technical staff have continues touch with coaches to update what changes to be made and strategy should be handled against the opponent team, which is communicated by the coaches to the players during the video analysis session how to work on it. A lot of innovations and changes have found the way into the sport of kabaddi. Now the old kabaddi is updated to modern and scientific to play for the young generation in upcoming days.

Keywords: Defence, Accuracy, Manual, Decisions, Technology

Introduction

The game kabaddi originated in Tamil Nadu 4000 years ago and played in Sanjeevani and Gemini in a combined forms. It is an Indigenous sport of India which was started in Maharashtra in the year 1921 whereas the amended of rules framed in the same year and applied during the all India Kabaddi tournament organized in 1923. Thereafter a committee was constituted in the year 1923, the game is basically a combative sport and modern kabaddi game was played all over India and some parts of south Asia from 1930. The kabaddi played basically with seven players on each side and played for a duration of 40 minutes with a 5 minutes break (20-05-20). The core idea of the game is to score points by raiding into the opponent's court by chanting Kabaddi, Kabaddi, Kabaddi and

touching as many defence players as possible without getting caught on a single breath. While the seven opponents make to catch the attacker this is the match of one against seven known as the game of struggle. Kabaddi received international exposure during the Berlin Olympics in 1936. The game was introduce in the Indian Olympic games at Calcutta in 1938. In 1950 the all India Kabaddi Federation came into existence and compiled standard rules. The Amateur Kabaddi Federation of India (AKFI) was founded in the year 1973. Kabaddi is quite popular in the Indian subcontinent and is the state sport of Tamil Nadu, Andhra Pradesh, Bihar, Haryana, Karnataka, Kerala, Maharashtra, Odisha, Punjab, Telangana and Uttar Pradesh.

Kabaddi Game of Body and Soul

The sport Kabaddi which once used to be the learning ground for young warriors to tune their skills in ancient India that brought communities together to celebrate youth leadership and friendship in South Asia. The game calls for pro activeness, presence of mind, team management, physical strength, crisis management, analysis, and understanding opponent's strategy. The game with agility, good lung capacity, muscular co-ordination, presence of mind and quick responses, hand touch, turning hand touch in Kabaddi are the few moves that a player in Kabaddi should master.

Transforming of the Game

The introduction of more techniques relatively easier for a player with more skill than weight to score points against better built opponents. Over the years the game pattern changed along with rules and the size of the play field. The pattern of Sanjeevani & Gemini in a combined form. It was the Hanuman Vyayam Prasarak Mandal, Amaravathi, Maharashtra took up the task of organizing and developing Kabaddi in a more systematic and scientific manner. During the years 1927 to 1952 Kabaddi was played in different parts of the country based on the rules framed by the various clubs and organizing committees. There were frequent disputes over the rules and regulations followed in various parts of the country. The All India Kabaddi Federation was formed in the year1952 which express purpose of laying down standard rules and regulations to be followed by affiliated provincial units all over the country. The game's pattern also changed over the years, along with the standardization of rules and regulations. Some of the major changes in the game's pattern include the introduction of the unproductive raid rule, timeout system, bonus line game, etc that did not change the basic structure of the game but all the same had a lot of game being for the benefit of the players.

The game got further recognition when the school games federation of India included it in the school games in the year1962. This body has taken up the responsibility of organizing state and national level competitions for school going children all over the country in various sports on a regular basis every year. The Amateur Kabaddi Federation of India the new body came into existence in the year 1972. This body was formed with a view to popularize the game in the neighbouring countries and organize regular national level men and women tournaments. Formation of this body included sub-junior and junior sections in national level tournaments on regular basis.

Kabaddi was included in the curriculum on regular diploma courses in coaching conducted by the National Institute of sports. The premier institute to develop sports in the country with effect from the year 1971. There after qualified coaches in Kabaddi are produced every year. The neighbouring countries Nepal and Bangladesh also send their coaches regularly, these qualified coaches are equipped to train players at different levels in a systematic manner with the support of sports science.

Technical Development of the game

Time out rule → Each team shall be allowed to take two time out of 30 seconds in each half. Time out called by the captain of the team with the permission of the referee. During the time out team shall not leave the ground, any violation is committed by the players, or coach a technical point shall be awarded to the opponent team.

Official time out → In the event of any injury to a player the referee shall call time out, It should not exceed not more than two minutes.

Tie Knock out → If there is a tie in the knock out match than both the teams should field 7 players in the court, team should play the game on baulk line cum bonus line and all bonus point rules shall be played. If the raider succeeds in crossing the baulk line cum bonus line he will get one point in case of raider puts out one or more antis he will addition to one point. The out or revival rule shall not be applicable, only when points scored. The side which raids first at the beginning of the match shall be allowed to raid first. Even after 5 raid if there is a tie, the game will be decided as per the golden raid rule.

Unproductive Raid → If in three consecutive raids by a side no points is scored by either side the opponent's will get a point. The idea behind the introduction of this rule was to make sure that the raider went all out to struggle and gain points in order to avoid the risk of giving away points to the opponent's side through three consecutive unproductive raids.

Technical Officials

Official's maximum age limit fixed is 58 years to officiate the matches, after attaining age 50 years the official has to undergo a fitness and performance test conducted by AKFI once in two years. It is mandatory for all the technical officials to process and carry the following items whenever the technical duties is assigned. The decision of the umpire on the field shall be final generally but in special circumstance the referee may give the decision in the best interest of the game and also if there is a disagreement between two umpires. The referee and the umpires shall have the power to warn, declare point against temporarily suspended or disqualify any player or team from the match who is committing any of the following violations or foul.

Hot Spot Technology

Kabaddi court is a rectangular in shape and is divided into 2 half. The referees who stand at the end lines to monitor and judge the ongoing match, sometimes the decisions taken by these referees are manual and may lead to conflicts. This is where technology can intervene and referral systems can be deployed. The placement of IR cameras and monitoring from the control room in the same court whereas the cameras are placed along four sides of the rectangular court facing each other in the opposite directions. They record the proceedings of the game in real time and shows the image acquisition processing and output unit of the hot spot system. The recordings from the IR cameras or infrared cameras have lenses, just like visible light cameras. But in this case the lens focuses on waves from infrared band onto an infrared sensor array. Thousands of sensors on the array convert the infrared energy into electrical signals, which are the converted into an image. The image processing unit, processes the acquired image through written instructions algorithms and the final image is displayed using output units such as monitors or printed onto paper for proof. The images are also recorded in the permanent memory or database for re-examination in case of foul play.

Role of Pro Kabaddi

The pro Kabaddi league was first held in 2014 its founder was Charu Sharma. Influenced by the popularity of the Kabaddi tournament at the 2006 Asian games which utilized an indoor version of the game played on a court.

The Indian Premier League as an influence on the overall formatting of the competition but if you package it works better. The PKL uses a franchise based model the league began with eight teams, each of them have to pay fees to join. There were doubts over whether the PKL would successful like other leagues, attempting to emulate the IPL's business model and success that unlike cricket. In Kabaddi few were well known players who are noted widely. The game is played in grassroots community settings, and could thus attract a wide variety of rural and metropolitan viewers for advertisers to target if the league gained significant traction. The inaugural season was seen by a total of 435 million viewers, placing it just behind the total season viewership of the 2014 Indian Premier League season, while the inaugural championship was seen by 86.4 million viewers. The PKL's broadcaster, subsequently announced in2015 that it would acquire a 74% stake in the league's parent company for the year 2017 season, the PKL added four new teams ,and changed its format to spilt the teams into two divisions known as Zones.

Conclusion

Accuracy in judging is very important and crucial in any sport or game. Any minor errors during judging or umpiring can cost huge damage to the game for a team. Kabaddi is one of the such sport were each point is very important and can change the game. In Kabaddi, were a touch point is involved, IR cameras can be deployed and hot spot technology can be utilized, so that slightest of the touches can be identified. PKL format of the competition and the schedule has managed to raise the profile of the game to a new level. The sky is the limit from increasing interest in schools and colleges across both urban and rural areas. One of the unintended benefits of the PKL is also the Increasing possibility of showcasing the sport for an Olympic entry in the years to come. An inclusion in the demonstrative schedule for a good short-term goal for the administrators of the sport. The backing of the Indian and Continental federations running Kabaddi both for league and as well as sport overall. Despite the immense success of the league, the sport remains a shallow pursuit limited to small sections of the country. Kabaddi presents transformational opportunity for the sport in terms of arousing interest and drawing more children to the sport. The key to capitalize this wave of interest is in building an system of facilities and personnel to identify and nurture talent across states. Considering the nature of the sport, it aligns well with the socio-economic background of the Indian population.

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Effect of Selected Asanas on Sports Performance during Menstrual Cycle Among Women Athletes

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Abstract:

Yogasanas are very helpful in balancing physical and mental obstacles. Practicing yogasana with perfection and with awareness gives good results. Women's body will undergo different hormonal changes during her menstrual cycle which has direct or indirect impact on their sporting performance. As a coach one must know how to handle women in deferent situations to get the best performance out of them despite their body changes. Selected asanas performed with awareness and correct breathing technique help in overcoming stress. In this study, selected asanas were given during various phases of their menstrual cycle to women between 16 to 21 years of age. The sample of the study are regular practitioners in various games and sports. Samples are trained in performing selected asanas specific to the phase they are in for 60 days along with their regular workouts. Their reaction time and agility tests were conducted during various phases of their menstrual cycle according to the individual cycles.

Keywords: Menstrual Cycle, Yogasana, Performance

Introduction:

"Yogah Chitta Vritti Nirodaha". Yoga originated in India and is an ancient practice in India. Yoga helps in physical and mental health. Regular practice of yoga helps in control of oneself. In ancient times, it was practiced by yogis however at later stage, it is introduced to all. There are several research studies performed on yoga and some of them inferred that practicing yoga helps women in various stages of their life. As women's body undergo various changes physically. One such change is menstruation.

The women get their first menstruation at the age of 12-14 years. Menstrual cycle has three phases namely Menstruation phase when the women get her periods. This phase is from 1 to 7 days. Second phase is Follicular phase which is from 8 to 19 days of which the ovulation occurs from 14 to 19 days. The third phase is the Luteal phase which is from 20 to 28 days. Estrogen and Progesterone fluctuate in the menstrual cycle in various phases. Estrogen increases in follicular phase and progesterone increases in luteal phase. Despite the changes in women's bodies, they participate in various sports and games at various levels. Some studies indicate that there is change in performance during various phases due to hormonal changes.

Practicing yoga regularly helps in maintaining hormonal balance which helps in maintaining the performance. Regular practice of Yoga, Asana, Pranayama and Meditation helps in maintaining physical and psychological health. All yoga asanas cannot be performed during menstruation. While practicing the right asanas in each phase will have a positive impact, practicing wrong asanas will have an impact on one's health.

Purpose of the Study:

It is to find out the effect of performing selected asanas on agility and reaction time during different phases of menstrual cycle

Delimitations:

- This study is limited to 16 to 21 years students
- Eumenorrheic female athletes from various games are considered for this study

Limitations:

- The study doesn't include people with PCOD, Thyroid and other health issues
- Non-sports students are not considered for this study
- The age group below 16 and above 21 are not considered
- Socio economic status is not considered
- Nutrition condition is not considered

Hypothesis:

- There will be no significant difference in agility and reaction time among women athletes post performing the selected asanas
- There will be significant increase in agility and reaction time among women athletes post performing the selected asanas

Review of literature:

Study 1: Association Between Physical Activity, Menstrual Cycle Characteristics, and Body Weight in Young South Indian Females

Author: Shabnam Omidvar, Fatemeh Nasiri Amiri, Mozhgan Firouzbakht, Afsaneh Bakhtiari, Khyrunnisa Begum

Variables Tested: Cycle length, Regular periods, Dysmenorrhea, Menstrual blood loss

Method used: Survey Method

Study Overview: Socio Economic Status, Weight, and Menstrual Cycle among the 1000 females aged from 11 to 28 years. Only 121 (12.1%) were exercising 3 or more times a week. Overweight and Obese were practicing fitness while others are sedentary. 74.2% of Higher SES - regular physical activity; 30.1% of Lower SES - regular physical activity. Physically active women had an evidently higher percentage of regularity in their Cycle

Conclusion: Women practicing Physical Activity has regular periods in comparison to others who are sedentary, Women with overweight and obese are practicing fitness while the others are not

Study 2: Understanding the effects of the menstrual cycle on training and performance in elite athletes: A preliminary study

Authors: GeorgiaStatham, Faculty of Health Sciences, University of Bristol, Bristol, United Kingdom

Variables Tested: Decision Making, Risk Taking

Method Used: Survey

Study Overview:

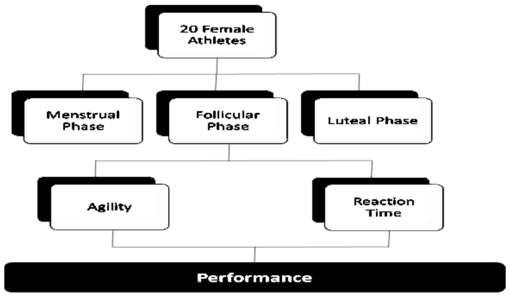
Physiological performance data was collected from 8 elite athletes for 7 months. The Cambridge Gambling Task (CGT) was used to test decision making during the early follicular phase and during the mid-luteal phase, 2 elite athletes, 2 Olympic level athletes, and 2 coaches participated in interviews. The study found that physiological performance was significantly better during the menses phase (MP) compared to the proliferative and secretory phases (PSP). Risk taking, error rates and response times were not affected. The qualitative interviews revealed that elite athletes and their coaches understand little of the menstrual cycle.

Conclusion:

The menstrual cycle can have a significant effect on an elite athlete's performance and this paper discusses how individuals can possibly improve aspects of physiological and psychological performance by understanding and monitoring their menstrual patterns.

Methodology:

Design of the study



Sample: This study has 20 samples. The samples are in the age group of 16 to 21 years and are active athletes. The samples are trained in Baddakonasana, Moorthasana, Gomukhasana and were asked to perform these asanas during menstruation phase, follicular phase, and luteal phase respectively along with the other routine exercise they perform for two menstrual cycles (i.e., 60 days).

Tools Used: Ruler, Marking cones, Stopwatch and Data capture sheet

Tests Conducted: For measuring Agility, Illinois test is performed and to measure reaction time, a Ruler Drop test is conducted.

Data Collection Procedure: Selected samples are trained in selected asanas. Collected the data pertaining to their menstruation cycle and have arrived at the probable date range for upcoming cycles and created a roster for two months. Have conducted tests for measuring Agility and Reaction Time in all the 3 phases for two menstrual cycles (i.e., 60 days) which has resulted in 120 rows of data for Agility and 120 rows of data for reaction time. Have conducted One Way ANOVA for Agility and Reaction time at significance level 0.05 to check the significance.

Data Analysis: The collected data is analyzed for Agility and Reaction time separately using One Way Anova with significance of 0.05.

Agility: The total sample size is N = 120 (test results of 6 different dates for 20 samples) for Agility. The total degrees of freedom are 120-1=119 and degrees of freedom between is 6-1=5 and degree of groups within is 119-5=114.

Table 1

Groups	*Count*	*Sum*	*Average*	*Variance*
M1 Phase 1	20	415.71	20.7855	0.636352
M1 Phase 2	20	415.8442	20.79221	0.741171
M1 Phase 3	20	425.1113	21.25556	0.965825
M2 Phase 1	20	418.0633	20.90317	0.563564
M2 Phase 2	20	429.6605	21.48303	1.03673
M2 Phase 3	20	413.5297	20.67649	0.75944

Table 2

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	10.00094	5	2.000187	2.551758	0.031507	2.293911
Within Groups	89.35855	114	0.783847			
Total	99.35949	119				

Since F-statistic (2.551) is greater than F critical value (2.293) and P value of 0.03 is < 0.05 the null hypothesis is rejected.

Reaction Time: The total sample size is N = 120 (test results of 6 different dates for 20 samples) for Agility. The total degrees of freedom are 120-1=119 and degrees of freedom between is 6-1=5 and degree of groups within is 119-5=114.

Table 3

Groups	*Count*	*Sum*	*Average*	*Variance*
M1 Phase 1	20	3.42559	0.171279	0.000291
M1 Phase 2	20	3.191428	0.159571	0.00077
M1 Phase 3	20	2.944267	0.147213	0.000785
M2 Phase 1	20	3.247124	0.162356	0.000742
M2 Phase 2	20	3.060206	0.15301	0.000621
M2 Phase 3	20	2.966717	0.148336	0.000794

Table 4

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.008519	5	0.001704	2.553749	0.031394	2.293911
Within Groups	0.07606	114	0.000667			
Total	0.084579	119				

Since F-statistic (2.553) is greater than F critical value (2.293) and P value of 0.031 is < 0.05 the null hypothesis is rejected.

Discussion:

The samples are given 3 asanas (one asana per phase) to be performed for two menstrual cycles (i.e., 60 days) in addition to the regular exercises they perform based on their event. The agility test and reaction time test were conducted in all the three phases of menstrual cycle based on their roster which is prepared based on their menstruation date for two menstrual cycles (i.e., 60 days) and the results are analyzed using One Way ANOVA. Minute increase in Agility and Reaction Time is observed among samples over two menstrual cycles (i.e., 60 days).

Conclusion:

Samples were given Asanas which help in women during their menstruation cycle. These asanas when performed in the respective phases of menstrual cycle have helped in minute increase in Agility and Reaction Time of the samples. The study was limited to 20 samples for two menstrual cycles (i.e., 60 days) only hence we need to work on larger samples with longer duration with additional variables to be able to assess the exact impact of Asanas on athletes' performance during the various phases of their menstrual cycle. This study is performed at the overall cycle level. However, comparison of phase to phase also will give us deeper insight into to the performance variation in each phase.

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A Survey on Awareness of Physical Literacy among Children (2yrs - 16 Yrs) During Covid-19 in Hyderabad District

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Abstract

The purpose of this study was to find out the awareness of Physical literacy among children (2yrs - 16yrs) during Covid-19 in Hyderabad district. Children should develop their confidence, motor skills knowledge at the right age as an integral part of their lifestyle. In this study, online survey questionnaire method was employed to perform the data analysis. Convenient sampling design was used in this study. The questionnaire consists of 13 questions and I have requested parents to fill the same and 59 responses were received. The target population of this study was children age group (2yrs - 16yrs) all over Hyderabad district. The obtained data were subjected to statistical treatment. The results proved that

- 81% of parents were aware of Physical Literacy and plays a role in wellbeing.
- 69% children knew the importance of Physical literacy and its impact on physical & mental health.
- 100% parents were opined and realised physical literacy is important.(40% knew this before pandemic,60% after pandemic)

We have analyzed the responses for various patterns to come up with conclusion. In pandemic, parents and children realized that Physical literacy is important in every individual's life.

Key words: Physical Literacy (PL), Covid-19, Hyderabad district.

Introduction:

Physical literacy is the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person. Based on our definition of physical literacy, motivation, confidence, physical competence, knowledge, and understanding could be said to be the most obvious individual level factors or targets for physical literacy interventions. However, such a statement would be overly simplistic in relation to the complex construct of physical literacy. Research suggests that there are other, important individual-level factors, such as education, physical training, previous experience, or personal beliefs. It is also likely that additional research in this area will continue to expand the list of important individual-level factors. One of the greatest fallacies of intervention research is the assumption that an associated factor is equivalent to an important intervention target. This is not necessarily the case. For example, limited motivation is considered to be an important barrier to physical literacy, which suggests that increasing motivation may be a key intervention target. If one accepts that physical literacy levels are currently suboptimal across the life

span, a significant investment will be needed to enhance physical literacy at a population level. To justify such effort and investment, future research is required to clearly define the benefits of increased physical literacy.

Materials and Methods:

We have prepared a close-end questionnaire which can be used to get the information from selected children. The questionnaire consists of 13 questions . Parents were requested to fill up the questionnaire. We have targeted to get 59 responses for which we had to connect with 150 children's from various places in Hyderabad District. We have analyzed the responses in various patterns to come up with solutions.

Tools Used

- Close-ended survey questionnaire.
- Micro soft excel for analyzing the data.

Enclosed is the questionnaire used for the survey

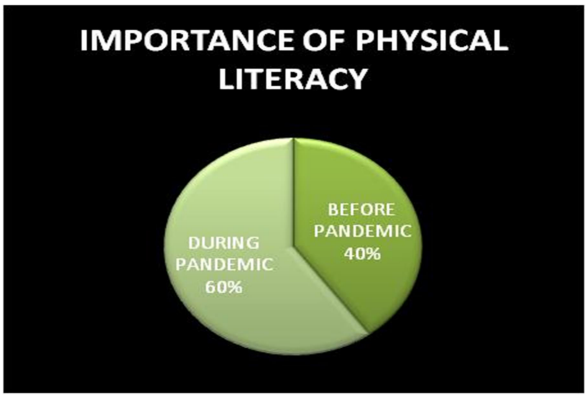
A SURVEY ON AWARENESS OF PHYSICAL LITERACY AMONG CHILDREN (2YRS - 16 YRS) DURING COVID-19 IN HYDERABAD DISTRICT			
NAME : **GENDER :** **AGE :** **CLASS :** **HEIGHT:** **WEIGHT :**			
S.No	**Questions**		
1	Do you want to answer few questions on awareness of Physical Literacy on your child ?		
2	Are you a Working Parent?		
3	Are you aware of Physical Literacy?		
4	Do you think Physical Literacy plays a role in their wellbeing?		
5	Does your child know the importance of Physical Literacy and its impact on their Physical and Mental health?		
6	What type of Physical Activity does your child perform? (please enter the name of the game they play here - it can be any game - Indoor or Outdoor)		
7	Duration of the Physical Activity per day? Select from the bullets below.		
8	Do you play along with your children?		
9	Does your children play with their Grand Parents?		
10	Is Physical Literacy awareness important for Children?		
11	If yes to the above question, when do they know about it (during pandemic or before pandemic?		
12	How does your child know about Physical Literacy?		
13	Do you observe the difference in their health and fitness when they perform Physical Activity?		

