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**International Journal of Health, Physical Education and Computer Science in Sports**
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# YOGA AS A THERAPY

**Kishor Sankapal**
**Research Scholar, Dr. Babasaheb Ambedkar Marathwada University,**
**Chhatrapati Sambhajinagar**
**Prof. Dr. Bappasaheb Maske**
**Professor and & Head**
**Department of Physical Education & Sports,**
**Sant Ramdas Mahavidyalaya, Ghansawangi Dist. Jalna**

## ABSTRACT:

Modern man has a hectic, chaotic life style. He sleeps late, watching late movies on the TV, he also carries work home. He eats a heavy dinner, that he cannot digest and it sits like a lump of cement in his stomach. He gets up late. Rushes to work in crowded trains or on jammed highways. In the office it is likely that he lives a stressed life. With the onset of info-tech revolution one is glued to one's computer and eats and drinks (too much tea or coffee, which creates toxicity in his blood and brain) this chaotic life style makes him prone to disease both somatic and psychic such as acidity, asthma, headache, hypertension, common cold, diabetes, postural defects, stress etc., which are not directly amenable to conventional (allopathic medicine).

Now these days yoga therapy has been mostly used for the treatment of both somatic and psychic diseases. Yoga is one of the ancient Indian principles which rules over one's body and mind, by participating, it enables a person to attain peaceful and healthy life. The great saint Pantanjaly enumerated RAJAYOGA, which lays down an eight-fold path called EIGHT LIMBS OF YOGA, the third anga is called ASANA, Asana is defined as static posture. **Keywords:** Yoga

## INTRODUCTION

Thus yoga, a specific system of postures, will not only help to keep a person normal but also practiced to prevent and treat certain diseases.

## PROLOGUE:

Yoga is becoming more popular in different parts of the word then even before. Now peoples are coming to India to learn and practice yoga from abroad and joining the Asharamas of different 'Yogacharayas'. For the restless mind Yoga gives solace, for the sick, it is a boon. For a common man it is the fashion of the day to keep him fit by doing some yogic exercise.

Now a days yoga appearance to make a vital contribution to the modern medical system. Various ailment are being treated with the help of yogic practices. Most of the psychiatrists are using yoga for the treatment of psyclogically-distributed persons. They have their own yoga therapy centers established in their hospitals.

## UNDERSTANDING YOGA:

Before practicing yoga it is very essential to understand in intensively. Moreover, it should be practiced as a therapeutic means only by the persons having perfect knowledge of the same, otherwise it may spoil the life of someone under treatment. The term yoga has its root as 'Yug' in Sanskrit. Yug means joining of two things. In the form of saloka in Sanskrit it is described as 'Yujyate anena iti yogah' hence, yoga, is that which joins. What are the entities that are joined? In the traditional terminology it is the joining of 'Atma' with 'Parmatama' i.e. joining of the human soul with that of the divine soul.

According to Patanjali who wrote 'y°9[a] sutras[1] nearly 4000 years ago described yoga as a conscious process of gaining mastery over the mind i.e. yoga Vriti Nirbdhah. But the definitions given in 'Bhagavadagita, mainly three are as under

(1) 'Yoga karmashu koushalam'.

(2) Dukh samyoga wiyga yoga.

(3) Samatawam yogamuchayate.

Thus in action, yoga is a special skill which makes the mind reach its subtle state. It helps in maintaining relaxation and awareness in action. Efficiency in action is an outcome. So it is a technique to reach the ultimate state of perfection.

'Gita' further portrays yoga as the power of creation: Krishna through his power of yoga shows Arjuna the 'Viswarupa Darsana' the vision of the universal being, by giving him divine sight.

In Indian culture and traditions Yoga' has different meanings just as in medical science it is the combination of different types of medicines, in astrology, it is the position of different planets and stars, and perfection in the act in moral preaching.

**YOGA AS THERAPY:**

What is therapy? Should we use this term in Yoga? Are yoga practioners therapists? This is a very typical question. Actually it appears that among medical men there are two schools of thoughts on the interpretation of the word therapy. One believes that the doctor himself is the only therapist. The other believe that everything that happens to the patient while he is in the hospital is therapy. Personnel directing patient activities are therapists. Mostly we hear this word in connection with hospital activities.