Results and Discussion:

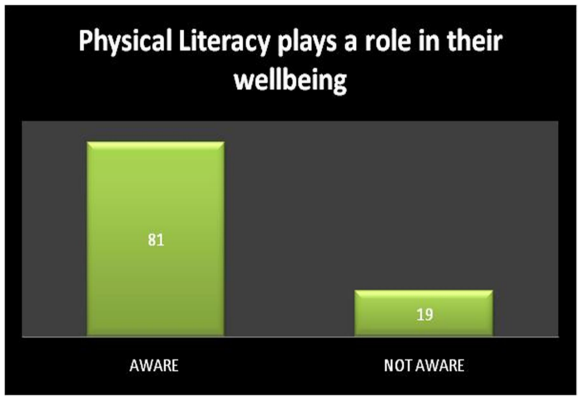
We have received a response from 59 children.

- 31 female kids have responded
- 28 male kids have responded
- children who responded are the age group of 2yrs - 16yrs.

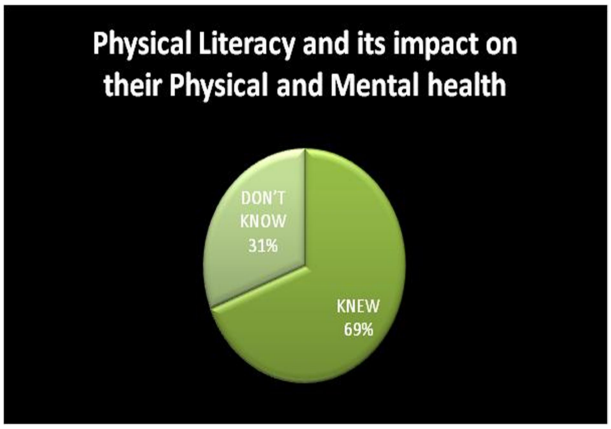
- Parents as well as children know importance of Physical literacy. Now-a-days , Physical literacy is playing a prominent role. 40% of children and parents knew before Pandemic and 60% of children knew during pandemic.



- 81% of parents and children were aware that physical literacy plays a prominent role in their wellbeing , 19% of people were not aware of this.



- 69% Parents and children knew impact of physical literacy on their physical and mental health.



Conclusion:

Based on received responses, it is concluded that many people among our samples are aware about Physical Literacy plays a role in their wellbeing. GET PHYSICAL find your balance BE LITERATE. Failure to develop physical literacy puts children at a great disadvantage when it comes to full engagement in physical activity and sport. Developing physical literacy in all children requires a combined effort from parents, guardians, teachers and sport coaches.

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Influence of Low Intensity Plyometrics Combined With Aerobic Dance Exercises on Vo2 Max among Interscholastic Volley Ball Players

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Abstract:

The determination of the training was to notice that the "influence of low intensity plyometrics combined with aerobic dance exercises on Vo2 Maxamong interscholastic volleyball players". To achieve the purpose of the study, the researcher has randomly selected thirty YMCA Sports School, Chennai as a subject and there age group was 11 to 14 years. The study was formulated as pre and post-test random group design in which thirty subjects were divided into two equal groups. The experimental group – 1 (n=15, LIP&ADE) undergone for low intensity plyometrics combined with aerobic dance exercises and group – 2 (n =15, CG) control group did not want any kind of training. The training program was adapted to independent variables and the Vo2 Max was selected as dependent variable and it was measured bysteep test, the performance of the subject was recorded in ml.kg-1.min-1. The intervention group was performed three alternative days in a week for twelve weeks. The collected pre and post data was critically analyzed with paired sample 't'- test. The level of confidence was fixed at 0.05 levels for all the cases in order to find out the significance. The result clearly proved that the low intensity plyometrics combined with aerobic dance exercisesproved greater enhancement on Vo2 max, whereas the control group didn't produced any significance. **Key Words:** Low intensity Plyometrics, Aerobic Dance Exercises, Vo2 Max and Paired sample t-test.

Introduction:

Plyometrics is another name for jumping training. "Plyos" are physical exercises that require muscles to exert maximum force in a short period of time in order to increase speed and strength (Chu D A, 1998).The purpose of the human body's cardio respiratory system is to provide a continuous flow of oxygen and nutrients to the working skeletal muscles while also removing metabolic waste products of cellular respiration during exercise (Mayer 2001). Maximal oxygen uptake (VO2 max) measures the capacity of the long-term human energy system. Achieving a high VO2max in volleyball players necessitates a high level of cardiovascular, respiratory, and neuromuscular functions. As a result, VO2 max is an important component in assessing volleyball players' and coaches' fitness levels; VO2 max changes with changes in training (Hickson RC, 1981)(Madsen K, 1993).

Aerobics and sports activities provide long-term benefits to individuals by improving not only physical variables and aerobic capacity, but also biochemical well-being. Aerobic dance exercise is one of the most popular forms of exercise in the world. Aerobic dance is currently a popular activity, performed by small groups of people of all ages, and is especially popular among middle-aged men and women. Music with a slow or fast rhythm aids in the control and pacing of specific body segments, allowing for an overall body workout. Aerobic dance, like other forms of aerobic exercise, has demonstrated physiological benefits of increased Maximal Aerobic Capacity when

performed at a target heart rate of 50% to 70% of the maximal heart rate (MHR) using the Karvonen Equation (VO2 Max) (K.P.Prashobhith, 2015).

Methodology

The determination of the training was to notice that the "influence of low intensity plyometrics combined with aerobic dance exercises on Vo2 Max among interscholastic volleyball players". To achieve the purpose of the study, the researcher has randomly selected thirty YMCA Sports School, Chennai as a subject and there age group was 11 to 14 years. The study was formulated as pre and post-test random group design in which thirty subjects were divided into two equal groups. The experimental group – 1 (n =15, LIP&ADE) undergone for low intensity plyometrics combined with aerobic dance exercises and group – 2 (n =15, CG) control group did not want any kind of training. The training program was adapted to independent variables and the Vo2 Max was selected as dependent variable and it was measured by steep test, the performance of the subject was recorded in ml.kg-1.min-1. The intervention group was performed three alternative days in a week for twelve weeks. The collected pre and post data was critically analyzed with paired sample 't'- test. The level of confidence was fixed at 0.05 levels for all the cases in order to find out the significance.

Table - I
Computation of "T" Ratio between the Pre and Post Tests On Vo_2max of Experimental and Control Group

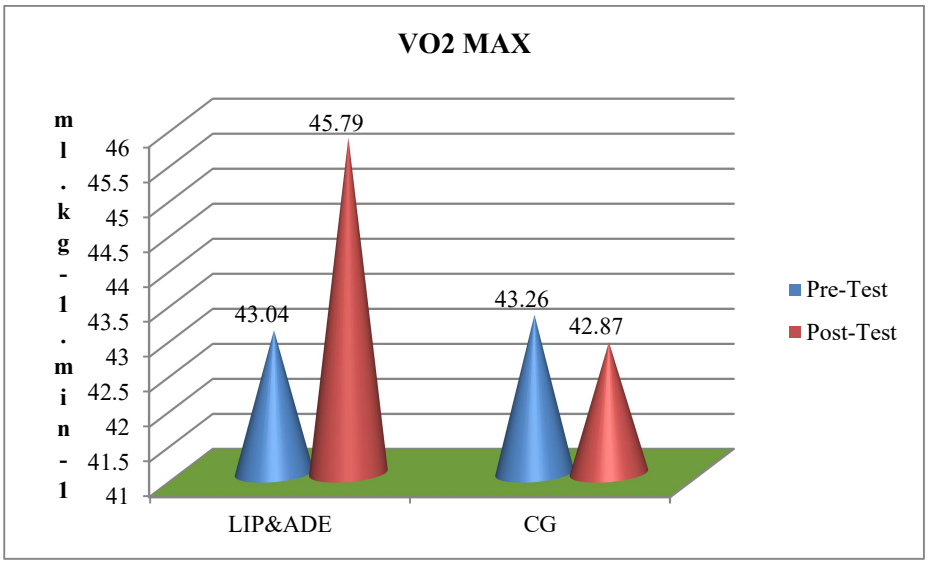
Group	Test	M	SD	σDM	DM	t-ratio
EXPERIMENTAL	**Pre**	43.04	0.79	0.32	2.75	**8.53***
	Post	45.79	1.70			
CONTROL	**Pre**	43.26	0.59	0.20	0.39	1.92
	Post	42.87	1.16			

*significance at 0.05 level

It observes from the table I that the experimental group mean value for pre-test was 43.04and post-test was 45.79. The standard deviation for the pre-test was 0.79 and post-test was 1.70. The standard error of the different between the means was 0.32. The mean difference for the pre-test and post-test was 2.75. It revealed that the obtained t-ratio 8.53* was greater than the required t-ratio of 2.14, hence there was a significant improvement on vo_2 max of experiment group at 0.05 level of confidence.

It may be seen that the control group mean value for pre-test was 43.26 and post-test was 42.87. The standard deviation for the pre-test was 0.59 and post-test was 1.16. The standard error of the different between the means was found out and value was 0.20. The mean difference for the pre-test and post-test was 0.39. It revealed that the obtained t-ratio 1.92, was lesser than the table value of 2.14, hence there was no significant improvement on vo_2 max of control group at 0.05 level of confidence.

Figure – I: Figure Showing the Mean Difference of Pre and Post Tests Scores on Vo2max of Experimental and Control Group



Discussion on Finding

The analysis of vo_2max data revealed that after the experimental period, the experimental group had significantly improved vo_2max when compared with its post -test. Here the obtained 't' ratio value was greater than the table 't' ratio value at 0.05 level of confidence, hence the experimental group had significant improvement whereas the control group showed insignificant improvement on vo_2max. So the improvement was due to the combined low intensity plyometrics and aerobic dance exercises.

The earlier trainings showed that the statistically important improvement on Vo2 max through the effect of the influence of plyometric exercises and aerobic dance exercises. According to the (Reddy, 2020)&(Dr.S.Saroja and Dr.R.Senthikumaran, 2018) and (Dr. K. Vishnuvardhan Reddy, 2022) and other were studied and proved that the plyometric and aerobic exercise were significantly improved the Vo2 Max. The current study is in collaboration with results of the earlier studies.

The twelve weeks of training interventions has produced significant improvement on Vo2 Max. The development of Vo2 Max of experimental group was discussed below.

The Low intensity plyometrics combined with aerobic dance exercises group from pre (43.04) to post (45.79) has significantly changed the pre to post results. The percentage of improvement on Vo2 Max of LIP &ADE was 6.39% respectively.

Discussion on Hypothesis

The hypothesis says that there would be a significant improvement in the vo2 max of interscholastic volleyball players due to low intensity plyometrics combined with aerobic dance exercises.

From the statistical findings it was found that there was a significant improvement in the vo2 max of interscholastic volleyball players due to low intensity plyometrics combined with aerobic dance exercises, when

comparing the pre and post-tests values of experimental group on vo_2max. But the control group showed insignificant improvement on the vo2 max, so the improvement was due to low intensity plyometrics combined with aerobic dance exercises. Hence the hypothesis was accepted.

Conclusion

Within the limitations imposed by the experimental conditions the vo2 max was significantly improved through low intensity plyometrics combined with aerobic dance exercises.

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Effect Of Own Body Exercises and Saq Training for the Development of Selected Performance Parameters among School Girls.

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Abstract:

The Present study has been done with the aim of investigating the effect of own body exercises and SAQ training for the development of selected performance parameters among school girls. In order to assess this, the researcher selected 90 students as subjects from Government High School, Bhoodhan Pochampally, Yadadri Bhuvanagiri Disrict, Telangana State. The subjects age group ranged from 11 to 14 years. The subjects were divided into two equal groups, namely experimental group and control group respectively. In which, the experimental group (n=45) underwent own body exercises and SAQ training for 12 weeks. Their training days and hours of every week were from Monday to Saturday between 4:00 PM to 5:00 PM And group 2 (n=45) act as a control group. Which do not participate in any special training. A pre-test was conducted before the commence of the training and final test data were collected after the twelve weeks of training. The findings of the study reveals that there is a significant difference in Speed and Agility of experimental group between pre test and post test. 12 weeks own body exercise and SAQ training program shows positive effects on performance parameters among school girls. And there is no significant effect in speed and agility of Control group. It is conclude that 12 weeks own body exercises and SAQ training program shows positive effects on performance parameters like Speed and Agility among school girls.

Key words: Own body exercises, Speed, agility and Quickness(SAQ) Training, Performance parameters.

Introduction:

Body weight Exercises are some of the most common and beneficial exercises that you can do. These exercises do not use free weights or any other type of machine or equipment. Rather, the person exercising uses his or her own body weight as the sole form of resistance for the workout. By including body weight exercises in your regular fitness routine, such as pull-ups, push-ups, crunches and lunges you can strengthen your body without needing a gym, outside tools or equipment of virtually any kind. Body weight training is exactly what it sounds like: exercise using your body weight. Although body weight training is enjoying a surge in popularity in these days, it's the oldest form of exercise. Most people have been fully equipped to do body weight training since the dawn of mankind, but those silly kettle bells and rowing machines didn't come along until much later. The most familiar body weight training exercise and arguably one of the most effective is the push-ups. Sure, you can add fancy hand positions or put a medicine ball under one hand to make it more challenging. When you get right down to it, though push-up is really just a conversation between you, the floor and gravity.

Speed- Agility- Quickness (SAQ) is a different kind of training method, which has intentions to maximize every individual potential in his hereditarily inherited abilities. Speed, agility and quickness are undoubtedly highly necessary in both team and individual sports. SAQ is a system of training aimed at the development of motor

abilities and the control of body movement through the development of the neuro-muscular system. It aims to improve the athlete's ability to perform explosive muti-directional movements by reprogramming the neuro muscular system to work effectively.

Purpose of the study:

The purpose of this investigation was to predict the effect of own body exercises and SAQ training for the development of Selected performance parameters among school girls.

Methodology:

The study was made to predict the effect of own body exercises and SAQ training for the development of selected performance parameters among school girls. In order to assess this, the researcher selected 90 students as subjects from Government High School, Bhoodhan Pochampally, Yadadri Bhuvanagiri Disrict, Telangana State. The subjects age group ranged from 11 to 14 years. The subjects were divided into two equal groups, namely experimental group and control group respectively. In which, the experimental group (n=45) underwent own body exercises and SAQ training for 12 weeks. Their training days and hours of every week were from Monday to Saturday between 4:00 PM to 5:00 PM And group 2 (n=45) act as a control group. Which do not participate in any special training. A pre-test was conducted before the commence of the training and final test data were collected after the twelve weeks of training. The procured data were then statistically analysed by paired 't' test.

Results & Discussions:

Table 1 shows the Mean, SD, SE, MD and t-ratio values related to their Speed (50 Meters Dash).

Group	Test condition	Mean	SD	SE	MD	t-ratio
Experimental	Pre test	9.76	1.58	0.483	1.44	2.137*
	Post test	8.32	1.14			
Control	Pre test	9.91	0.83	0.261	0.18	0.253
	Post test	9.73	0.79			

Level of significance = 0.05

The above table shows that the Experimental group pre test and post test mean values were 9.76 and 8.32. And the Standard deviations of pre and post tests were 1.58 and 1.14 respectively. And the control group pre test and post test mean values were 9.91 and 9.73. And the Standard deviations of pre and post tests were 0.83 and 0.79 respectively. The above table reveals that there is a significant difference in experimental group between pre and post test. The obtained 't' value is more than the table value 2.04. And there is no significant difference of Control group between pre and post test.

Table 1 shows the Mean, SD, SE, MD and t-ratio values related to their Agility (Shuttle Run).

Group	Test condition	Mean	SD	SE	MD	t-ratio
Experimental	Pre test	11.47	0.59	0.173	1.34	2.103*
	Post test	10.13	0.21			
Control	Pre test	11.52	0.60	0.185	0.17	0.112
	Post test	11.35	0.57			

Level of significance = 0.05

The above table shows that the Experimental group pre test and post test mean values were 111.47 and 10.13. And the Standard deviations of pre and post tests were 0.59 and 0.21 respectively. And the control group pre test and post test mean values were 11.52 and 11.35. And the Standard deviations of pre and post tests were 0.60 and 0.57 respectively. The above table reveals that there is a significant difference in experimental group between pre and post test. The obtained 't' value is more than the table value 2.04. And there is no significant difference of Control group between pre and post test.

Conclusion:

The findings of the study reveals that there is a significant difference in Speed and Agility of experimental group between pre test and post test. 12 weeks own body exercise and SAQ training program shows positive effects on performance parameters among school girls. And there is no significant effect in speed and agility of Control group. It is conclude that 12 weeks own body exercises and SAQ training program shows positive effects on performance parameters like Speed and Agility among school girls.

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Analysis on the Effect of Blood Genotypes of School Children on Their Obstacle Race Performance of Scott Motor Ability Testing Protocol

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Abstract:

Human evolution process seems the prime initiator for differences in the genetic make-up of the individuals and the possible individual differences in functional physiology. This difference in the functional physiology could induce significant changes among the individuals with respect to their several of abilities including the motor abilities. O blood group individuals seems have some advantages and may perform better in motor ability domains and hence this study was conducted to understand this premise. The criterion variable tested was the Obstacle race performance of Scott Motor Ability test protocol. 294 school children in the age range of 12 to 16 years participated with different blood groups. Analysis of Variance (ANOVA) indicated that the there is significant difference among groups (F= 3.985 at P value of 0.008) with respect to their obstacle race performance. O blood group children showed significantly higher performance (20.5sec) when compared to the other three blood group children of the study. Hence, it was concluded that the O blood group school children had better obstacle race performance ability among the four blood groups of school children.

Key words: blood groups, functional physiology, motor ability, obstacle race, genetic make-up.

Introduction and premise for the study:

Human migratory patterns and their exposure to different kinds of epigenetic factors like different environmental conditions, physical difficulties, nutritional variations, various other cultural practices and such differences in the human endeavour had probably initiated significant differences in the human physiology through the medium of differential genetic make-up. Differences in genetic make-up may be due to consistent mutations in the genome of the humans due to several epigenetic factors that might have triggered these. Variations in the blood, represented with different genetic factors may also be considered as the result of the human evolution. Presence or absence of alleles of the blood related genes could recognise the blood groups as A, B, AB and O groups with Rh factor present or absent. Among these blood genotypes, the A groups seems the very primitive to the human beings and the latest of the blood groups for the human beings is O blood group. Though it may be difficult to explain the precise reasons and timeline for observing these variations in the blood of the human beings, the main factor of human survival depends on the human beings' immune function, and hence this may be the main factor that would bring the genotypic differences among the individuals including their blood groups.

Blood is an important tissue for the human functional physiology, as the blood is responsible for several major, important and vital physiological functions for human existence. Blood is not only the direct carrier of immune bodies like various type of leucocytes and other blood cells including the erythrocytes, which are very

important functionaries in the immune function. Blood, which is the major functionary of circulation of various chemical and other substances throughout the body, carries substances like cytokines, hormones, enzymatic protein bodies, energy substrates and other important functional factors that are essential to carry on the various metabolic cascades in the human body. Even the myokine circulation is another major function of the blood which establishes and optimises the various cell signalling mechanisms of the body that would promote and maintain the physiological homeostasis. Functional abilities of these circulating factors may be different due to the presence or absence of genetic factors that differentiate the blood into various groups. Erythrocyte functional ability, substrate carrying ability, myokine carrying ability etc may be different among the various blood groups causing differences in the physical capacities of the individuals with different blood genotype. Hence, the present study intends to understand if there is any effect on the obstacle race performance of the Scott Motor Ability test protocol due to the difference in the blood groups of school children.

Methodology:

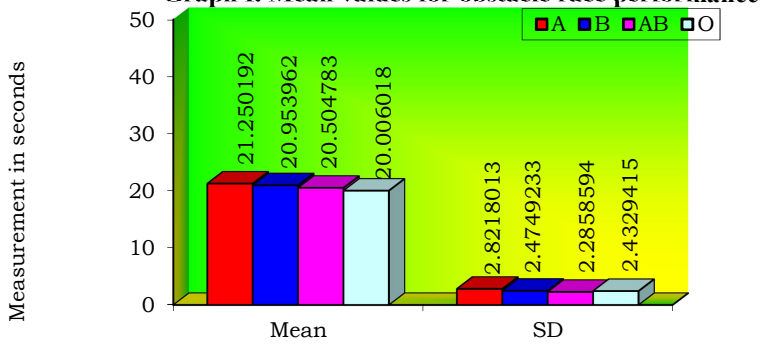
A total of two hundred and ninety-four school children both boysand girls in the age group of 12 to 16 years were included for this study. Their blood groups were identified and the motor activities achievements were compared and analysed with the Analysis of Variance (ANOVA) at 0.05 level of significance. The motor activity conducted for the study was Obstacle race of the Scott Motor Ability protocol. The data analysis also included the post hoc considerations to find out the source of the significant difference among the various blood groups.

Analysis of data and results: The descriptive statistics described in the table I and Graph I, indicates that the mean values of the Obstacle race performance of the school children with different blood groups showed significant differences numerically. O blood group children

Table I. Mean values for Obstacle race performance

Blood group	No.	Mean	SD
A	52	21.250192	2.8218013
B	106	20.953962	2.4749233
AB	23	20.504783	2.2858594
O	113	20.006018	2.4329415

Graph I. Mean values for obstacle race performance



Recorded the fastest time for the Criterion variable of the study (Obstacle race) with 20.006 seconds, followed by with AB blood group children with 20.5 seconds, B group children with 20.95 and followed by A group

with 21.25 seconds indicating that the O group children showed highest performance and the A group showed least performance in the intended obstacle race.

Analysis of variance (ANOVA) as depicted in table II indicated that the obtained F value of 3.985 was significantly high at the P value of 0.008 and hence it was assumed that

Table II. Analysis of Variance for Obstacle race performance

Source	df	Sum of squares	Mean Square	F	P vaue
Between Groups	**3**	**75.32**	**25.10**	**3.985**	**0.008**
Within groups	**290**	**1827.14**	**6.30**		

there was significant difference among the various blood groups school children of the study with respect to their obstacle race performance of the experiment. To find out the source of significant difference among the groups, the Tukey's HSD post hoc comparison was conducted.

Table III. Tukey HSD post hoc comparison (Least Significant Differenceamong groups)

Blood Groups	Blood Groups	Obstacle Race		
		Mean Difference	Std. Error	Sig.
A	B	.2962300	.4249732	.486
	AB	.7454097	.6285685	.237
	O	1.2441746*	.4206188	.003
B	A	-.2962300	.4249732	.486
	AB	.4491797	.5773851	.437
	O	.9479446*	.3394044	.006
AB	A	-.7454097	.6285685	.237
	B	-.4491797	.5773851	.437
	O	.4987649	.5741877	.386
O	A	-1.2441746*	.4206188	.003
	B	-.9479446*	.3394044	.006
	AB	-.4987649	.5741877	.386

The individual post hoc comparisons as indicated in the table III reveals that there was significant difference between the O and A blood groups of school children (P = 0.003) and between the O and B blood groups of the school children of the study (P= 0.006) and there was no other significant difference observed among the other combinations of groups and this signifies that there was no significant difference between the A and B, B and AB groups of the study. The results clearly indicated that the O blood group school children of the study showed significantly higher obstacle race performance when compared to the other three groups of the study.

Discussion on results:

The results of the study indicated that the O blood group school children of the study showed significantly higher level of performance with respect to one of the components of the Scott Motor Ability test protocol, Obstacle race, when compared to both A and B blood groups of school children of the study. O blood group is most common type of genotype among the global population and there were studies which suggest that O blood group individuals

exhibit better immune function due to optimised endocrine rush during the times of infection etc. O blood group individuals are also seen performing better in terms of endurance activities and several elite endurance athletes had this blood group. In terms of the cognition also, O blood group individuals may show considerable neuronal plasticity and might exhibit cognitive functional advantage in motor activities. Though, there are no studies yet undertaken, examining the effect of blood groups on the cognitive attention, it may be suggested that O blood group individuals may show significant advantage in this motor performance variable thereby certain advantage in executing the obstacle race.

Conclusion:

It is concluded that the school children with O blood group showed significantly higher levels of the obstacle race performance of the Scott motor ability protocol thereby indicating that these school children may have certain advantage over the other blood groups of children in terms of motor ability domains.

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A Very Fruitful Marriage of Sports and Icts; an Analytical Perspective

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Abstract

Sport has been a part of human life for a very long time. Whether it is for enjoyment, competition or even a spectacle, sport provides each of those things and more. Over the years, sport has spun off into a wider range of entities and fields. Advancements in Information Communication Technologies, ICTs and on-going information revolution come with a great promise and have drastically impacted the approach and functioning of humankind. The field of Sports are not immune to this trend. Although games at its core, Sport is much more than that it was yesterday, Technology particularly the ICTs becoming an integral part of many sporting events and competitions across the globe. ICTs have been readily used in assisting Umpires and Referees in crucial decision making and avoiding any possible human error. Technology is deployed in training of sportspersons and tracks their performance. Algorithms are used to analyse and predict the game of opponents. The present paper sets out locate how Technology particularly the ICTs have been deployed and utilized and transformed the sports discipline with a specific reference to FIFA World Cup 2022. The air conditioning Microclimate Bubble Stadiums, the Engineered Turf and the Football Field, the marking of Field by Robots, the Video Assistant Referees (VAR), centralized video operation room, the Semi-automated offside checking and magnetic field and sensors in the ball all have leveraged on ICTs and, cutting edge Technology was put into use the maximum in one of the most coveted games in the world, Football. The Paper as well traces how the use of Technology in Football transformed, how the Sport is approached, judged and consumed. It can be said that the marriage between Sports and Technology is the one that would remain intact, and the bond will grow stronger with time.

Keyword: Technology, Sports, ICTs, FIFA 2022 &Analytical Perspective

Introduction

Sport used to be seen more as a recreational activity done on the weekends or after work. This has altered in today's world where Sport is available for viewing and participation 24 hours a day. Numerous Sports have become more globalized as a result of the growing understanding that there are various Sports that appeal to a variety of individuals. Sports is a significant worldwide industry with supply chains that span all national boundaries. Another essential human activity is playing Sports**.** Over the past decade, Sports has seen significant development, the introduction of the breakthrough in ICTs that followed the Internet revolution irrevocably changed how we play, consume and perceive Sports. Although games at its core, Sport is much more than that today, with Technology particularly the ICTs becoming an integral part of many Sporting events and competitions. The contest between Sports and an increase in Technology use in daily life have contributed to the demand for technical advancement in Sports. The present paper sets out locate how Technology particularly the ICTs have been deployed and utilized and transformed the Sports discipline with a specific reference to FIFA World Cup 2022 hosted by Qatar, in the month of Nov-Dec 2022.

Football

The origin of Soccer, often known as Football, the most played Sport in the World, is still a mystery. However, it is widely accepted that the modern game of football originated from the Chinese game of *tsu chu* (also known as cuju), which was played around 2500 BC. *Tsu chu*, which translates to "kicking the leather ball with feet, was played as physical instruction for troops during the Tsin Dynasty, (Ahmed, 2018). Presently more than 250 million people play Football across more than 200 Nations. In fact, Football can be played in any weather. FIFA, the International Federation of Football Associations, is the nodal authority in charge of overseeing the Sport. It was founded in 1904. The game has unquestionably grown to be the most popular, played, and watched game in the entire World, as it has spread to all corners of the globe over time. (Giulianotti & Robertson, 2004) tracing the popularity of Football note that after the British introduced Football to other countries in the late nineteenth century, it has become the most widespread Sport in the globe. (Bera, 2021) comments that in order to provide an immersive experience to audience of live broadcast Sports producers are employing Artificial Intelligence (AI) and Machine Learning (ML), to increase speed and efficiency as well as to develop new revenue prospects. Since each Athlete and the Trainer will have access to a real-time data tracking the level of fitness and possible likeliness of injuries can be obtained using AI, rudimentary traditional methods of fitness testing may become obsolete in the future, states, (Srinivasan, 2019)

Stadium and Field

By proposing innovative "recyclable/reusable" Stadiums that will be disassembled after the competition and that will be offered to poorer countries in the region, set a new benchmark for the sustainable development of Athletic events. Concerns about safety in stadiums and Sporting venues include emergency evacuation procedures, counterterrorism measures, fire containment, structural failures due to overload, riots, earthquakes, and athlete injury prevention was only possible with the intervention of Technology in all these above said areas. The Football Stadium hare completely air conditioned and microclimate bubble is created so that both the Players and spectators do not feel the extreme desert temperature. The Stadia are equipped with Solar-Powered Cooling Systems, which protect Players, spectators, and even the grass from heat-related maladies and injuries and throughout the play a temperature of 21 degrees is maintained. The Turf has been engineered and it consumes lesser water for curating and is more durable and as well reduces injury to Players. Robots are used for line marking on the field and it facilitates save time and labor resources. The Robot are fitted with advanced GPS (Global Positioning System) Technology and the Robot measures, maps the Field and draws the lines all by itself and it can get a Field ready faster than any other traditional line marking methods.

The Ball

The ball is unquestionably the focal point of the game. Since its beginnings, it has experienced several noteworthy alterations. The enormous popularity and quick growth of Science and Technology has also impacted the way the Football is manufactured and used in the game. Traditional leather panels were significantly replaced by synthetic panels. The official Football used in the World Cup 2022 was made by Adidas and named as *Al Rihla,* which when translated to English language from Arabic means, ‘the journey’. They were manufactured in Sialkot in Pakistan. One of the World Cup balls with the lowest environmental impact is the Al Rihla. (FIFA, 2022). The new ball has an Inertial Measuring Unit (IMU) Sensor that aids in making precise offside calls. The Sensor, which is positioned in the middle of the ball, transmits information close to 500 points to Video Operating Unit. The Referees will then provide critical evidence in close offside judgements since they can observe where the ball was kicked from at any given moment. The My Coach, smart ball which is used in training Football Players is helping both the

Coaches and Athletes. The My Coach smart ball, equipped with Sensors, makes it possible to track the strength, spin, and trajectory of kicks, helping Players improve their kicking technique. The ball transmits data in real time and can be accessed by both the Players and Coaches.

Video Assistant Referee (VAR)

The first match played with VAR Technology was only in 2016. Two years later, it was used at the FIFA World Cup in Russia, with great success. Now, it is used in almost all major competitions around the globe. VAR is Semi-Automated Offside process as the ultimate decision still lies with the video match official. There will be 12 cameras, tracking the position of the Players on the field of play and the magnetic field which maps the ball. The Goal Line Technology relies on cameras around each goal post to pinpoint the position of the ball and determine whether it has crossed the goal line. The other system is called Goal Ref, this uses data emitted by the sensor imbedded in the Football. This also is identified by the magnetic field on the goal post line. Both systems will then send an instant signal to the Referees watch to let them know whether a goal has been scored or not. The VAR team is in a centralized video operation room the team consists of a Video Assistant Referees. VAR are responsible exclusively for offside decisions. The VAR are sole in charge for selecting and sourcing the best and appropriate point of view from the existing Broadcast cameras and decide of whether it was an offside or not. In case of review the Field Referee indicates to the VAR official seated in the Stadium by the signal of drawing a rectangular in the air indicating the frame of a TV. Once decision-making process has been completed and the decision has been made by the VAR, the same data points which were used to determine a Player's position will be generated into a 3D animation, and this animation will be shown on the giant screen at the FIFA World Cup 2022 Stadiums and, will also be provided to TV Broadcasters and the TV viewers will be able to see them on their TV sets. (Holder et al., 2022) state that before the deployment of VAR, there was a possibility of Referees favoring the home team and there was a bias in the decisions made by the Referee. However, since the introduction of VAR the home team bias has drastically reduced, the author notes.

A Critique

The primary opponents of the usage of this new Technology note that its deployment results in several pauses throughout the game, negatively affecting its flow. While this is going on, certain performers who are blatantly opposed to VAR have had an impact by portraying mistakes as being inherent to the Sports of Football, including mistakes made by both Players and Referees. The Fans must wait a while before they can celebrate and a goal awarded to their supporting team. By blindly relying on Technology, there is also a chance of losing personal interaction warns (Sandbakk, 2020). Digital Technology must enhance conversations amongst Scientists, Coaches, and Athletes, rather than replacing human dialogue. It's crucial to exchange and transfer interdisciplinary knowledge in order to comprehend Sports Technology advancements. In order to accomplish this, there needs to be greater communication and understanding of the inherently interdisciplinary character of Sports and Technological Innovations, and Research approach and focus needs to be altered and this can be challenging as well. Interesting ethical discussions on how Technology has altered performance of Players and results in Sport needs to be taken up both by Sports Administrators and Academicians alike. The Artificial Intelligence (AI) and Big Data has been employed in Sports to predict possible moves and plans of the opponents making Technology the determinant over Player's capability and reflexive thinking.

Conclusion

The VAR Technology is innovative and helpful ICTs in Football as it reduces and avoid mistakes being made by Referee on the Field. However qualified and experienced a Referee is there is always an element of human error. With the Implementation of ICTs can lower and at times eliminate any human miscalculations that affect the result of a contest. After the VAR was introduced, there were fewer fouls and yellow cards, states (Carlos, 2019). The author goes on to note that the VAR's presence has an indirect impact and acted as a deterrent in committing fouls and the Players were acting more cautiously. Data Scientists are becoming more important than Athletes. AI is helping anticipate whether a Player is likely to suffer an injury, it also helps in selection of Player for a team and as well in training of the Players. (Windt, 2020) asserts that before selecting whether to put any Technology into use in Sports, careful considerations is required. For now, what we may recognize and consider as a marriage between Sports and Technology, is the one that would remain intact. With its greater application and acceptance from various stakeholders; the Sports Organizers, Coaches, Players, Fans and Academicians alike the bond is more and will grow stronger with time.

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Sports Injuries Is A Curse

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Abstract:-

Sports injuries are a curse, they keep coming back and while you can do a lot of things to become less injury-prone, sometimes you're just out of luck. Sports and games participation has increased considerably among youths of our country. The athlete's day today problems are not solved due to lack of knowledge and create a lot of problems to the athletes. Due to this the athletes are avoiding to show their elite performance and ultimately performance level of an athlete comes down in various games and sports. The injuries are not common for game to game or sport to sport, for all age groups and both sexes. It has been accompanied by a significant increase in the number of injuries sustained by these athletes. Most of these injuries are minor sprains, strains and many are due to overuse rather than to external force. There is no doubt that the field of athletic injuries and rehabilitation has increasing recognition as a specialty in the health care profession. This research is designed to provide the opportunity for any healthy practitioner, regardless of specialty, to explore the possible use of conservative management in the treatment and rehabilitation of injured athletes. It is not possible to have all sophisticated Rehabilitation may not available to every athlete may not always represent the most cost-effective road to recovery. It has been included methods of providing rehabilitation that are easily procured, inexpensive and in many cases can be performed by the athlete at home or at the training places.

Keywords: - sports rehabilitation Conditioning, physiotherapy, return to sports, sports injury,

Introduction

The rehabilitation means again make fit it is a process targeted at minimizing the loss associated with acute injury or chronic disease, to promote recovery, and to maximize functional capacity, fitness and performance. Injury: - means physical harm to a living being. Rehabilitation: it is the restoration of normal form and function after injury Recovery of injured or ill person up to the best possible degree of physical, mental and professional fitness. Rehabilitation in sports means recovery of injured or ill sports men up to fitness (physical fitness) for training and competition by specialized coaches and medical doctors of sports medicine. " to restore " to rights or " proper condition " , when used in relation to patient it means that he or she is restored to the " rights "to live independently and in such a way that a return to work and the enjoyment of active living is possible . Rehabilitation is a measure taken to restore maximum function following an injury. Injury rehabilitation: - One of the major contributions the trainer can make to the welfare of the athlete is in the area of rehabilitation. The type of rehabilitation program that is prescribed frequently determines what level of athletic participation will be possible in the future.

Sports injuries frequently result in muscle damage. Myofibres are continuously damaged and healed throughout adult life, and one of the fundamental properties of skeletal muscle is its capacity to regenerate

following injury. Shearing injuries and injuries in situ, which primarily affect myofibres and occur as a result of repetitive eccentric contractions, are the two most common categories of injuries at the anatomical level. In situ injuries followed strenuous activity, the administration of local anesthetics, or are brought on by illnesses, whereas shearing injuries are primarily the result of direct trauma to skeletal muscle or strain injuries. Depending on the severity and breadth of the impact, muscle injuries have a wide range of treatment options and diagnosis, while skeletal injuries always have a skeletal cause.

Sports injury patterns Examining the distribution of injuries in relation to other relevant factors, such as age group, injury type (traumatic vs. overuse), time since onset of symptoms, whether the injury occurred during training or competition, anatomical area, specific diagnosis, and injury severity, is a common practice. When we are primarily concerned with rehabilitation, these variables are extremely interesting. Let's take a quick look at how these aspects affect our recovery tactics.

According to (Knapik et al. 1991). Type of Injury (traumatic vs. overuse) Overuse injuries account for about 45–60% of all injuries treated in sports medicine clinics. This is especially true for sports like gymnastics where joints and soft tissues are put under extraordinary strains and postures. Muscular weakness, muscle strength imbalance, and anatomical misalignment are risk factors for overuse injuries Examining these risk variables leads to the conclusion that using foot orthotics and carefully structured rehabilitation programmes could help lower the incidence and prevalence of overuse sports injuries. When the analysis is limited to clinical encounters epidemiology of injury 5 at an emergency department, the situation obviously may be different. Many traumatic injuries are more acute and severe, resulting frequently in immobilization and prolonged rehabilitation.

According to Frontera et al. (1994) Injury distribution anatomically the knee, shoulder, and ankle are the most often damaged locations when the frequency of sports injuries is broken down by anatomical region. Of course, the anatomical distribution of injuries in one sport can vary greatly from another. In other words, basketball players may sustain more knee injuries than shoulder injuries, but swimmers see the opposite pattern. To create a training programme that maximises sport-specific conditioning and reduces the risk of injury, knowledge of the anatomical distribution of injuries in a particular sport is crucial. Additionally, as muscle groups near and far from the wounded area may be affected by deconditioning brought on by rest, understanding the anatomical distribution of injuries by sport may be essential for prevention.

According to Van Mechelen (1993). Severity of the damage the type of diagnosis, the length and type of treatment, the time missed from sports practice or competition, and/or the existence and degree of permanent damage can all be used to determine the severity of an injury (Van Mechelen 1993). The need for prolonged rehabilitation is typically positively correlated with severity, functional loss, and injury. It is obvious that extended durations of immobilization or rest are required for tissue repair when the severity is high. As a result, the athlete has greater physiological losses and undamaged areas decondition to a greater extent. It should be expected that recuperation will take longer in these circumstances. Preparticipation testing and rehabilitation every competitive athlete is required to regularly go through a preparticipation medical exam. The preparticipation examination is the perfect opportunity to: I treat pre-existing medical conditions before the competition; (ii) anticipate the athlete's healthcare needs; (iii) inform the athlete and his or her coach about health issues like vaccinations and injury and disease prevention; and (iv) bring up subjects like doping in sports. Identification of risk factors for medical disorders in general and sports injuries in particular is a crucial component of the preparticipation test. The epidemiological data presented in the sports medicine literature can be used to help identify risk factors. Findings including joint contractures or decreased flexibility, weak muscles, and asymmetrical muscular strength give excellent chances for "preventive rehabilitation." In these situations, the return to normal shape and function may

not immediately follow a sports injury but may be crucial in preventing additional injuries. Additionally, as improved levels of flexibility, cardiovascular endurance, and muscle strength and endurance are needed for practically every sport, rehabilitation may prove to be advantageous for sports performance.

Purpose of the study: - To prevents sports injuries, researchers have aimed to understand injury aetiology from both the natural and social sciences and through applying different methodologies. This research has produced strong disciplinary knowledge and a number of injury prevention programmes. Many injuries may occur because the rehabilitation of a previous injury was not complete. Understanding risk factors associated with sports injuries can help in the design of rehabilitation strategies resulting in a lower incidence and severity of injuries. In addition, one must not ignore nutritional supplementation and psychological intervention, which have a major role in getting the athlete back to full fitness, along with injury-free return to sports at the same level when he was injured.

Methods or methodology:-

Goal of rehabilitation: - The overall goal of the treatment and rehabilitation program is to return the athlete to his or her desired level of participation as well as safety possible. Consideration must be given to the amount of healing time required for the specific injury, length of time away from participation, the athlete's compliance with the treatment and rehabilitation programme, and the athlete's motivation to return to play. With many injuries, the athlete may face deadline to get well and resume participation. This deadline often conflict with the time required for adequate healing and rehabitation. In order to decrease recovery time and promote healing, swelling and tissue congestion in the injured area must be controlled and reduced. Furthermore nutrient supply for rebuilding injured tissue must be felicitated. Morbidity is decreased by minimizing deconditioning through early initiation of the reconditioning programme. It is also important to prevent further injury by allowing adequate healing and providing appropriate during recovery. The rehabilitation plan must take into account the fact that the objective of the patient (the athlete) is to return to the same activity and environment in which the injury occurred. Functional capacity after rehabilitation should be the same, if not better, than before injury. The ultimate goal of the rehabilitation process is to limit the extent of the injury, reduce or reverse the impairment and functional loss, and prevent, correct or eliminate altogether the disability.

Rehabilitation programme,

Steps in treatment and rehabilitation & Prevention.

The initial step in treatment of athletic injuries is prevention. The old ADAGE that on an ounce of prevention is worth a pound of cure is certainly true when dealing with injuries there are four aspects of prevention.

1. The Physical Condition of the Athlete.
2. The Proper Equipment
3. A Safe Playing Environment And
4. The Participation Physical Examination

An individualized program that is drawn up for each athlete is a necessity. This programme (rehabitation) should involve include how long each season should last and the number of times per week that each exercise should be performed, and should also include a long-term plan that estimates when each exercise should be used.

There are many pieces of specialized equipment's available and these are very useful. One can use a little or no equipment, however, and still obtain adequate results if the programme is carefully and knowledgeable designed for a particular athlete's needs and if the athlete is adequately motivated and supervised for the duration of program

Most of the athletic injuries can be classified into two broad groups.

Intrinsic / endogenous causes: as case of ruptured muscle fibers.

Extrinsic / exogenous cause: caused by external agents like balls, sticks, or by an action of the opponent.

Intrinsic injuries can be subdivided into two categories:

1. Over use
2. Traumatic.

Overuse injuries: - Are generally of gradual onset. And its occur in the first instance as a slight ache or nagging pain, related to a particular movement pattern and not noticeable at other times. If the activity is continued, the pain becomes increasingly severe, to the stage where it causes loss of function.

Example: - The runner's tight rigging hamstring is an over use injury. A stress fracture in bone, in its early stages, is an over use injury.

Traumatic intrinsic injuries happen suddenly, despite having no obvious cause.

Example: The squash player's Achilles tendon rupture is an example of traumatic intrinsic injury; Runner's tight rigging hamstring and a stress fracture in bone are over use injury.

Common Mistakes: - The More Common Mistakes Are Listed Here So That They Can Be Avoided.

1) Rehabilitation is often focused on a single muscle group only. After evaluation of the authority to find out which muscle or particularly weak, all muscles of the limb need to be exercised, concentrating on those that are weaker, however the limitations imposed by the injury or surgery should be observed.

2) Rehabilitation he's seldom continued until the injured limb is for found on our superior to the and India decided. The seventh Para meters previously mentioned need to be tested and the results documented before allowing return to participation.

3) Exercise for developing proprioception is often forgotten.

4) Postural defects and anatomical mall- alignment, as well as biomechanical imbalances, are frequently neglected when the rehabilitation program is developed.

5) Specific sports skills and the SAID principles (specific adaptation to impose it demands) are often not incorporated into the program. Exercises should be adapted to the specific needs of the athletics particular position in a spot.

The following are few common injuries.

1. Runner's Knee

2. Tennis Elbow
3. Achilles Tendonopathy
4. Ankle Sprain
5. Concussion
6. Groin Strain
7. Muscle pull
8. Shin Splints
9. Lower Back Pain
10. Shoulder Impingement

1. Runner's Knee: - Causes: Of all sports-related injuries, knee injuries account for around 55% of cases. It can affect any athlete, not just runners, including cyclists, football players, volleyball players, and others. It is frequently brought on by tight or weak quadriceps, imbalances near the knee, poor pelvic control, unsuitable or worn footwear, and overtraining.

Symptoms: Some of the symptoms include knee swelling and soreness below and on the sides of the kneecap, especially with a deep knee bend or extended sitting. Frequently observed while ascending stairs.

Prevention: Choose a softer running surface, such as an indoor track, rather than hard pavement. Strengthen your quadriceps and gluteal muscles with weight-appropriate training. Wear proper shoes, update them frequently, and grade your jogging or fitness programme. Rest, and stop before you become exhausted. Preserve your fluids before, during, and after your run. Before and after the action, stretch.

Treatment: The degree of the discomfort will determine the available treatments. Some of the typical treatments include rest, painkillers, and strength training. Make sure you warm up thoroughly before starting your workout again, and then apply ice to your knee for around 20 minutes.

Sportsmen affected by Runner's knee:

Serena Williams, Danielle Slaton, Pavel Bure

2. Tennis Elbow: - Causes: Tennis elbow occurs when the forearm is repeatedly abused while participating in sports like tennis, golf, and badminton. The wrist is pulled back by these muscles. Acute pain is frequently caused by inflammation of the foreman tendons, which insert into the side of the elbow region.

Symptoms: When touched, the wrist or fingers are moved backward, the elbow's outermost portion hurts. By engaging in certain motions, such as turning a doorknob or grabbing or carrying large things, the pain may intensify and spread down the arm.

Treatment: RICE, Anti-Inflammatory medication, physiotherapy exercises and appropriate rest.

Prevention: Maintaining body position during the swing, specific prehab exercises that strengthen the forearm, wear tennis elbow strap.

Sportsmen affected by Tennis Elbow: Sachin Tendulkar.

3. Achilles Tendonopathy: - Causes: Achilles tendonopathy is a very prevalent injury among runners and athletes who participate in high-jumping sports. The Achilles tendon, which connects the calf muscle to the heel bone, is inflamed in this case. The Achilles tendon is extremely strong but not very flexible, making it vulnerable to microtears that cause inflammation. Inappropriate footwear is another key factor, as is poor foot biomechanics.

Symptoms: Acute symptoms include pain at the back of the ankle, just above the heel especially whilst trying to rise up onto toes, occasional swelling.

Treatment: PRICE, NSAIDS, gentle calf stretching, wall stretching toe raises and balancing.

Prevention: Warm up before stretching and exercises that strengthen calf muscles.

Sportsmen affected by Achilles Tendonitis: Shaquille O'Neal.

4. Ankle Sprain: - Causes: The ligaments on the outside of the ankle are stretched and torn when the foot unintentionally bends inside. Sports involving specialized foot movements, such as jumping, turning fast, and running, almost often entail ankle sprains.

Symptoms: Immediate pain at the site with swelling over outside of ankle. The injured area becomes tender and feels unstable.

Treatment: RICE immediately for 48 – 72 hours along with medication (NSAIDS after 24 hrs), wearing ankle braces during the healing process. Once has healed increase ankle control with balance exercises

Prevention: Regular exercises to strengthen muscles around the ankles.

Sportsmen affected by Ankle Sprain: Tillakaratne Dilshan, Serena Williams.

5. Concussion: - Causes: A concussion is simply a brain injury (swelling) brought on by a head injury. Sports involving sudden contact, such football, boxing, hockey, and soccer, are those where it occurs most frequently. Multiple concussions could harm the brain permanently. Always err on the side of caution when treating players who have sustained head injuries.

Symptoms: headache, dizziness, forgetfulness, loss of balance, disorientation, and vision distortion, as well as trouble concentrating and nausea. It doesn't always involve being unconscious.

Treatment: Application of ice to the area of the blow, immediate rest, mild pain relievers depending on the severity of the concussion, full concussion assessment (assess eye pupil reactions, among other things, and verbal communication with the player), and always consult a doctor right away as symptoms are frequently delayed in onset and frequently missed.

Prevention: Wearing protective headgear when playing contact sports is the greatest strategy to prevent concussions because you cannot avoid participating in an activity just because there are hazards associated.

Sportsmen affected by Concussion: Steve Young.

6. Groin Strain: - Causes: In sports like soccer, hockey, basketball, volleyball, and even racket sports, excessive running or jumping can strain the muscles in the upper thighs that hold the legs together. Frequently as a result of excessive use, a sudden slip, or overstretching the muscle

Symptoms: Sharp pain is experienced which is sometimes accompanied with swelling and bruising of the inner thigh.

Treatment: RICE immediately along with anti-inflammatory medications after 24 hrs. Before returning to play the sport, undergo a stretching and strengthening programme. Commence pain-free activity for the muscle as soon as possible

Prevention: Adequate stretching and warm up exercises before playing the sport. The idea is to increase the intensity of activity to ensure the muscles are strengthened rather than jumping in too quickly.

Sportsmen affected by Groin Strain: Chris Gayle, Simon Jones

7. Muscle pull: - Causes**:** Any athlete can have a muscle pull because they are so common. When a muscle is stretched beyond its tensile load or is overextended, small tears inside the muscular tissue result in a strain. All types of athletes risk pulling a muscle as a result of insufficient warm-up activities, muscular exhaustion, lack of flexibility, and muscle weakness.

Symptoms: Pain in the affected muscle area with pressure, stretch, or load, swelling or inflammation, weakness, discomfort, and, in more severe cases, a drippy nose and redness.

Treatment: RICE* immediately, anti-inflammatory medications after 24 hours, and gradual pain-free stretching after 48 hours are all beneficial. Start your pain-free activity as soon as you can. One can start playing the sport once the wound has adequately healed, but until you are fully recovered, you should take breaks during your training to stretch.

Prevention: Stretching correctly before and after exercise, making sure the muscle has received appropriate conditioning before exercising, and avoiding working out while the muscle is weak or exhausted are the greatest ways to avoid straining a muscle.

Sportsmen affected by Muscle pull: Alexandra Stevenson, Rafael Nadal.

8. Shin Splints: - Causes: The official name for shin pain, which typically occurs on the inside of the shin, is medial tibial stress syndrome, or MTTS. Inflammation of the muscles and the shin bone to which they are attached is the main reason (Tibia) Shin splints can develop when exercise intensity is raised above a healthy level, worn-out shoes are used, or a person jumps or runs on hard terrain. Has a biomechanical trigger most of the time.

Symptoms: The majority of the typical symptoms of shin splints include pain while moving the affected area, occasional swelling, and soreness when jogging and walking. A patient with this pain may have dull, agonizing pain in the muscles or either side of the shinbone.

Prevention: The best preventative strategies are wearing comfortable shoes, cross training, stretching, and gradually increasing workout intensity.

Treatment: The best forms of treatment are cold, stretching, and anti-inflammatory medicines. An accurate biomechanical evaluation of the foot position, gluteal muscle strength, and core stability for improved lower limb control.

Sportsmen affected by Shin Splints: Monica Seles, Grant Hill, James Kirtley.

9. Lower Back Pain: - Causes: Runners, cyclists, golfers, tennis players, and baseball players are typically the ones that experience lower back pain. Some causes of lower-back discomfort include bulging discs, sciatica, stress fractures, and back spasms. Sports-related back pain is most frequently caused by improper training methods, muscle weakness (particularly in the core muscles), and a lack of preparedness. Even the smallest difference in leg length, along with improper footwear or poor lower limb biomechanics, can make runners experience back pain.

Symptoms: Back discomfort that might be minor or severe, recurrent or permanent. Usually accompanied by certain muscle pain that limit motion, such as bending or straightening, and make sitting unpleasant.

Prevention: Even while certain lower-back injuries are unavoidable, warming up properly before exercising will significantly lessen the risk. Injury risk can be reduced by having a strong core (abdominals, gluteal muscles, etc.).

Treatment: Anti-inflammatory drugs, rest from the aggravating activity, and mild, pain-free stretching can all be used to treat a straightforward lower back ache or back spasm. Additionally, applying heat to the area can aid in easing the discomfort by reducing muscular spasms. A podiatrist might provide runners with orthotic lifts to fix the issue if their legs are different lengths.

Sportsmen affected by Lower-Back-Pain: Andre Agassi, John Terry.

10. Shoulder Impingement: - Causes: Shoulder impingement can happen in any sport that requires a lot of overhead movement. Tennis, swimming, weightlifting, baseball, and volleyball are the sports where shoulders get hurt the most. They are primarily brought on by excessive shoulder use, which can induce rotator cuff tension. Typically results from inadequate shoulder and scapular muscle control, which places too much strain on the shoulder joint and the tendons that support it (the rotator cuff).

Symptoms: Pain, weakness, stiffness in the shoulder are some of the common symptoms.
Prevention: An athlete is more prone to sustain a shoulder injury if they haven't used their shoulder in a while. By building up the muscles with targeted weight training activities before to participating in the sport, it can be prevented.

Treatment: The best available therapies for this in the acute stages include RICE therapy and anti-inflammatory medications, followed by a graded rehab strengthening programme for the shoulder and scapular muscles.

Sportsmen affected by Shoulder Impingement: Roger Federer, Maria Sharapova, Andy Roddick.

Famous sportsmen and their notable injuries

Deepak Chahar: Just before IPL 2022, Chennai Super Kings received a huge blow that Deepak Chahar could miss out the whole campaign due to a hamstring injury, which eventually kept him out of action for 6 months. Deepak returned to bowl again in the Zimbabwe ODIs where he did well. After being in and out of the playing 11 since then for varied reasons, Deepak has again injured himself. The same hamstring injury coming to his fall.

1. Dennis Lillee – One of the best Australian fast bowlers of his generation, Dennis Lillee was diagnosed with "stress fractures" in his lower vertebrae. He underwent a strict fitness regime, reassessed his body and bowling technique and eventually returned to cricket, stronger having overcome what looked like a career-threatening injury.

2. Muhammad Ali – Soon after the legendary American boxer retired from the sport, he was diagnosed with Parkinson's disease in 1984. It is believed that repeated blows to his head might have been the reason for his brain injury.

3. Fabrice Muamba – The 24-year-old footballer who plays for Bolton Wanderers (English Club) suffered a cardiac arrest on 17 March 2012. Doctors said that his heart stopped for 78 minutes. However, swift treatment and instant preparedness by the doctors on field helped them save the 24 year old footballer's life.

4. Shaquille O'Neal – One of the heaviest players ever to play in the NBA suffered an Achilles Tendonitis injury on Feb. 1 2011. He was able to play just one regular-season game and two playoff games after the injury. After nineteen years and four NBA titles, and the persistent problem with his right Achilles tendon, led O'Neal to call it a day from professional basketball.

5. Derek Redmond – At the 1992 Olympic Summer Games in Barcelona, the British athlete tore his right hamstring while running the 400 meters semi-final. Determined to complete the race, he got up and resumed the run despite the excruciating pain. Seeing him limp on the track his father joined him and helped him finish the remaining 120 meters.

Return to Sport:

Return to play is defined as the process of deciding when an injured or ill athlete may safely return to practice or competition. Early return to training and sport are considered sensible goals if the rate of return is based on the affected muscle, the severity of the injury and the position of the athlete.

Once an athlete has been medically cleared to return-to-play there are some fundamental steps that need to be followed:

- The athlete has to fulfill the fitness standards of the team he is returning to.
- The athlete needs to pass some skill specific tests applicable to his playing position.
- The player may then begin practicing with the team.
- Exposure to the match situation should be gradual, with the match time gradually increasing.

There are simple guidelines which need to be developed by each team with contributions and support from each member of the medical team.

Result and discussion: - Treatment and Rehabilitation of injured athletes. It is not possible to have all sophisticated rehabilitation may not available to every athlete may not always represent the most cost-effective road to recovery. It has been included methods of providing rehabilitation that are easily procured, inexpensive and in many cases can be performed by the athlete at home or at the training places.

Conclusions

I conclude that as per the above knowledge , I hope that the future will bring a comprehensive delivery of care to the athlete , in which delineation of health are specialty will becomes less important than the concerted efforts to address all aspects of injury diagnosis, prevention , treatment and rehabilitation as a team . It is important to remember that the athlete has the final say. The role of surgical interventions, as well as pharmaceutical requirements, is need based and beyond the scope of this manuscript, but the major work on a sportsperson after injury is done by the rehabilitation team. In addition, one must not ignore nutritional supplementation and psychological intervention, which have a major role in getting the athlete back to full fitness, along with injury-free return to sports at the same level when he was injured. The epidemiology of sports injuries can be studied, and both prevention and rehabilitation can benefit from it. The incomplete rehabilitation of a prior injury can lead to numerous injuries. Understanding the risk factors for sports-related injuries can aid in the development of rehabilitation plans that will reduce the frequency and severity of injuries. As part of the medical treatment provided to a travelling team, rehabilitation methods can also be used in sports injury clinics. These ideas should be understood by every sports medicine professional, and they should be used when treating athletes.

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Innovative Teaching Methods in Physical Education for Better Learning

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Introduction

Physical education (PE) program has been creating, implementing, and evaluating in promoting lifelong wellness among the school children. Students learn how to make healthy food choices, reduce time playing video games, and watching television [1]. Previously, the PE program has been removed from the school curriculum as schools everywhere strive to improve the academic performance of their students, many have cut PE and recess periods to leave more time for sedentary classroom instruction [2]. Over the years, researchers and educators have revised their PE curriculum, equipment's, and training programs to meet the six National Association of Sport and Physical Education (NASPE) guidelines. In India, Central Board of School Education has made PE an elective subject in school curriculum. The idea of including PE class in school is to make the students healthy and teach them a healthy lifestyle. The aim of the study is to highlight the latest strategies, age-appropriate equipment's, new curriculum, used in the field of PE program for better learning and developing health among young children through physical activity. For this purpose, new PE activities, equipment's, PE curriculum in the field of PE obtained through Google search, with the keywords PE curriculum, PE equipment's, age-appropriate PE program, assessment in PE, strategies in PE, and curriculum guidelines for PE; as well the experience by researchers were expressed in this article.

Innovative Program in PE

Until date, the PE program in some schools in India has not really changed its methodology, wherein children play a particular sport by sharing one ball in a huge group. Moreover, the drawback is that not every child gets the opportunity to play. With the introduction of new curriculum, age-appropriate equipment's, teaching techniques, etc., the PE class has become more interesting, attractive, and more valuable for the students. Researchers and educators are trying to revise their PE curriculum and training programs to meet the six NASPE (National Association of Spore standing of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities,

(1) demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, (2) demonstrates unachieved and maintains a health-enhancing level of physical fitness, (3) participates regularly in physical activity, (4) at and PE) standard guidelines: (5) exhibits responsible personal and social behaviour that respects self and others in physical activity settings, and (6) values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction. Sports, Play, and Active Recreation for Kids (SPARK), a pioneer organization in the United States, has been contributing in the systemic reform of PE since 1989. In addition to the six guidelines of NASPE, SPARK supports Healthy People Goals 2010: (a) PE classes make every effort to engage students in moderate to vigorous physical activity (MVPA) at least 50% of their class time

without sacrificing academic achievement or student enjoyment of PE, (b) SPARK focus on positive health outcomes of students. These include physical fitness and sports skills, (c) SPARK programs include strategies that promote behaviour and environmental change techniques, and (d) SPARK also follows As soon as possible (ASAP) activity to avoid the lengthy instruction in physical education class (SPARK) [3]. In India, many organizations such as LEAPSTART (FIT-KIDS), EDUSPORTS, KOOH SPORTS, SPORTS MENTOR, Physical Education Foundation of India, Youth Affairs and Sports, National Association of Physical Education and Sports Science, and all the physical educators and health educators are also taking initiatives to develop PE program to meet the standard guidelines. Recently, Sports Authority of India in collaboration Global Trust has launched a new scheme in India called the School Sports Promotion Foundation in five sports discipline, namely, athletics, football, volleyball, basketball, and cricket for talent identification in school children. Its main objective is to provide sports education in children from the grassroot level. Sports education includes basics movement skills, locomotion, basic skills of the games, rules and regulations of the games, nutritional knowledge, and team cohesion [4].

Teaching Strategies

New teaching strategies like ASAP active games were introduced in PE class to keep the students active ASAP, which is one of the physical educator's objectives. In many traditional PE classes, students arrive at the activity area only to stand or sit and listen to lengthy instructions (SPARK). This wastes valuable activity time and should, therefore, be done sparingly. This section includes a variety of enjoyable activities to begin activity immediately. ASAP activities use little or no equipment, are fun and challenging and promote health-related fitness. They quickly involve all students in MVPA with few instructions or rules to slow them down. It reduces wasting of time in giving lengthy instruction in the class. Playground expectation cards, skills cards, task cards, etc., were also used on the play field to reduced lengthy instructions. Another strategy used in PE class is 80/20 rules, which means that the PE teacher tries to keep the students active 80% of class duration. Music is also used in PE classes to make more fun activities which interest the students and are also used as start and stop signals. Limited space activities like BINGO GAMES are introduced which allowed the PE class to run in limited space since space constraint is one of the most common issues in today's school environment. Whether it be inclement weather (rainy day, smog warnings, extreme heat, etc.) or the usual activity area is unavailable (assembly in the gym, a book fair in the multipurpose room, the blacktop is getting re-paved, etc.), every so often, the only choice of space for PE is a classroom or other small area. To involve the parents in PE activities, HOME-PLAY games were introduced in PE class which keep the child active at home and during vacation. It is a take-home page with interesting facts on 1 side, and fun challenges on the other. MVPA is also introduced during the PE classes to keep the students ready for the next challenges. For example, chasing and fleeing skills are used in many of the most popular games played by children. By changing the locomotor skill, the method of tagging, the task students perform to re-enter the game after being tagged, and/ or the ways in which they may seek safety, you can create enough tag games to last a lifetime. Chasing and fleeing games are usually short in duration (5–10 min), and use little or no equipment. The games in this unit provide opportunities for students to develop chasing, fleeing, and spatial awareness skills while promoting health-related fitness in enjoyable ways. The activities are designed to include and challenge all students' physical skills, while maintaining enjoyable, healthpromoting, moderate-to-vigorous physical activity during class.

Latest Equipment's

The equipment is one of the backbones of PE classes. In PE classes, it should be age-appropriate and safe to use for the child. Bevans et al. suggested that age-appropriate equipment increases pain free practice, increases students' chances for active participation in the class, and maximize the amount of time devoted to PE during which children are physically active. Children get maximum activity when every child has a piece of equipment and does

not have to wait a turn. For early childhood, equipment's such as scarf and balloon are used in learning catching and throwing lessons. In K-2 grade students, bean bags and fluff ball are used which falls quickly to gravity and the movement becomes fast. A foam ball is another equipment introduced to teach kicking and trapping in K-2 and 3-6 children. Fun activities such as parachute and manipulative games which teach them team work and develop their upper body strength were introduced to them. All the objects are safe to play and does not hurt the child.

Latest Curriculum

The NASPE is now endorsing the concept of Comprehensive School Physical Activity Programs (CSPAP) that are designed to increase daily levels of physical activity for all school-age children and youth. This new CSPAP curriculum model called Health Optimizing Physical Education (HOPE) that can be used to help Primary to High School (P-12) students to acquire knowledge and skills for lifelong participation in physical activity that contributes to optimal health benefits. A CSPAP intends to provide expanded opportunities for physical activity beyond regularly scheduled PE time – including before, during, and after school, as well as opportunities outside of school (e.g., at home and in the community. HOPE aims at developing the public health goal for students to accrue adequate amounts of current physical activity and be prepared for an active lifestyle in adulthood. It involves all the socioecological factors that affect the child so as to achieve the optimal health benefits. They are individual, interpersonal, organizational, community, and public policy. Another teaching curriculum called Teaching Games for Understanding (TGFU) is developed in America to elicit the players'/students' tactical awareness and skill development from situated learning experience enabled by the Teacher/Coach/Physical Educationist. Naomi Hart (2010) discussed the model of TGFU as (a) game participation: The learning in PE starts with games participation in a modified game or real games. At this stage the formative assessment takes place, (b) Game appreciation: Through gameplay students are given the chance to enjoy and experience of learning, (c) tactical awareness: Through gameplay students are encourage to identify attacking and defending strategies and implements successful tactical action, (d) making appropriate decision: In dynamic situation, students make real time decisions. These could be with or without the ball, (e) skill execution: Do the students have the ability to convert their decisions into actions? Can they execute the correct skill to enable their team to succeed? (f) Performance: Students take part in full or modified game applying all new knowledge and skills. This is the time for summative assessments. A detail on TGFU was described by Stolz and Pill [9] and Griffin et al. (2005) in the Physical Education Review journals.

Discussion

According to the U.S. Olympic Committee, the university's athletes are dominating the U.S. Olympic Team in which the U.S. has competed since 1912. This Olympians are not born, but they are made through their lifetime participation in research-based PE program from school. In the west, children are taught the importance of PE from the grassroot level. A progressive structure is being followed so as to inculcate the basic techniques of movements, skills, and a sense of fitness right from early childhood. PE program has its unique benefits and its program fits into each other. An example of how a progressive structure PE curriculum intertwine and integrate one into other from early childhood, kindergarten, and grade 3–6 program can be explained by teaching the skills of throwing and catching. In early childhood, a child would be exposed to the throwing and catching of a balloon. The weight of descent is slower and gives time to the child to reflex while trying to catch the balloon. As the child gets more comfortable with the balloon, the object is replaced with a scarf. Since the scarf falls quicker to gravity, the personal space of the child is maintained and safely guarded. In the program for the age group ranging from kindergarten to Grade 2, a slightly heavier object (e.g., a fluff ball) is used. Since the fluff ball is heavier, it will fall faster, which is again age-specific and is safer for the child. Therefore, instead of using a big ball to teach children of this age group, a fluff ball is safer and will save their finger from getting hurt. The primary focus is to inculcate

gross motor skills in this age group. This activity is a progression of the movement techniques learned by the children in their early childhood. In this level, the movement is more precise and prepares them to learn higher techniques as the basic techniques of movements will help them in formulating to a better motor program. In the curriculum for the age group of grades 3–6, the action is more defined into a more appropriate throwing action. At this stage, tennis ball is used. As they get more comfortable with the tennis ball, the children can be introduced to partners so that the skills of the children are groomed and developed to improve their potential, similar to that of playing cricket wherein the ball is actually thrown back and forth to learn catching and throwing skills. By the time, the child goes to the entire progression through the PE program and the child skills are hold at the highest level to be implemented in the future.

Conclusions

New curriculum, age-appropriate equipment's, teaching techniques, etc., should be introduced in all the schools to make the child engage in physical activity for at least 60 min/day. However, the use of innovative equipment's, strategies, and curriculum in PE classes must be research-based and need for the children. Physical education program should be one of the major subjects in school's curriculum since the physical educator has a great role to play in the grassroot level to groom a child into making a potential and highly skilled professional.

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Impact of Combined Strength Training and Endurance Training on Muscular Strength Endurance on Middle Distance Athletes of Hyderabad District

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Abstract:

The Impact of simultaneous quality and continuance preparation on Muscular quality perseverance on Middle Distance Athletes men from Hyderabad District were chosen as subjects. The age of the subjects extended between 18 to 22 years. The chosen subjects were separated into three gatherings of ten subjects each. Amass - I outlined quality preparation before continuance preparation, Group - II planned quality preparation after perseverance preparation, and Group - III went about as control gathering and did not take an interest in any extraordinary preparing program separated from their consistent exercises. The information was gathered before and after the preparation program of twelve weeks. The investigation of covariance was utilized to break down the information. The aftereffects of the review demonstrated that the Muscular quality continuance was altogether enhanced because of the simultaneous quality and perseverance preparation.

Keywords: Concurrent strength, Endurance, Muscular strength endurance, Bent knee sit-up

Introduction

The quality and continuance preparing is attempted by various competitors in Middle Distance Athletes men with an end goal to accomplish adjustments particular to both types of preparation. Writing discoveries to date, researching the neuromuscular adjustments and execution changes related to simultaneous quality and continuance preparing has delivered conn conflicting outcomes. Demonstrated that simultaneous preparing restrains the improvement of quality and power, yet does not influence the advancement of high-impact wellness when contrasted with either method of preparing alone. Different reviews have demonstrated that simultaneous preparation has no inhibitory impact on the improvement of quality and perseverance. Strength and endurance adaptations. Strength and endurance training regimes represent and distinctly different adaptive responses when performed individually. Typically, quality preparing programs include expansive muscle gathering initiation of high-resistance low-reiteration activities to build the capacity of skeletal muscle. Conversely, perseverance preparing is characterized as rehashed sub-maximal compressions with heaps of low resistance. When performed freely, these two types of preparation incite generally, inverse physiological adjustments inside the muscle. The adjustment to preparing that the muscle continues is particular to the preparation boost. At last, quality preparation upgrades drive the generation of the skeletal muscles prepared. In this review, an endeavor is made to discover the simultaneous quality and perseverance in preparing for Muscular quality continuance.

Methodology

The preparation time frame and the trial bunches experienced their individual preparation program. Test aggregates experimental gathering - I quality preparing before perseverance preparing, exploratory gathering - II

quality preparing after continuance preparing and bunch - III went about as a control assemble, experienced their separate preparing program three days for every week for twelve weeks. Every day the preparation timetable was led to just a night session that went on for 120 minutes. Earlier and after each instructional course subjects of exploratory gatherings had 10 minutes of warm-up and 10 minutes of warm-down activities including running, portability, and extending workout. The quality continuance was measured by the twisted knee sit-ups test and the unit of estimation was scored in several sit-ups played out by the subjects.

Table-(A) demonstrates the dissected information on Muscular Strength Endurance. The pre-test method for Muscular Strength Endurance was 34.30 for trial amass I, 34.10 for exploratory gathering II, and 33.90 for control assemble. They got an "F" proportion of 0.14 was lesser than the table F-proportion of 3.35. Consequently, the pre-test was at 0.05 level of certainty for the degrees of flexibility 2 and 27. The post-test method for Muscular Strength Endurance was 41.50 for trial amass I, 36.20 for trial bunch II, and 35.20 for control aggregate. They got an "F" proportion of 63.36 was higher than the table F-proportion of 3.35. Consequently, the post-test was huge at a 0.05 level of certainty for the degrees of opportunity 2 and 27. The balanced post-test method for Muscular Strength Endurance was 42.34 for exploratory gathering I, 36.20 for and trial bunch II, and 34.36 for the control aggregate. They got an "F" proportion of 264.78 was higher than the table F-proportion of 3.37. Consequently, the balanced post-test was critical at 0.05 level of certainty for the degrees of flexibility 2 and 26. Since, three gatherings were looked at, at whatever point they got "F" the proportion for the balanced post-test was found to be significant, the Scheffe's test to find out the paired mean differences was presented in Table-(B).

Analysis of covariance of pre-test post-test and adjusted post-test on muscular strength endurance of experimental group I experimental group II and control group (Scores in numbers)

Test	**Exp.Group 1**	**Exp. Group II**	**Control Group**	**SV**	**SS**	**df**	**MS**	**F Value**
Pretest Mean	34.30	34.10	33.90	Between	0.80	2	0.40	0.14
S.D.	1.73	1.58	1.51	Within	77.90	27	2.89	
Post-test Mean	41.50	36.20	35.20	Between	284.60	2	142.30	63.36
S.D.	1.43	1.54	1.25	Within	59.70	27	2.21	
Adjusted Post-test Mean	42.34	36.20	34.36	Between	258.92	2	128.96	264.78
				Within	12.71	26	0.49	

*Significant at .05 level of confidence.
(The table values required for significance at .05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively).

Table -A

Scheffe's post hoc test-mean differences in muscular strength endurance among three groups. (Scores in numbers)				
Experimental Group I	**Experimental Group II**	**Control Group**	Mean Differences	Confidence Interval Value
41.34	36.20	--	5.14*	0.18
42.34	--	34.36	7.95*	0.18
--	36.20	34.36	1.84*	0.18
*Significant at .05 level of confidence.				

Table - B

Table-(B) posthoc test comes about. The requested balanced final mean distinction for Muscular Strength Endurance of test gatherings I, II, and control gathering were tried for importance at 0.05 level of certainty against classified interim esteem. The mean contrasts between test assemble I and test aggregate II, exploratory gathering I and control amass and test bunch II and control gathering were 5.14, 7.95, and 1.84 separately and it supposedly was more noteworthy than the classified interim estimation of 0.18. Thus every one of the examinations was huge.

The most vital purpose behind checking quality execution is to aid the assessment and movement of resistance-preparing programs. The measure of quality improvement relies on upon the underlying level of strong wellness, practice remedy, time accessible, and targets of the program. Standard appraisal of solid quality empowers legitimate assessment of the practice of medicine and adjustments when proper. The rate of quality increment contrasts impressively amongst untrained and prepared people, with prepared people indicating much slower rates of change. A general audit of around 150 reviews uncovered those increments in solid quality, by and large, are roughly 40% in untrained people, 20% in reasonably prepared people, 16% in prepared people, 10%in propelled people, and 2%in first-class people over periods going from 4 weeks to 2 years. Although the preparation projects, lengths, and testing strategies of these reviews contrasted extensively, this information demonstrates a specific incline towards slower rates of movement of quality advancement with preparing knowledge. Performing practices that include a low number of reiterations on a heap that is of high resistance adequately expands quality. (Dudley et al., 1985; Sale et al., 1990) It is of significance that competitors have elevated amounts of quality as well as perseverance. Hence many competitors' preparation programs include synchronous quality and perseverance preparation. Various reviews have been directed to research the conceivable obstruction impacts of performing quality preparation and continuance preparation simultaneously. Most have demonstrated that simultaneous quality and continuance preparing does in truth affect the advancement of quality or drive creation. Nelson (1990) directed a review on subjects in which one gathering; quality prepared 4 days/wk for 20 weeks while another gathering played out a similar routine and additionally performed perseverance on that day. The outcomes demonstrated that albeit both gatherings indicated increments in constrain generation, the quality preparing bunch indicated more prominent upgrades. Similar outcomes were found by Kraemer et al. (1995). Subjects in both the quality and simultaneous gathering demonstrated increments in muscle quality, however, the quality just gathering indicated essentially more prominent increments than that of the simultaneous gathering. In addition, in a 10-week think about by Hickson et al. (1980), subjects in both the quality and simultaneous gatherings demonstrated increments in constrain generation. Be that as it may, while the quality gathering expanded compel for the whole 10 weeks, the simultaneous gathering showed a lessening in the most recent 2 weeks of the preparation program. These reviews display that preparation simultaneously for quality and perseverance affects the improvement of quality. Dudley et al. (1985),) additionally

observed comparable outcomes in their reviews.

Table-(B) post-hoc test comes about. The requested balanced final mean distinction for Muscular Strength Endurance of trial gatherings I, II, and control gathering were tried for centrality at 0.05 level of certainty against private interim esteem. The mean contrasts between test bunch I and test assemble II, trial aggregate I and control amass, and test gather II and control gathering was 5.14, 7.95, and 1.84 separately and it apparently was more noteworthy than the private interim estimation of 0.18. Consequently, every one of the examinations was huge.

Conclusion:

The simultaneous quality perseverance preparing has delivered critical change on quality continuance more noteworthy than control gathering of Middle-Distance Athletes men. Quality perseverance exceedingly supported to quality preparing before continuance preparing more prominent than quality preparing after continuance preparing and control gathering to Middle Distance Athletes Men. Quality preparing after perseverance preparing likewise creates a little impact on strong quality continuance when contrast and control group

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Combined Effect of Plyometric and Mobility Training On Selected Physical Variables among College Women Players of Osmania University Hyderabad

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Abstract

The purpose of the study was to find out the effect of combined effect of plyometric and mobility training on selected physical variables among college women players. To achieve this purpose, forty five women players in the age group of 18 to 23 years from various department of Osmania University, Hyderabad during year 2022-2023 were selected as subjects at random from the total population of 90 students. The selected forty five subjects were divided into three equal groups of fifteen each as two experimental groups and one control group, in which group – I (n=15) underwent plyometric training for three days per week for six weeks, group – II (n=15) underwent the combination of mobility and plyometric training for three days per week for six weeks and group – III (n=15) acted as control who are not participate any training apart from their regular activities. The selected criterion variables such as abdominal strength, speed, leg explosive power and flexibility were assessed before and after the training period. The collected data were statistically analyzed by using Analysis of Covariance (ANCOVA) and Scheffe's Post-Hoc Test. From the results of the study it was found that there was a significant difference when compared with the control group.

Introduction

In sports the word "Training" is generally understood to be a synonym of doing physical exercises. In a narrow sense, training is doing physical exercises for the improvement of performance. Plyometric is a popular training technique used by many coaches today. It has been tested as a way to bridge the gap between sheer strength and power. Plyometric training is a method of developing explosive power and ultimately, improving athletic performance. Plyometric exercises include jumps, hops, skips, bounds and throws

Mobility, or joint mobility, is the ability to move a limb through the full range of motion–with control. Mobility is based on voluntary movement while flexibility involves static holds and is often dependent upon gravity or passive forces. We use "mobility" to express how well you can move through the appropriate functional range of motion for a joint within a given movement pattern.

Methodology

To achieve this purpose, forty five women players in the age group of 18 to 23 years from various departments of Osmania University, Hyderabad during the year 2022 -23 were selected as subjects at random from the total population of 90 students. The selected forty five subjects were divided into three equal groups of fifteen each as two experimental groups and one control group, in which group – I (n=15) underwent plyometric training for three days per week for six weeks, group – II (n=15) underwent the combination of mobility and plyometric training for three days per week for six weeks and group – III (n=15) acted as control who are not participate any training apart from their regular activities.

Analysis of Data

The data collected prior to and after the experimental periods on abdominal strength, leg explosive power, speed and flexibility on combined of mobility and plyometric training group,plyometric training and control group were analyzed and presented in the following table -I.

Table-I: Analysis of covariance and 'f' ratio for abdominal strength, speed, leg explosive power and flexibility for combined of mobility and plyometric training, plyometric training and control group

Variable Name	Group Name	Control Group	Plyometric Group	Combined Group	'F' Ratio
Abdominal strength (in Numbers)	**Pre-test Mean ± S.D**	37.13 ± 1.15	37.2 ± 1.25	37.2 ± 1.21	0.001
	Post-test Mean ± S.D.	37.32 ± 1.16	39.13 ± 1.31	42.21 ±1.36	3.935*
	Adj. Post-test Mean ± S.D.	37.50	39.17	42.19	23.250*
Leg explosive power (in Meters)	**Pre-test Mean ± S.D**	1.816 ± 0.12	1.818 ± 0.135	1.822 ± 0.13	.003
	Post-test Mean ± S.D.	1.819 ± 0.12	1.978 ± 0.22	2.141 ± 0.31	3.034*
	Adj. Post-test Mean ± S.D.	1.822	1.979	2.139	3.265*
Speed (in Seconds)	**Pre-test Mean ± S.D**	7.9 ± 0.008	7.89 ± 0.0089	7.9 ± 0.0083	.006
	Post-test Mean ± S.D.	7.88 ± 0.0081	7.59 ± 0.0092	7.48 ± 0.0097	6.766*
	Adj. Post-test Mean ± S.D.	7.89	7.589	7.492	15.095*
Flexibility(in Centimeters)	**Pre-test Mean ± S.D**	5.91 ± 0.71	5.9 ± 0.72	5.9± 0.71	.001
	Post-test Mean ± S.D.	5.89 ± 0.70	7.19 ± 0.92	8.42 ± 0.97	3.657*
	Adj. Post-test Mean ± S.D.	5.912	7.187	8.439	29.012*

* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively). Further to determine which of the paired means has a significant improvement, Scheffẽ's *S* test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table – II: Scheffẽ S Test for the Difference Between the Adjusted Post-Test Mean of Abdominal Strength, Leg Explosive Power, Speed and Flexibility

Adjusted Post-test Mean of Abdominal Strength				
Combined Group	**Plyometric Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
42.19		37.50	4.69*	0.601
42.19	39.17		3.02	0.601
	39.17	37.50	1.67*.	0.601
Leg Explosive Power				
2.139		1.822	0.317*	0.037
2.139	1.979		0.16*	0.037
	1.979	1.822	0.157*	0.037
Speed				
7.492		7.89	0.398*	0.27

7.492	7.589		0.097	0.27
	7.589	7.89	0.301*	0.27
Flexibility				
8.439		5.912	2.527*	0.037
8.439	7.187		1.252*	0.037
	7.187	5.912	1.275*	0.037

* Significant at 0.05 level of confidence.

Results

The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since there was three groups were involved in this study, the Scheffé *S* test was used as pos-hoc test and it was shown in Table - II.

Table - I showed that the results of the study there was a significant difference between combined of mobility and plyometric training, plyometric training and control group abdominal strength, speed, leg explosive power and flexibility. Further the results of the study showed that there was a significant improvement on abdominal strength due to six weeks of programme. However the improvement was in favour of experimental group. The results of the study also shown that there was a significant difference between combined of mobility and plyometric training, plyometric training and control group on abdominal strength, speed, leg explosive power and flexibility.

Conclusions

From the analysis of the data, the following conclusions were drawn.

1. There was a significant improvement due to the plyometric training and combination of mobility and plyometric training on abdominal strength, flexibility, explosive power and speed when compared with the control group.
2. The improvement in criterion variable such as abdominal strength was higher for the combination of mobility and plyometric group than the plyometric training group.
3. The improvement in flexibility was higher for combination of mobility and plyometric group when compared with the plyometric training group and control group.
4. Significant improvements noticed on selected motor ability components such as abdominal strength, flexibility, leg explosive power and speed due to combination of mobility and plyometric training and plyometric training.

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Role of Yoga in Personality Development

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Introduction

YOGA – Yoga is a type of exercise in which you move our body into various positions in order to become more fit and flexible to improve your breathing and to relax your mind.

- Kundalini yoga was founded by **Yogiraj Vethatiri Maharshi** is an integrated system of simplified physical exercises, meditation and steady introspection, which leads the individual to self-realization.
- Yoga aims at bringing good health and equanimity of mind to its practitioners at all times under various pressures and tensions. It develops physical, mental, intellectual, emotional and spiritual components, thus building up a well-rounded organic personality.
- Yoga is derived from the Sanskrit word **Yuj** which means to link or join, bringing harmony to body –mind relationship.
- The equipoise from yogic exercises enables the practitioner to see the problem as it is in all its manifestations. This openness of mind allows them to receive and reconcile contradictory ideas and suggestions in solving the problem.
- The physical exercise is a part of yoga enables the individual to maintain his health by going to its roots. Yoga develops physical, mental, intellectual, emotional and spiritual components, thus building up a well-rounded organic personality.

Physical Level: Makes the bodywork more efficiently by directing the energies in the most controlled fashion.
Mental level: Enables to systematically sharpen and sensitive their emotions.
Spiritual level: It helps to move towards the casual state of the mind by introspection where in the subtile layers of mind unfold themselves and the inner dimensions of personality open out.

- The study was undertaken to find the effect simplified kundalini yoga on the personality of students and also to find the effect of simplified kundalini yoga on the academic achievement of its practitioners
- Yoga has a systematic series of physical exercises, suitable for all climates, and men, women and children of all ages.
- Research indicates through stress can even contribute to the development of major illnesses such as heart disease, depression, and obesity or exacerbate existing health issues.
- They desire to please their parents by their “appropriate” and “socially right” behaviour.
- Children actively participate in their own development process. They dislike upsetting their parents and being the reason for adding to existing parental stress.
- Moreover, children and young people interact with everyday life situations with world views that could be different from those of adults.

- The ancient practice of yoga will help children and young people cope with stress and contribute positively to mental health.
- In a recent book of yoga education in India, the author claims that “in a nutshell, yoga is a powerful medium for developing the personality of children and making them capable of facing the present-day challenges problems”.
- One of the prominent researchers, Shirley Telles, concludes that yoga improves children’s physical and mental well-being.
- Thus, yoga is an important life skill tool for children and young people to cope with stress and self-regulation in a life-long prospective.
- As researchers and responsible citizens concerned with children and young people’s healthy development.
- We would like to provide the arguments for choosing yoga. It can be an appropriate scientific intervention in childhood and youth as a stress alleviator, especially in the school setting.
- Meditation is done in simplified kundalini yoga by raising the kundalini shakthi from mooladhara to agnya chakra

Conclusion

With dynamic changes taking place in all spheres, adolescents in the coming decades will face new and more intense tensions. The practice of simplified kundalini yoga will enable them to unfold a greater and more powerful consciousness through simple physical exercises, meditation, and introspection. Yoga emphasizes the skill to pacify the mind that brings the capacity to detach completely.

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The Mental Skills for Achieving Optimum Performance in Sports Persons

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Abstract

Mind Training Technique is the segment of sports psychology that concentrates specifically on helping athletes break through the mental barriers that are keeping them from performing up to their peak potential. By focusing on the mental skills needed to be successful in any sporting competition, mind training technique seeks to achieve the overall goal of performance improvement. Some athletes find themselves fully prepared physically to get back into competition and practice, but mentally some scars remain. Injury can hurt confidence, generate doubt during competition, and cause a lack of focus. Mind Training Technique is to identify and enter the "mental zone" of a sportsperson. The overall aim of these techniques is to help athletes by developing foundational mental skills that can help to achieve optimum sport performance. All great coaches employ game plans, race strategies, and course management skills to help athletes mentally prepare for individual and team sports competition. This is an area beyond developing basic mental skills in which a mental coach helps athletes and teams.

Introduction

Sports psychology is essentially the study of how the mind affects physical activity and athletic performance. According to the American Psychological Association, “sports psychology addresses the interactions between psychology and sport performance, including the psychological aspects of optimal athletic performance, the psychological care and well-being of athletes, coaches, and sport organizations, and the connection between physical and psychological functioning.” Sports psychology is the sport science that seeks to understand psychological and mental factors that affect performance in sports, physical activity and exercise, and apply these to enhance individual and team performance. Sports psychology is now so important to performance at the top level of sport that most elite sporting clubs and individuals employ sports Psychologists to work with them.

Sports psychology

There are four major performance skills for all elite sportsmen and women, these being technical, physical, tactical and mental. The latter skill is one that can make the crucial difference for athletes performing consistently to their abilities. Sport psychology has played a significant role in the understanding, training and ultimately the use of mental skills for peak performance.

- John Buchanan, former coach of the Australian cricket team Sport psychology gives me an advantage over myself that no physical training can ever provide. Sport psychology allows the athlete to use all of their mental strengths. This gives them a huge advantage over their opponents, as usually their biggest opponent is themselves.

- Ian Thorpe, former world and Olympic swimming champion

The IAAF (International Association of Athletics Federations) states: Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete‟s holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice.

Sports psychology and mental toughness

The increased stress of competitions can cause athletes to react both physically and mentally in a manner that can negatively affect their performance abilities. They may become tense, their heart rates race, they break into a cold sweat, they worry about the outcome of the competition, they find it hard to concentrate on the task in hand.

This has led coaches to take an increasing interest in the field of sport psychology and in particular in the area of competitive anxiety. That interest has focused on techniques that athletes can use in the competitive situation to maintain control and optimise their performance. Once learned, these techniques allow the athlete to relax and to focus his/her attention in a positive manner on the task of preparing for and participating in competition. Psychology is another weapon in the athlete's armoury in gaining the winning edge.

Most top athletes and coaches believe that psychological factors play as crucial a role as physical attributes and learned skills in the make-up of champions. When physical skills are evenly matched – as they tend to be in competitive sport – the competitor with greater control over his or her mind will usually emerge as the victor. Mental strength is not going to compensate for lack of skill, but in close contests it can make the difference between winning and losing.

A key question for sport and exercise psychologists is whether champions have simply inherited the dominant psychological traits necessary for success or whether mental toughness can be acquired through training and experience. Recent research has attempted to explore the concept of mental toughness in sport more thoroughly, and it appears that, while some people are naturally more tough-minded than others, people can be „toughened-up‟ with the correct approach to training.

In the scientific and sport community, mental toughness is viewed as one of the most important attributes that will lead to a successful athletic performance. At the highest level it is often the mental game which separates the elite performers from the good performers. In sport there has been very little scientific attention focusing around mental toughness and this is seen as very surprising considering that the term has been widely used over the last twenty years.

Mental toughness is having the natural or developed psychological edge that enables you to:

- Generally, cope better than your opponents with the many demands (competition, training, life style) that sport places on the performer.
- Specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure”

Mentally tough athlete is likely to:

- Achieve relatively consistent performances regardless of situational factors;
- Retain a confident, positive, optimistic outlook, even when things are not going well, and not „choke" under pressure;
- Deal with distractions without letting them interfere with optimal focus;
- Tolerate pain and discomfort;
- Remain persistent when the „going gets tough";
- Have the resilience to bounce back from disappointments.

Mind training techniques/skills

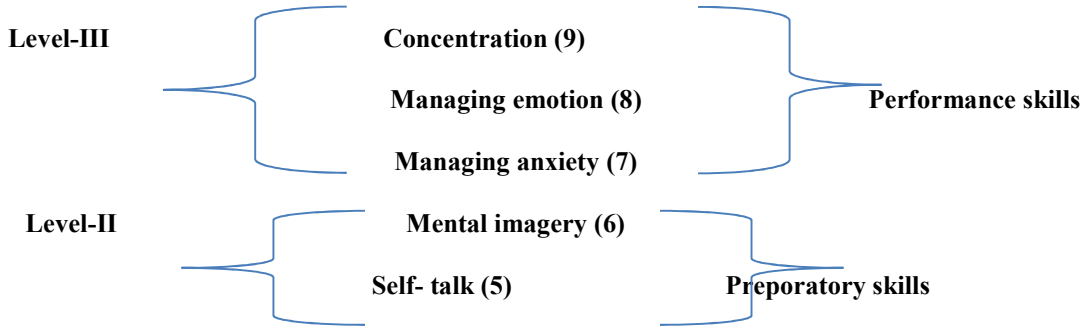
The field of sports psychology has contributed to the improvement of coaching and playing at all levels of the game. At higher levels of competition, when physical skills and tactics of players are more comparable, psychological skills take on even greater importance. However, despite widespread agreement regarding the importance of psychological factors such as intensity, confidence, and concentration to successful play, coaches often fail to make mental skills training part of the daily practice schedule. There are many reasons for this, including lack of sports psychology knowledge, misconceptions about mental skills, perceived lack of time, and personal coaching habits. However, mental skills should not be treated casually. Rather, just as technique, tactics, and physical skills are addressed on a daily basis, mental skills training needs to be integrated into the training schedule and practiced on a regular basis.

Mental skills are internal capabilities that help athletes control their minds efficiently and consistently as they execute sport-related goals. Mental skills training provides the methods and techniques to not only develop skills such as concentration and positive body language, but also to foster personal characteristics such as self-esteem and positive competitive skills and behaviors.

Mental skills are procedures that help athletes control their minds efficiently and consistently as they execute sport-related goals. This not only involves developing skills such as concentration and stress control, but it also includes efforts to influence personal characteristics such as self-esteem and sportsmanship.

The performance pyramid

Although each of the skills is important, its primary importance will occur during one of three phases: long-term development, immediate preparation for performance, and during performance itself.



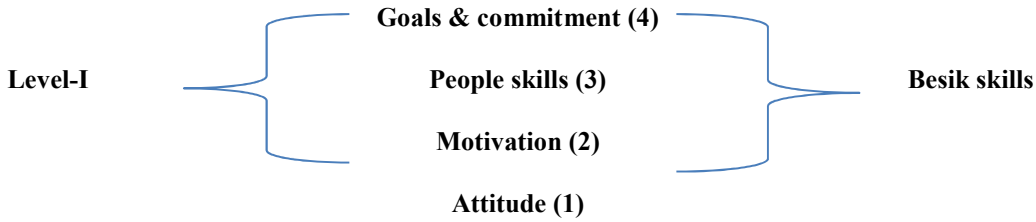


Fig 1- THE PERFORMANCE PYRAMID

The pyramid represents the relationship of the nine skills to one another. Each of the higher levels incorporates and is based upon the skills of the preceding levels.

Level I –

These mental skills constitute a broad base for attaining long-term goals, learning, and sustaining daily practice.

They are needed on a day-by-day basis for long periods of time, often months and years.

Level II –

These skills are used immediately before performance to prepare for performance. They may be used just before competition begins, or immediately before a specific performance action, such as golf shot or a free throws in basketball.

Level III –

These skills are used during actual performance behavior.

Evaluation of mind skills/techniques

Winning is one of the objectives in sports, and winning requires consistent performance at a high level. One way to better ensure consistent performance is to individualize the mental skills training program to the athlete. Individualizing a mental skills training program can be accomplished by evaluating an athlete‟s mental skills set within the framework developed.

This analysis and evaluation of a player‟s mental skills set can prove to be difficult due to the many variables that affect on-court performance. For example, Loehr states that it is important to note that emotional problems during match play can just as readily be caused by physical deficiencies as by emotional ones. Lack of physical recovery due to inadequate sleep, rest, nutrition, or hydration can completely derail a player‟s ability to summon the right emotions at the right time. This is particularly evident in player breakdowns. Just as poor fitness can lead to mental and emotional problems, excessive anger, frustration, or nerves can undermine both mental focus and biomechanical efficiency. Due to these many factors, coaches should take great care when identifying and evaluating a players mental capacities and be aware of the integrated nature of performance.

Conclusion

The above represents a very brief overview of some of the techniques used by athletes to improve their mental skills.Like any skill these require practice and athletes should be encouraged to spend up to an hour on developing

these skills. Some excellent examples of mental skills training techniques are provided in the additional reading and web sites listed below and in the Science in coaching module outline.

One useful aid to track mental skills development is to include a log of mental skills training in the athlete‟s general training diary. Also, when implementing mental skills training, careful consideration should be given to the individual. For example, some individuals may not be good imagers and thus will require more general imagery training. Trying to encourage stereotypical rugby players to learn and apply relaxation techniques may not be well received. For any mental skills training to be effective, it must be accepted by the athlete (and the coach) as a useful tool and it is this acceptance which is often the most difficult to achieve.

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A Comparative Study on Speed and Endurance among Kabaddi and Kho Kho Players of Osmania University Telangana State.

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Abstract:

The purpose of the study is to compare Speed and Endurance among Kabaddi and Kho kho players of Osmania University, Telangana State. For this study 30 Male Kabaddi players and 30 Male Kho kho players selected as subjects which were selected randomly from Osmania University, Telangana State. And their age ranged from 18 years to 22 years. The statistical analysis of the results obtained from the collected data of kabaddi and kho kho players of Osmania University. In order to find out the statistical difference among kabaddi and kho kho players. The study under report has scientifically examined the physical fitness variables pertinent to speed and endurance. A trained individual is in a better state of physical fitness than the person who follows a sedentary, inactive life. It is concluded that the physical fitness plays a vital role on the performance of the players. Physical activity can act as an antidote to some kinds of fatigue. Youngsters will be harmed through sustained exercise -if they are fit, their physical endurance is great and the exercise will be conductive to good health. The study concluded that kho kho players have higher speed and endurance than the kabaddi players of Osmania University.

Introduction:

Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity. Physical fitness is an important component of health. Physical fitness is the ability to function efficiently and effectively is to enjoy leisure, to be healthy, to resist disease and to cope with emergency situations. The importance of Physical fitness is linked to a higher quality of life as well as academic achievements. It is well documented that regular physical activity in childhood and adolescence improve speed, strength and endurance, Not only that but also health build, strong bones, muscles and control weights, reduce anxiety, stress and increases self esteem. Health related components of physical fitness Include body composition, cardio vascular fitness, flexibility, muscular endurance and strength. Skill related components include agility, balance, coordination, power reaction time and speed.

The relative importance of each of the components varies for each sport. Physical fitness is not only sport specific it may also be position specific, combined good health and physical development. The object of any program of physical fitness is to maximize any individual's health, speed, strength, endurance and skill relative to age, sex, body build and physiology. These ends can only be realized through conscientious regulation of exercise, rest, diet and periodic medical examinations. Exercise should be regular and vigorous, but begun slowly and only gradually increased in strenuousness. Proper Exercise methods include jogging, cycling and the use of body building

machines. It is more important that periods of sleep be regular and restful than that they extend any fixed number of hours.

Purpose of the study:

The study is to determine the Speed and Endurance among kabaddi and kho kho players of Osmania University, Telangana State.

Hypotheses:

2. There may not be any significant difference among kabaddi and kho kho players of Osmania University in relation to their Speed.
3. There may not be any significant difference among kabaddi and kho kho players of Osmania University in relation to their Endurance.

Methodology:

Selection of sample:

The study was formulated based on the simple random sampling. The samples were collected from the 30 Male Kabaddi players and 30 Male Kho kho players from Osmania University, Telangana State. And their age ranged from 18 years to 22 years.

S.No.	Category of the subjects	No. of Subjects
1.	Kabaddi players	30
2.	Kho kho players	30

Selections of variables and it's criterion measures:

S.No.	Variables	Tests	Unit of Measurement
1.	Speed	50m Run Test	In seconds
2.	Endurance	Cooper 12 min run or walk Test	Distance covered in meters

Results & Discussions:

The statistical analysis of the results obtained from the collected data of kabaddi and kho kho players of Osmania University. In order to find out the statistical difference among kabaddi and kho kho players.

Table 1 showing the mean values, standard deviation, t value and p value among kabaddi and kho kho players of Osmania University in relation to their Speed (50m run Test).

S.No.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Kabaddi players	30	7.48	0.51	2.719	0.01
2.	Kho kho players	30	6.14	0.36		

The mean of the kabaddi and kho kho players are 7.48 and 6.14 respectively. And the standard deviation score of the kabaddi and kho kho players are 0.51 and 0.36 respectively. And calculated 't' value is 2.719. It reveals that there was significant difference found on Speed among kabaddi and kho kho players of Osmania University.

Table 2 showing the mean values, standard deviation, t value and p value among kabaddi and kho kho players of Osmania University in relation to their Endurance (Cooper 12 min run or walk Test).

S.N0.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Kabaddi players	30	2093	297.31	3.971	0.01
2.	Kho kho players	30	2371	242.46		

The mean of the kabaddi and kho kho players are 2093 and 2371 respectively. And the standard deviation score of the kabaddi and kho kho players are 297.31 and 242.46 respectively. And calculated 't' value is 3.971. It reveals that there was significant difference found on Endurance among kabaddi and kho kho players of Osmania University.

Conclusion:

The study under report has scientifically examined the physical fitness variables pertinent to speed and endurance. A trained individual is in a better state of physical fitness than the person who follows a sedentary, inactive life. It is concluded that the physical fitness plays a vital role on the performance of the players. Physical activity can act as an antidote to some kinds of fatigue. Youngsters will be harmed through sustained exercise -if they are fit, their physical endurance is great and the exercise will be conductive to good health. The study concluded that kho kho players have higher speed and endurance than the kabaddi players of Osmania University.

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Effect of aerobic circuit training and parcours training on selected physical and physiological variables among College men students

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Abstract

Training is a program of exercise designed to improve the skills and increase the energy capacities of an athlete for a particular. The training is used in its broad sense and its meaning varies with the field of application. In sports, the word training is generally understood to be a synonym of doing physical exercises. In its narrow sense, training is doing physical exercises for the improvement of performance. Training is a systematic process of repetitive and progressive exercise or work involving also learning process and acclimatization. Training improves the functioning of the circulatory, respiratory and the muscle systems, while practice in largely aimed at improving the control of muscular activity by the nervous system. Systematic nature of the training process is reflected adequately by the fact that the various means and methods, load dynamics, training tasks etcetera are all planned in order to achieve short or long term goals, keeping in view the interrelationship of various training elements, cyclic nature of performance developments and long term goal of sports training In this chapter, the method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented. The effect of aerobic circuit training and parcours training on VO2 Max is presented in Table XVII. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 32.45 was greater than the required table F value to be significant at 0.05 levels. It was concluded that comparing between treatment groups, there was significant difference between Aerobic Circuit training and Parcours training

Key Words: Aerobic Circuit Training, Parcours Training

Introduction

Training is the basic form of preparation of sportsmen. Training has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years. Training is widely used in sports The Complex nature of training involving physical exercises along with other means becomes obvious when one looks at the training of advanced sports persons. Training is done for improving performance. The performance, as any other type of human performance, is not the product of one single system or aspect of human personality. On the contrary, it is the product of the total personality of the person. The personality of a person has several dimensions e.g. physical, physiological, and social in order to improve performance the social capacities of the person also have to be improved in addition to the physical and physiological ones. In other words the total personality of a sportsman has to be improved in order to

improve his performance. Training therefore, directly and indirectly aims at improving the personality of the person. No wonder, therefore training is an educational pedagogical process. Training is a systematic process extending over a long period. For best results the system of training has to be based and conducted on scientific facts and lines

Methodology

The method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented.

Table – I: Variables and Tests

Serial No.	Variables	Tests	Unit of measurements
1.	Leg explosive power	Standing broad jump	Meters
2.	Speed	50 meters run	Seconds
3.	Agility	Shuttle run (4x30 feet)	Seconds
4.	Strength endurance	Sit-ups (bent knee)	Seconds
5.	Flexibility	Modified sit and reach test	Meters
6.	Resting heart rate	Manual method	Seconds
7.	Cardio-respiratory endurance	12 minutes run/walk	Seconds
8.	Maximum oxygen consumption		Seconds

The method adopted for the selection of subjects, variables used, experimental design, training programme, procedures for test administration and methods employed for statistical treatment of data have been explained. A flow chart on methodology used in the study has been presented.

Selection of Subjects

Since the purpose of the study was to find out the effect of Aerobic circuit training and parcours training on physical and physiological variables on college men, it was decided to select untrained men students who were not participating in any of the games or sports or in any special training or coaching programme. However, they were allowed to participate in their routine physical education classes in the college. Since, during the period of training the subjects were susceptible for changes due to growth; it was decided to have one control group for the study. For this purpose, thirty men students, free from deformities and ailments, were selected at random by lot from **MITS , College Madanapalle, Andhra Pradesh**. The age of the subjects ranged from 20 to 25 years.

The subjects were randomly assigned equally to one of the three groups in which group I acted as control (n=10), group II underwent circuit training (n=10), and group III underwent parcours training (n=10). The subjects were free to withdraw their consent, in case they felt any discomfort during the period of training. But there were no dropouts in the study. A qualified physician examined the subjects medically and declared that they were fit for the study. All the subjects had a similar academic work and regular activities in accordance with the requirements of the college curriculum. The subjects in the control group were not engaged in any activity other than the regular curriculum during this training period.

Aerobic Circuit Training

In circuit training, a subject moved from one station to another and performed the prescribed exercise with the fixed duration at each station. The time was increased from Fifteen seconds to fourth seconds per station after six weeks training. It was emphasized that the intensity of the exercise was kept at the maximum possible level throughout the total time prescribed. The circuit was repeated thrice daily.

Exercises at Aerobic Circuit Stations

The exercises were performed at different circuit stations.

1. Jumping jacks
2. Step test
3. Rope skipping
4. High Knee Action
5. Push Ups
6. Sit Ups
7. Shuttle Run
8. Squat thrust

Parcours Training

Parcours training is a new concept developed in Europe and adopted recently in United States and Canada. It consists of a series of stations set up over a one to two and half km path, to provide exercise circuit for individuals. Parcours is a technique for improving cardio respiratory endurance that basically combines continuous training and circuit training. This technique involves jogging a short distance from station to station and performing a designated exercise at each station according to guidelines and directions provided on an instruction board located at that station. Parcours circuits provide an excellent means for gaining some aerobic benefits while incorporating some of the benefits of calisthenics, besides promoting muscular and cardio respiratory endurance, continuous training aids in caloric expenditure, a key to proper weight maintenance (Prentice, 1994).

Exercise at Parcours Station

The following were the exercises performed at different parcours stations:

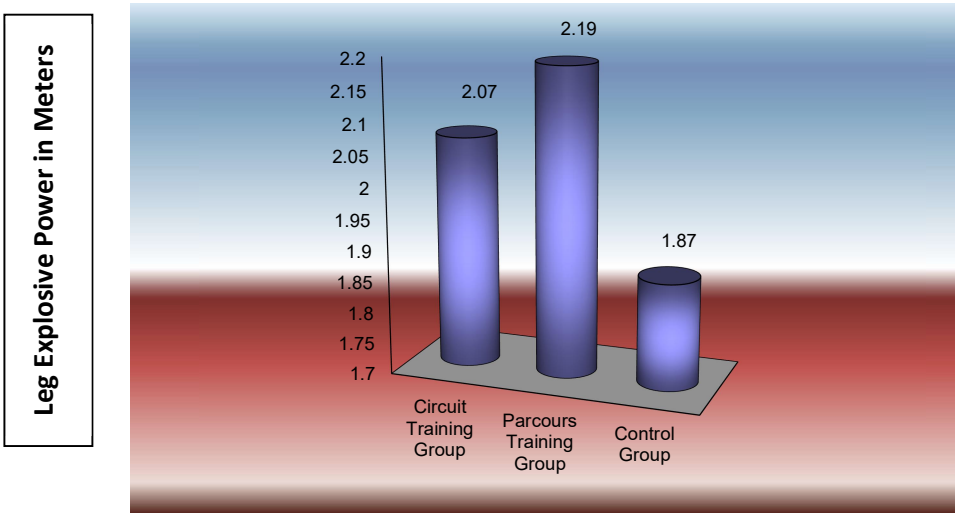
1. Jumping Jack
2. Step up
3. Rope skipping
4. Jumping on and off the bench
5. Push up
6. Sit up
7. Shuttle Run
8. Half squat with weights

Scheffe's Confidence Interval Test Scores on Leg Explosive Power

MEANS				Required C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
2.07	2.19		0.12*	0.05
2.07		1.87	0.20*	0.05
	2.19	1.87	0.31*	0.05

* Significant

Bar Diagram on Ordered Adjusted Means on Leg Explosive Power

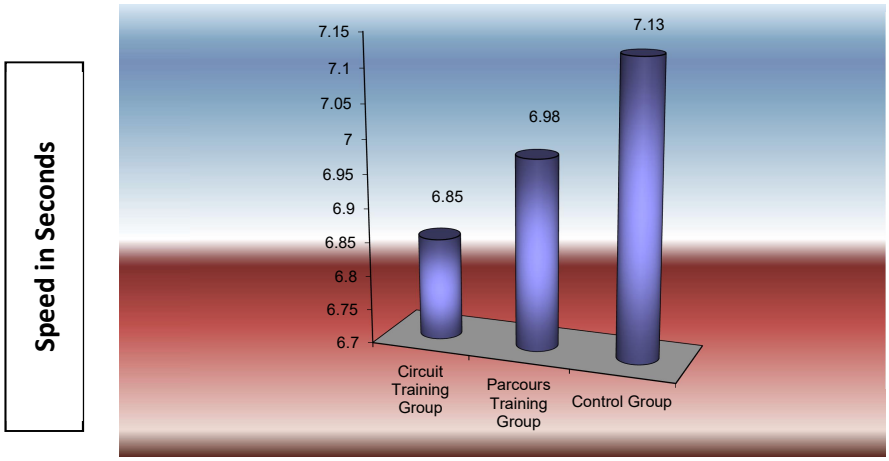


Scheffe's Confidence Interval Test Scores on Speed

MEANS				Required . C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
6.85	6.98		0.13*	0.06
6.85		7.13	0.28*	0.06
	6.98	7.13	0.15*	0.06

* Significant

Bar Diagram on Adjusted Means on Speed

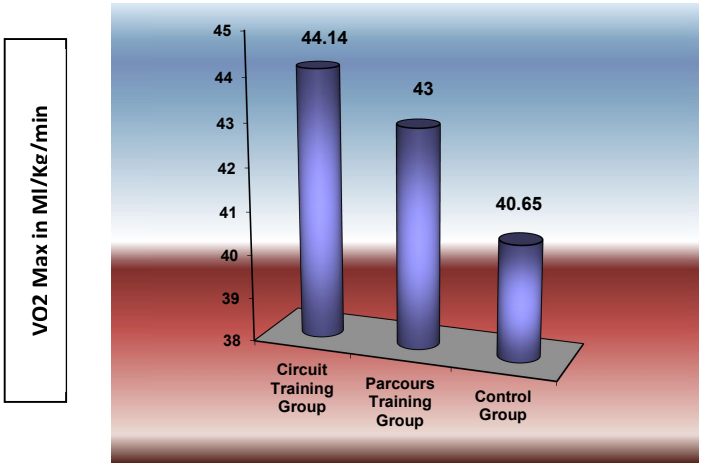


Scheffe's Confidence Interval Test Scores on VO_2 Max

MEANS				Required . C I
Circuit training Group	Parcours training Group	Control Group	Mean Difference	
44.14	43.00		1.14*	1.04
44.14		40.65	3.49*	1.04
	43.00	40.65	2.35*	1.04

* Significant

Bar Diagram on Ordered Adjusted Means on Vo_2 Max



Discussion and findings

That there would be no significant influence due to aerobic circuit training and parcours training on VO_2 max was accepted as there was significant influence due to aerobic circuit training and parcours training on VO_2 max. Further the hypothesis that there would be significant influence in VO_2 max between aerobic circuit training and parcours training was accepted as there was significant difference between aerobic circuit training and parcours training group

Conclusions

This research proved that Aerobic circuit training and parcours training improved physical fitness and physiological variables of college men. Hence, it was recommended to include these training methods for improving specified physical fitness and physiological variables of college men.

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Sports Injuries among Sprinters of Telangana State – A Review

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Introduction:

Every day, a lot of people all over the world participate in games and sports activities or competitions. Participation in sports improves physical fitness and overall health and wellness. Games and sports can also result in injuries, some minor, some serious and still other in life long medical problem. Sports injuries result from acute trauma or repetitive stress associated with athletic activities. Sports injuries can affect bones or soft tissue (ligaments, muscles, tendons). There are numerous sports injuries happened in the field of sports. It is very important for all coaches, trainers and players to know the causes symptoms, prevention and treatment for all these common injuries in order to avoid most of these types of injuries, also to update the poor training methods.

The lower leg complex (feet, ankles, plantarflexor, dorsiflexors- Figure 5.1) is the point of contact where the force generated from up the chain, is put into the ground. We talked about how have a weak/unstable ankles or feet will also cause energy leaks.

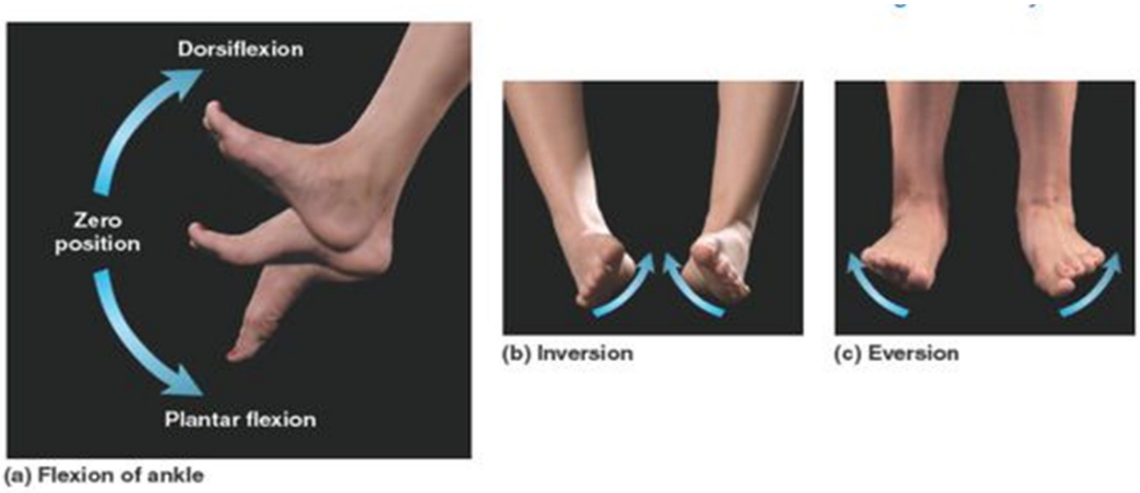

Figure: Feet, Ankles, Plantarflexor, Dorsiflexors injuries for sprinters

You don't want that great force created from your hips, glutes, hamstrings, and quads only to be lost at your ankles and feet. Elite sprinters often experience ground reaction forces of 3 times body weight and muscle forces 7 times body weight!

Typically, peak ground forces of ~600 pounds are generated in less than one-tenth of a second at sprint racing speeds. The forces on the arches of the feet and Achilles tendons are appreciably greater than the 600 lbs sprinters slap onto the track. Without the necessary muscle-tendon force production and transmission from the legs and feet to the ground, there is no speed.

Since the amount of muscle (and active muscle force) that can be packed into the arch is limited by its small size, the foot manages to generate the huge forces largely passively. This is accomplished with the ligaments that span the arch - the plantar fascia and deeper layers of springy material that connect the bottom of the heel to the ball of the foot. Can you see why you need a strong/stable lower leg complex! Increasing your lower leg strength and stability increases the potential to transfer those high forces from the hips into the ground.

Lower leg stiffness will enhance ground contact times, vertical impulses, activation and involvement from muscles up the chain, and elastic return. Ankle stiffness is also key for muscles up the chain to work optimally. For example, have instability in your ankle decreases the activity of the gluteus Maximus. So working on ankle stiffness will help your sprinting in a number of different ways. Now doing balance drills or band resisted ankle strengthening drills will NOT increase your ankle stiffness. You need to drills that stress that lower leg complex in a manner that will carry over to actual acceleration and sprinting.

Hamstrings Injuries on Sprinters

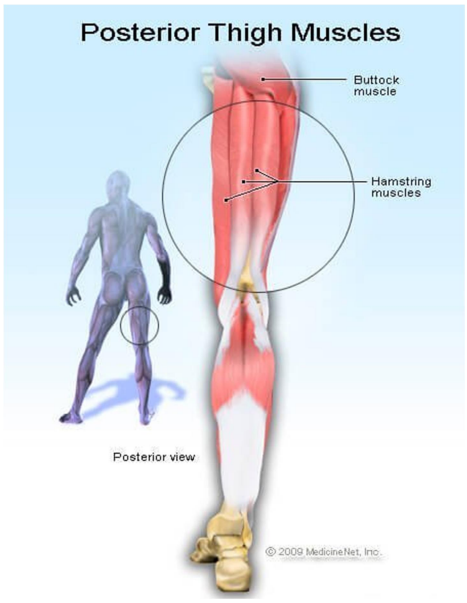

Figure Hamstrings Muscles Injury

Sprinters put extreme pressure on the body that has been a risk especially on hamstring muscles in higher degree of overlapping. Hamstring injuries are the most prevalent time-loss injuries in sprinting. In spite of unclear understanding between thigh and hamstring muscles especially flexion of knee and hip extension may cause to a small part or organ to hamstring incidence. In the competitive sprinting the gait cycle during swing phase mostly occurred hamstring strain.

As preview to relate literature hamstring injuries are in same condition and that certain types of injuries need prolonged rehabilitation and return to play. In some condition minor injury those involving central tendencies require prolonged time to return to track. The etiology of pain in emerging sprinters is usually significantly different from adults however potential causes of hamstring muscle tissue include muscle strains, muscle spasm, muscle weakness and muscle imbalances. These have been identified as the primary cause of the pain which the most sprinters have faced.

The management of hamstring injuries' goals when treating hamstring injuries are to achieve maximal reduction in pain intensity as quickly as possible, to rehabilitate every individual's muscle pain, to function your body for everyday activities, to facilitate the injured passage through the legal impediments rehabilitation. In current phenomena of sprint demand the condition of muscle ability need to try several treatments to determine what work best for them.

Shota Enoki etal (2021) studied Injuries in Collegiate Track and Field Jumping: A 2-Year Prospective Surveillance Study Athletes participating in track and field jumping events (long jump, triple jump, high jump, and pole vault) are exposed to ground-reaction forces on the takeoff leg that are several times their body weight. This can cause injuries specific to such activities. A total of 51 jumpers between April 2016 and March 2017 and 54 jumpers between April 2017 and March 2018 participated in this study. All athletes were from a single college in Japan. Baseline

information on athletes participating in the long jump, triple jump, high jump, and pole vault was collected at study enrollment. Practice and competition exposures were reported by the team trainer. Injury incidence was calculated as the number of injuries per 1000 athlete-exposures . A total of 147 injuries were reported among 16,998 exposures (8.65 injuries per 1000 AEs). The most common injury locations were the posterior thigh and lateral ankle (17.0%), followed by the posterior foot or toe (12.9%); the most frequent type of injury was strain/muscle rupture/tear (21.1%). The most common injury for long jumpers was ankle sprain (23.3%); for high jumpers, flexor hallucis longus tendinosis (15.8%); and for pole vaulters, hamstring strain (13.2%).

Methodology

The sample for the study consists 20 Sprinters of Telangana State between the age group of 20 to 22 Years.

Table 3.1: Table Showing the Sample of the study

Sl. No.	Game	No of subjects
1.	Sprinters (Boys 10+ Girls 10)	20
3.	Total subjects	20

The questionnaire were used in the Study.

Results and Discussion.

Table 1: Percentage of Injuries among Sprinters

lower extremities injuries(Hamstring strain, Knee ligament, Sprained Ankle, Achilles Tendon, Shin Bone, Patella dislocation, Heel Pain etc)	Upper Extremities(Rotator Cuff, elbow injury, Fractures in Hand)	Head and Neck	Spine
75	10	5	10

In Table No. 1 It is concluded that Sprinters has secured the Lower Extremities injuries are 75 %, upper extremities injuries are 10 %, Head and Neck Injuries are 5 %, and Spine 10%.

Conclusions:
It was concluded that Sprinters are more prone to lower extremities Injuries due to the High sprinting activity.

RECOMMENDATIONS

The following suggestions are made for the benefit of players, coach's academicians and sports scientists.

- The researcher makes a suggestion on the part of the coach to use the above said technique to assist recovery progression and performance enhancement in injured athletes.
- The study also helps the injured athletes, physical educationist, sports scientists etc for their ongoing activities.
- The study helps the physical educationist and coaches for selecting the best recovery techniques for injured athletes.
- The study also helps the physical educationists and coaches compass the knowledge of performance and recovery among injured athletes.
- The study also helps injured athletes and coaches to select recovery technique depending on type of injury.
- Muscle relaxation cannot be good cause stiff: run effortlessly and the results also will not ideal. So with mastering the technical movements, on the one hand, sprinters should increase strength training, and on the other hand, master relaxation techniques. Because, to a certain extent, themore relaxed energy recovery, the faster energy recovery, the faster the corresponding energy recovery will be and running speed will faster, so it corresponds to improve the running speed.

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Comparison of Athletic Ability among Chasers, Dodgers and All-rounder male Kho-Kho Players of Telangana State

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Introduction

Excellence in sports and sports competitions is not a normal phenomenon. One needs to train over years to learn Skills and perform at higher levels of competition. Superior performance in sports competitions also depends upon many factors. Generally classified, the aspects could be physical, mental, emotional and social. One of the importance aspects of sports performance is physical and motor characteristics and fitness. Athletic ability will be considered in relation to physical fitness, as the components involved in physical fitness like strength, endurance speed, flexibility etc. also involved in athletic ability. Kho-Kho, an indigenous game, is one such area which requires the players to have high levels of athletic ability, where some fundamental skills and feats are to be performed by every player. The performance of defensive and offensive skills undoubtedly demands the players to have a wide range of athletic abilities like strength, power, speed, coordination, balance and endurance. This study is carried out to the athletic ability among male Kho-Kho plays about their athletic abilities levels so that they can detect the weaknesses of their athletic ability fitness; and the coaches can help the athletes to obtain the peak athletic performance in their future competitions by adopting athletic ability fitness plans.

Statement of the Problem

The purpose of the study was to find the comparison of athletic ability among Chasers, Dodgers & All-rounder male Kho-Kho players who were represented in various clubs of Hyderabad and Ranga reddy district.

Limitations:

1. The subjects of the present study belonged to various Kho-Kho clubs of Hyderabad and Ranga Reddy district with different training background.
2. Motivation of the subjects at the time of test performance was a limitation of the study.
3. The study has limited to have standardized tool for the study.

Delimitations

1. The study was delimited to the measurement of Athletic ability.

2. The study was delimited to male Kho-Kho players [Chasers (N=60), Dodgers (N=20) & All-rounder (N=40)] the study was delimited to 120 male subjects form only certain clubs in Hyderabad and Ranga reddy district.
3. The study was delimited to only to the administration of cozens' athletic ability test. The study was delimited to subjects in the age group of 16-20years.

Hypothesis

For the purpose of the present study, it was hypothesized that there may not be any significant differences in the mean performance scores of athletic ability among Chasers, Dodgers & all-rounder male Kho-Kho players.

Review of Related Literature

Premchand was conducted a comparative study of physical qualities of offensive and defensive football players of college level. He compared agility, speed, strength, endurance and height, weight in offensive and defensive players and concluded that (1) defensive players were heavier, taller and had more muscular power than offensive players, (2) offensive players were faster and had more endurance than defensive players, (3) there was no significant difference between offensive and defensive soccer players in agility.

Cassell A. M. Measured and compared the motor abilities and physical characteristics of 111 collegiate soccer players by position of play. The motor ability items included an ability test, a leg-power test, a cocker ability test, an upper body strength test, a test for speed and a test for endurance. The result showed that a difference existed in the endomorphic component of somato type with half-back significantly (p.05) lower than all the other position. Difference (p. 05) were also found in the height, with goal keeper and fullbacks taller than forwards. In motor abilities, differences (p. 05) were found in leg power, with fullbacks more powerful than forwards soccer, ability with half-backs more skillful than goal keeper. No differences were evident in the abilities of agility, upper body strength and endurance.

METHODOLOGY

Selection of Subjects

120 male Kho-Kho players [Chasers (N=60), Dodgers (N=20) & All-rounder (N=40)] who are represented by various men Kho-Kho clubs of Hyderabad and Ranga Reddy districts were selected as subjects for the study. The age of the subjects ranged between 16 to 20 years

Analysis and Interpretation of Data

A significant difference in the mean performances scores of athletic ability among chasers, dodgers and all-rounder male Kho-Kho players was tested using the 'F' test through one-way analysis of variance (ANOVA) bases on a completely randomized design.

Table - 1

S.V	D. F	S. S	M.SS	F-ratio
Athletic ability	2	32.624	16.312	F=0.101<1
Error	117	1898.266	162.27	
Total	119	19017.890		

P>0.05 at 2 and 117 degrees of freedom.

Table -1 that the 'F' ratio calculated was 0.101. The 'F' value calculated was found to be lesser than the table value, at 2 and 117 degrees of freedom at 5% level of significance (P > 0.05). Hence, we accept the null hypotheses formulated in the present study. The 'F' value obtained does not establish any statistical significance.

Conclusions

There was no significant difference in the mean performance scores of athletic ability among Chasers, Dodgers & all-rounder male Kho-Kho players: (P>0.05 or that there was no significant difference in athletic ability among Chasers, Dodgers & All-rounder male Kho-Kho players.

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Effect of Circuit Training For Development of Abdominal Strength among Men Kabaddi Players of Siddipet Dist District

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Abstract:
The purpose of the present study is to find out the effect of Circuit training for the development of Abdominal Strength among men Kabaddi players of Siddipet Dist District. The subject was chosen at random from a group of boys between the ages of 21 and 23 years old. N=20 Experimental Group I and N=20 Control Group II are included in the study's sample. Sit ups test was utilized in the study as a pre-test and post-test to determine Abdominal Strength in both groups. Experiment group I received Circuit training on alternate days for eight weeks, while control group II received general warm-up training. The experimental group's performance on the Sit ups improved from pre-test to post-test. It is concluded that significant effect in experimental group I t whereas the control group exhibits a reduction in their performance.

Introduction:

Kabaddi is a contact team sport with origins in Tamil Nadu, India Ancient India. Played between two teams of seven players, the objective of the game is for a single player on offence, referred to as a "raider", to run into the opposing team's half of a court, touch out as many of their defenders as possible, and return to their own half of the court, all without being tackled by the defenders, and in a single breath.[4] Points are scored for each player tagged by the raider, while the opposing team earns a point for stopping the raider. Players are taken out of the game if they are touched or tackled, but are brought back in for each point scored by their team from a tag or tackle. It is popular in the Indian subcontinent and other surrounding Asian countries. Although accounts of kabaddi appear in the histories of ancient India, the game was popularised as a competitive sport in the 20th century. It is the national sport of Bangladesh. t is the state game of the Indian states of Tamil Nadu, Andhra Pradesh, Bihar, Haryana, Karnataka, Kerala, Maharashtra, Odisha, Punjab, Telangana, and Uttar Pradesh. There are two major disciplines of kabaddi: "Punjabi kabaddi", also referred to as "circle styles", comprises traditional forms of the sport that are played on a circular field outdoors, while the "standard style", played on a rectangular court indoors, is the discipline played in major professional leagues and international competitions such as the Asian Games.

Circuit training is a form of body conditioning that involves endurance training, resistance training, high-intensity aerobics, and exercises performed in a circuit, similar to high-intensity interval training. It targets strength-building and Abdominal endurance. An exercise "circuit" is one completion of all set exercises in the program. When one circuit is completed, one begins the first exercise again for the next circuit. Traditionally, the time between exercises in circuit training is short and often with rapid movement to the next exercise.

P Punitha,Dr. A Mahboobjan (2017) study was to find out the effect of six weeks circuit training on physical fitness of inter collegiate women kabaddi players. A total of thirty (N=30) women Kabaddi Players were selected from Department of Physical Education, Bharathidasan University, Tiruchirappalli, TamilNadu. The age of the subjects ranged from 17 to 21 years. The Subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' experimental group and Group 'B'control group. Group 'A' were undergoing circuit training for three days per week for a period of six weeks for Group 'B' there was no specific training. All the subjects were tested on the selected physical fitness variables such as leg strength, leg explosive power and abdominal strength endurance before and after six week of circuit training. The data pertaining to the physical fitness variables were statistically analysed with analysis of covariance (ANCOVA). In all cases 0.05 level of confidence was fixed as a level of confidence to test the hypothesis. The finding of the study reviles that the experimental group had made a significant difference in all the selected physical fitness variables such as leg strength, leg explosive power and abdominal strength endurance when compared to control group. Hence it was concluded that six week of circuit training improved the selected physical fitness variables of inter college women kabaddi players.

Objective of the Study

The objective of the study is to find out the effect of Circuit Training on the development of Abdominal Strength among Kabaddi players of Siddipet District.

Hypothesis

It was hypothesized that there would be a significant difference in Circuit Training development Abdominal Strength among Kabaddi players of Siddipet District.

Method

The purpose of the present study is to find out the effect of Circuit training for development of Abdominal Strength among men Kabaddi players of Siddipet District. The subject was chosen at random from a group of boys between the ages of 21 and 23 years old. N=20 Experimental Group I and N=20 Control Group II are included in the study's sample.

Sit Ups

(a) Purpose of the Test: To measure Abdominal strength

Results and Discussion

The Experimental group and the Controlled group were given pre- and post-tests to see if there was an improvement in Abdominal Strength after 8 weeks of Circuit training, whilst the Controlled group received general training.

T-Test

Paired Samples Statistics

Sit UPs Wrestlers' players		Mean	N	Std. Deviation	Std. Error Mean
Control Group	Pre-Test	32.8500	20	.63037	.14096
	Post Test	32.7250	20	.80255	.17945
Experimental Group	Pre-test	32.8000	20	.65695	.14690
	Post-test	34.4000	20	.50262	.11239

The analysis of the data reveals that the subjects with the Circuit Training have shown improvement in the performance of Sit Ups test from pre to post-test Mean S. D Experimental group pre-test result shown (32.8000) and Controlled group (32.8500) after 8 weeks of Specific of Circuit Training there is Improvement in the subject's Experimental Group (34.4000) Circuit Training, and Controlled group (32.7250).

Conclusions

It was concluded that after the 8 weeks of Circuit Training, there is improvement in Experiment Group, as it was analysed in the results mention that the Circuit Training has shown excellent effect in the improvement Abdominal Strength. The aim of formulating the effect of Circuit Training to the betterment and enhance their performance as well as a guideline for Kabaddi players coaches at various level in preparing and designing quality and effective training program.

Recommendations:

The following suggestions are made for the benefit of players, coach's academicians, and sports scientists. The researcher suggests the part of the coach to use the above-said development of the Circuit Training program for Kabaddi players. The study helps the physical educationist and coaches for selecting the athletes.

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Impact of Yoga Asanas on the Human Body System

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Abstract

The impact of asanas on human body system is expansive and eternal. The muscles, bones, nervous system, respiratory, circulatory and digestive systems of the human body are greatly benefited from regular practice of asanas. All the body systems are coordinated with each other. The body becomes more flexible, and more able to adjust to environmental changes after practicing asanas. The sympathetic and parasympathetic nervous systems are brought into a state of balance with the help of asanas.Yoga affects every cell of the body. It brings about better neuro-effector communication, improvesstrength of the body, increases the optimum functioning of all organ-systems, increases resistanceagainst stress and diseases and brings tranquillity, balance, positive attitude and equanimity in thepractitioner which makes him lead a purposeful and healthier life.Asanas can also be performed for curative reasons. By gently stretching the muscles, massaging the internal organs and toning the nerves throughout the body, many diseases, even the so –called 'incurable', can be eliminated. It has a deeper significance and value in the development of the physical, mental and spiritual personality. Yogasana has been practised for thousands of years for keeping the human body free from diseases. Yoga, in fact, a scientific system of physio-therapy. Many incurable and long standing diseases can be cured through yogasana. The yoga treatment is perfectly scientific and it is an auto treatment method.

Key Words: Yoga Asana, Human body system

Introduction

"Yoga doesn't take time, it gives time." — Ganga White

The term "yoga" and the English word "yoke" are derived from Sanskritroot "yuj" which means union. Yoga is a psycho-somatic-spiritual discipline for achieving union and harmony between our mind, body and soul and the ultimate union of our individualconsciousness with the Universal consciousness. Yoga is mind-bodytechnique which involves relaxation, meditation and a set of physical exercises performed in syncwith breathing. This can be achieved by systematic and disciplinedpractice of ashtang (eight-limbed) yoga described by sage Patanjali. The result is enfoldment of a unique spiritualpersonality that is a blessing for the whole humanity.

Human physiology is the study of how the human body functions. This includes the mechanical, physical, bioelectrical, and biochemical functions of humans in good health, from organs to the cells of which they are composed. The human body consists of many interacting systems of organs. These interact to maintain homeostasis, keeping the body in a stable state with safe levels of substances such as sugar and oxygen in the blood. Each system contributes to homeostasis, of itself, other systems, and the entire body. Some combined systems are referred to by joint names. For example, the nervous system and the endocrine system operate together as the neuroendocrine

system. Together, these systems regulate the internal environment of the body, maintaining blood flow, posture, energy supply, temperature, and acid balance.

Influence of Yoga on Several System of the Body

"Yoga teaches you how to listen to your body." — Mariel Hemingway,

The impact of asanas on human body system is expansive and eternal. The muscles, bones, nervous system, respiratory, circulatory and digestive systems of the human body are greatly benefited from regular practice of asanas. All the body systems are coordinated with each other. The body becomes more flexible, and more able to adjust to environmental changes after practicing asanas. The sympathetic and parasympathetic nervous systems are brought into a state of balance with the help of asanas.

"Yoga is like music. The rhythm of the body, the melody of the mind, and the harmony of the soul create the symphony of life." — B.K.S. Iyengar

On a broader aspect, the human body consists of two central parts called the trunk and the head. Attached to the trunk are the arms or upper extremities and the legs are known as the lower extremities. Bones are the hardest parts of the human body, and form the framework of the physical structure. This framework of bones is called the skeleton that supports the softer parts of the body such as muscles, which are attached to it. It also offers effective protection to some other parts of the human organism. The long term benefits of asanason the various functions are following:

Effects of Yoga on Cardiovascular System

- Connection between breath and heartbeat: Extra supply of oxygen.
- Purification of blood: extra supply of oxygen, removing carbon dioxide and toxins.
- Removing disorders from blood
- High blood pressure
- Slowing down heart rate
- Low blood pressure
- Heart diseases

Effects of Yoga on Respiratory System

- Using the whole lung capacity, expanding lungs and increasing efficiency: eliminates phlegm
- Removes throat disorders and inflammations
- Therapy for lung disorders: Bronchitis, Asthma, Tuberculosis

Effects of Yoga on Digestive System

- Abdominal movements: – influence on apatite, control over hunger and thirst
- Keeps teeth and gum healthy
- Stimulation of the metabolic rate
- Massage on inner organs and toning digestive system
- Removal of intestinal wind
- Removes acidity from stomach
- Ulcers
- Diarrhea
- Constipation

Effects of Yoga on Skeletal System

- Ujjayi is supposed to remove disorders from the bone and marrow.
- Those suffering from slipped disc, shall practice Ujjayi Pranayama.
- For instance, some of the bones are arranged in such a way that they give protection to the brain, the spinal cord, the heart and the lungs.
- The skeleton, its joints and muscles are exercised through asanas that leads to the proper development of the bones and strengthens them with the passage of time.
- The joints are moved through the full range of motion of the asanas, which encourages mobility and eases pressure.

Effects of Yoga on Muscular System

- Extra oxygen supply and stimulation of the Nervous System:
- induces muscular relaxation
- increasing healing powers for tissues
- removes Fatigue

Effects of Yoga on Nervous System

- Extra supply of oxygen, stimulating, toning, balancing, strengthening and and soothing effects on the Nervous System: Brain centers will be toned, so they can work close to the optimum capacity.
- Control over the body temperature will be stimulated: cooling and heating
- Cerebral tension, stress and anxiety will be relieved, Insomnia removes sleepiness, Vertigo, and Head ache
- Moreover: Pranayama helps for all kinds of skin diseases, healing power of tissues is stimulated.
- Ujjayi removes diseases from fat, skin and muscles. The reproductive Organs will be toned. For Menstruation Problems and Cramps, Abdominal Breathing and Ujjai help.
- During and after pregnancy, Ujjayi,lightBhastrika, N.S., Bhramari, and Kapalabhati can be helpful

Effects of Yoga on Endocrine System

- The endocrine system is a system of glands that involve the release of extra cellular signalling molecules known as hormones.
- The endocrine system is active in regulating metabolism, growth, development and puberty, and tissue function and also plays a part in determining mood.
- The field of study that deals with disorders of endocrine glands is endocrinology, a branch of the wider field of internal medicine, which has also supported the fact that asanas have great beneficial effects on the particular system.
- Asanas regulate and control the secretion of hormones from all glands in the body. Even if one gland is not working, a noticeable loss of health can be experienced.

Effects of Yoga on Mind and Psyche

- Calming effect on the mind and thoughts
- Cooling the mind, and mental and emotional excitation
- Tranquillity of thought, tranquilized before going to sleep
- Preparation for mental work, concentration and meditation
- Relieves stress and anxiety
- Directs awareness inward, brings peace of mind and one pointed focus
- Leads to deep state of meditation
- Helps when suffering from Depression, Lethargy, dullness and sleepiness

Effects of Yoga on Pranic body

- Harmonizing, stimulating and increasing flow of prana.
- Clears out pranic blockages purifying and balancing in Ida and PingalaNadis.
- Increasing flow of prana in SushumnaNadi

Conclusions

There are many disease specific asanas that cure the ailments from the very root.Asanas for diabetes, heart problems, nervous disorders, backaches and so on are widely practiced. However, Yoga experts can suggest appropriate yogic exercises and kriyas that may heal the patient's mind and body. It is important to note that asana in Yoga therapy, for a particular patient, are chosen according to the specific disease he/she is suffering from.

Yoga affects every cell of the body. It brings about better neuro-effector communication, improvesstrength of the body, increases the optimum functioning of all organ-systems, increases resistanceagainst stress and diseases and brings tranquillity, balance, positive attitude and equanimity in thepractitioner which makes him lead a purposeful and healthier life.

"Yoga is almost like music in a way; there's no end to it." — Sting

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Impact of Yoga Asanas on the Human Body System

Prevention of Knee Arthritis Association with Specific Yoga Asanas

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Abstract:

The purpose of this study was prevention of knee arthritis relation with specific yoga Asanas. Five yoga centers and each one consists of 36 Male and total 180 Male and the range of age 45-50 years were selected from Yoga Chaitanya Trust, Srikakulam, Yogoda Satsanga Dhyana Mandali, Srikakulam, Yoga Consciousness Trust - Seethammadhara, Patanjali Yoga Kendra – Akkayyapalem and Lotus Yoga Center - M.V.P. Colony Yoga Practicing Centres in Visakhapatnam, Andhra Pradeshon non-randomly by purposive sample was used. Karl Pearson Coefficient of Correlation was used to Analysis of the collected data on specific yoga Asanas were twelve count Surya Namaskars (0.485*), Setu Bandhasana (0.439*), Bandha Hasta Tadasana (0.462*), Veerabadrasana (0.471*), Baddha Trikonasana (0.389*), Supta Vajrasana (0.289*), Supta Gomukhasana (0.543*), Eka Pada Pavana Mukthasana (0.569*), Parivrtta Uttitha Parsva Konasan (0.394*), Uttitha Parsva Konasan (0.299*), Baddaha Kosana (0.297*) Coefficient of Correlation with prevention of Knee Arthritis had been positively with significant level 0.05. Remaining yoga Asanas did not correlate on this current study.

Key words: Yoga, Asana, Arthritis, Knee-Arthritis, Prevention

Introduction:

Yoga is the best method in present days for healthy life. The word yoga comes from the Sanskrit word “yuj” which means join, unite, harness, and “yoke” (Satyananda, 1969). In ancient India yoga implied joining or integrating all aspects of life of an individual like physical, mental and spiritual. The roots of yoga originated in ancient India. In oral traditions of yogis, the knowledge of yoga was first passed by Lord Shiva to the lives of men. Yoga is also referred in pre-Vedic Indian tradition and also mentioned in Rig-Veda. Yoga is also referred broadly in Hindu Upanishads but the origin of yoga to be much older than that. The chronology of earliest text describing yoga- practices is unclear, varyingly credited to the Upanishads (Singleton, 2010).

An asana is a body posture. It is also defined as a sitting meditation pose. But in hath yoga and modern yoga its presents as pose or position may be standing, inverted and twisting. Patanjali mentions the asana as one of the eight limbs of his system. According to yoga sutras asana is a position that is steady and comfortable. Asana also known as yoga poses or yoga postures in English. In Hatha Ratnavali provides a list of 84 Asanas.

About Arthritis:

Arthritis comprises more than 100 different rheumatic diseases and conditions, the most common of which is osteoarthritis. Other frequently occurring forms of arthritis include rheumatoid arthritis, lupus, fibromyalgia, and

gout. Common symptoms include pain, aching, stiffness, and swelling in or around the joints. Some forms of arthritis, such as rheumatoid arthritis and lupus, can affect multiple organs and cause widespread symptoms. Although arthritis is more common among adults aged 65 years or older, people of all ages (including children) can be affected. Nearly two-thirds of people with arthritis are younger than age 65 years. Arthritis is more common among women (24.3%) than men (18.7%) in every age group, and it affects members of all racial and ethnic groups. Arthritis is also more common among adults who are obese than among those who are normal weight or underweight. Severe arthritis can cause joint deformity if left untreated. Symptoms of arthritis pattern and location of symptoms can vary depending on the type of arthritis. Generally, people with arthritis feel pain and stiffness in and around one or more joints. The onset of arthritis symptoms can develop gradually or suddenly. Arthritis is most often a chronic disease, so symptoms may come and go, or persist over time. Present days, Yoga Education is being impacted by many renowned Yoga Institutions, Yoga Colleges, Yoga Universities, Yoga Departments in the Universities, Naturopathy colleges and Private trusts & societies. Many Yoga Clinics, Yoga Therapy and Training Centers, Preventive Health Care Units of Yoga, Yoga Research Centers etc. have been established in Hospitals, Dispensaries. Now-a-days, millions and millions of people across the globe have benefitted by the practice of Yoga which has been preserved and promoted by the great distinguished Yoga Masters from ancient time to this date. The practice of Yoga is blossoming, and growing more vibrant every day. The present study therefore aims to study the relationship of Specific Yoga Asanas Association with Prevention of Knee Arthritis.

Methodology

Purpose of the Study:

This study would be decided the Specific Yoga Asanas relation with Prevention of Knee Arthritis.

Selection of the Subjects:

180 Male and the range of age 40-45 years were selected from Yoga Chaitanya Trust, Srikakulam, Yogoda Satsanga Dhyana Mandali, Srikakulam, Yoga Consciousness Trust - Seethammadhara, Patanjali Yoga Kendra – Akkayyapalem and Lotus Yoga Center - M.V.P. Colony yoga practicing centers in Visakhapatnam, Andhra Pradesh on non-randomly by purposive sample was used.

Figure-I
Specific Yoga Asanas

S. No	Specific Yoga Asanas
1	Eka Pada Pavana Mukthasana
2	Supta Gomukhasana
3	Twelve Count Surya Namaskars
4	Veerabadrasana
5	Bandha Hasta Tadasana
6	Setu Bandhasana
7	Parivrtta Uttitha Parsva Konasan
8	Baddha Trikonasana
9	Uttitha Parsva Konasan
10	Baddaha Kosana
11	Supta Vajrasana
12	Parvatasan
13	Pavana Mukthasana

14	Vajrasana
15	Bhadrasana
16	Gomukhasana
17	Sethu Asana
18	Vrukshasana
19	Garudasana
20	Tadasana
21	Trikonasana
22	Marjalasana
23	Padmasana
24	Sashankasana
25	Natarajasana
26	Ekapadasana
27	Viparita Veerabadrasana

Collection of the Data and Tools:

Primary outcome measure:

The data have been collected by administrating the standard procedures for taking KA symptoms including pain, stiffness, and physical function were measured using the 24-item Western Ontario and McMaster Universities KA Index scale (LK scale 3.1) (WOMAC). Each symptom is measured using a 5-point Likert scale where 0 represents having no symptom and 4 represents having a severe symptom. KA pain was also measured using the Visual Analog Scale, and a single question that asked participants to record the average number of pain medications (prescription and over-the-counter) they used for knee KA per day.

Secondary outcome measures:

Physical performance of the lower extremities has been assessed using the Short Physical Performance Battery (SPPB) which consists of three components: repeated chair stands, balance, and timed 8-foot walk. Categorical Scores (Range 0–4) for the 8-foot walk and chair stands were based on timed. Walking speed was timed using the 50-foot walk test.

Statistical Analysis and Discussions:

In order to find out the relationship of specific Yoga Asanas with prevention of knee arthritis the Karl Pearson coefficient of correlation had been used and testing the Hypothesis the level of confidence is 0.05.

Figure-II

Specific Yoga Asanas Association with Prevention of Knee Arthritis

S. No	**Specific Yoga Asanas**	**Coefficient of Correlation 'r'**
1	Eka Pada Pavana Mukthasana	0.569*
2	Supta Gomukhasana	0.543*
3	Twelve Count Surya Namaskars	0.485*
4	Veerabadrasana	0.471*
5	Bandha Hasta Tadasana	0.462*
6	Setu Bandhasana	0.439*
7	Parivrtta Uttitha Parsva Konasan	0.394*

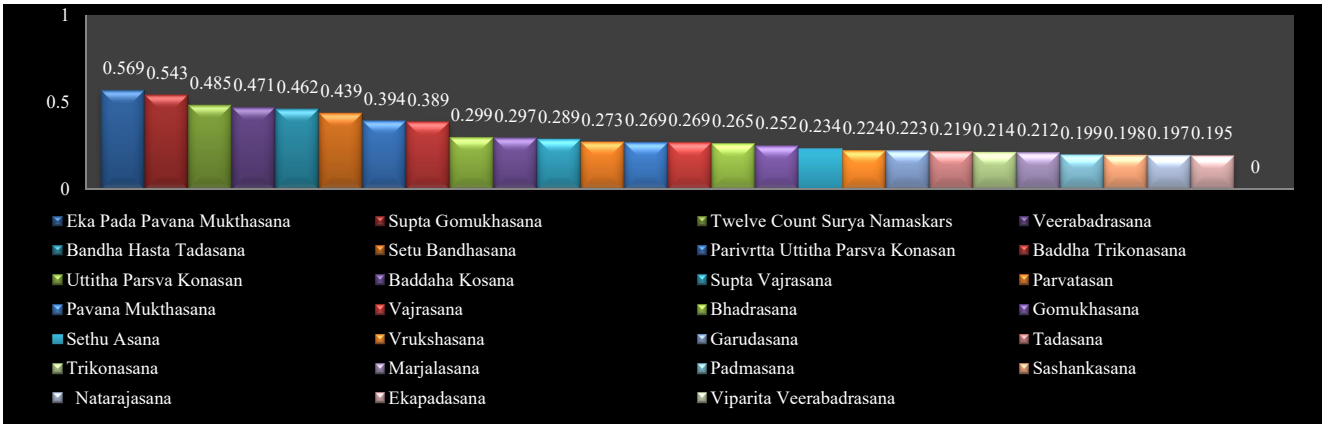
8	Baddha Trikonasana	0.389*
9	Uttitha Parsva Konasan	0.299*
10	Baddaha Kosana	0.297*
11	Supta Vajrasana	0.289*
12	Parvatasan	0.273
13	Pavana Mukthasana	0.269
14	Vajrasana	0.269
15	Bhadrasana	0.265
16	Gomukhasana	0.252
17	Sethu Asana	0.234
18	Vrukshasana	0.224
19	Garudasana	0.223
20	Tadasana	0.219
21	Trikonasana	0.214
22	Marjalasana	0.212
23	Padmasana	0.199
24	Sashankasana	0.198
25	Natarajasana	0.197
26	Ekapadasana	0.195
27	Viparita Veerabadrasana	0

N=180, r.05 (180) =0.278, *Significant at 0.05 level.

An analysis of the above table reveals that prevention of Knee Arthritis have been significantly related to specific yoga Asanas were Eka Pada Pavana Mukthasana (0.569*), Supta Gomukhasana (0.543*), Twelve count Surya Namaskars (0.485*), Veerabadrasana (0.471*), Bandha Hasta Tadasana (0.462*), Setu Bandhasana (0.439*), Parivrtta Uttitha Parsva Konasan (0.394*), Baddha Trikonasana (0.389*), Uttitha Parsva Konasan (0.299*), Baddaha Kosana (0.297*) and Supta Vajrasana (0.289*) as obtained values of correlation were greater than the value of r= 0.278 the correlation to be significant at 0.05. The remaining yoga Asanas were Parvatasan, Pavana Mukthasana, Vajrasana, Bhadrasana, Gomukhasana, Sethu Asana, Vrukshasana, Garudasana, Tadasana, Trikonasana, Marjalasana, Padmasana, Sashankasana, Natarajasana, Ekapadasana, Viparita Veerabadrasana as their correlation values are less than the value of r=0.278 need for significance at 0.05 level of confidence.

Figure-III

Specific Yoga Asanas Association with Prevention of Knee Arthritis



As for the results finally, the study exposes that Specific Yoga Asanas would be significantly related to prevention of Knee Arthritis were Eka Pada Pavana Mukthasana (0.569*), Supta Gomukhasana (0.543*), Twelve count Surya Namaskars (0.485*), Veerabadrasana (0.471*), Bandha Hasta Tadasana (0.462*), Setu Bandhasana (0.439*), Parivrtta Uttitha Parsva Konasan (0.394*), Baddha Trikonasana (0.389*), Uttitha Parsva Konasan (0.299*), Baddaha Kosana (0.297*) and Supta Vajrasana (0.289*).

As per the analysis, suggestions to the Yoga Trainers/ Instructors, Yoga Gurus, Yoga Teachers, Yoga Practioners and Yoga Aspirants to concentrate All Specific Yoga Asanas while before yoga training and practicum for prevention of Knee Arthritis. These Asanas have been given muscular strength, flexibility and effective blood transportation to the knee joints also Stability the synovial fluid in the knee joints these are the specific yoga Asanas may be prevented Knee Arthritis.

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