Now-a-days concept of health care is changing. Today we are witnessing a revision of attitudes towards health care that is taking us back in times to a more personalized form of health care and ahead towards new ways of viewing health and hearjng. The term that describe this new health is 'holistic'from the 'Greek Holes' meaning 'Whole'.

**ARAS AND BHAGANDAR:**

These are very painful disease of the lower extremities. Bhagandar is so painful that it cannot be tolerated while sitting. It is likes a cave which many times join the anus and latterene start coming out of it. Generally, medicine does not affect it.

**TREATMENT:**

Ayurvedic kesar sutra treatment is the best treatment of bhagandar. In yogic practice of yoni mudra, in vajarasana mulbandha, ganeshkriya, vastikriya, sacasana and practice of dhayana daily for 15 minutes is essential. It is advisable to sit in hot water for 15 minutes daily for having hipbath for earlier effect and relief. Nothing is better than sitting in hot water for the patient of bhagandar and piles.

**STRESS:**

Stress is simply the rate of responses of wear and tear in the body. Stress is the non-specific responses of the body to any demand made' upon it

**TREATMENT:**

Maharishi Patanjali has suggested Abhyasa- Vairagya yoga for stress elimination, Kriyas Yoga for stress management and Ashtanga Yoga for Stress Prevention. When stress is aroused, people must manage it, and

further it must have prevented and then complete elimination is possible. Thus, yoga practice are to be practiced with patience and perseverance to keep one's back healthy. Yoga therapy has been mostly used for the treatment of diseases, which are now a days regarded to be psychosomatic or stress related and some psychiatric disorders. Hence yoga is beneficial to individual in following ways:

1) Yoga is the best relaxation technique.

2) Development of awareness.

3) Yoga philosophy positive attitude towards life.

4) Yoga provides emotional stability.

Thus, yoga provides hundreds of methods to suit different individual with different psychological make-up all leading to the same goal of developing the inner face and bliss. The sick person is offered immediate superficial remedies at the body and mind level in form of Asanas, Kriyas, bandhans and Pranayama.

## CONCLUSION:

A lot of work has been done in the field of research in yoga therapy and the deeper investigations are on way. Doctors are also accepting it as a holistic solution as drugs and proving more and more useless in several ailments. They are feeling helpless in curing many diseases and turning towards yoga practice, homeopathy, natur-opathy and so on. But it may be remembered that the disorders caused by infection can be treated better medicines, which kills the germs. Yoga therapy is better suited for functional and psychosomatic disorders and also for some chronic ailments. It should also be remembered that the preventive aspect of yoga is of greater value than the curative aspect.

## REFERENCES:

Bansal, Ajay (2005), "how yoga helped" Total Health^ A Journal of Yoga Way pf_LHe_.

Berkman L.F., Breslow L, (1983), "Health and Ways of Living" (NewYork: Oxford University Press),.

Nagendra H. R., Mohan T. Sri, et. al. (1988), "Yoga in Education", 1$^{s!}$ ed., (Banglore : Vivekananda Kendra).

Unkule Nitin, (2005 ), "Yoga and Exercise" Nisargopachar VarJa. A Monthly Magazine. Vp.L-3.

Vayas Susheel Kumar, (2004), "Yoga Education", (Delhi :Chawla Publishers)

Vyavahare S., ( 2005),, "Stress Management and Yoga" I$^{51}$ International

Conference on Revival of Traditional Yoga.

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# COMPARATIVE SURVEY OF SELECTED POSTURAL DEFORMITIES IN SCHOOL CHILDREN OF JALNA DISTRICT

**Dr. Bhujang Davkar**

**Director of Physical Education**

**Ankushrao Tope Mahavidyalaya, Jalna (MS)**

**Deepak Patil**

**Research Scholar, Dr. Babasaheb Ambedkar Marathwada University, CSN (MS)**

## ABSTRACT

The Purpose of the study was to do the comparative survey of selected postural deformities in school children of Jalna District. For this total N=300 students were selected with the mean age of (16+/-1.23) year from different schools of Jalna District. Further, the selected subjects were divided into two intervention group n=150 boys and n=150 girls. The selected postural deformities were upper limb.i.e. kyphosis (KYH), lordosis (LDS), scoliosis (SLS) and lower limb i.e. knock knee (KNK), bow leg (BLG) and flat foot (FTF). Gird chart technique, subjective observation and paper ink were used to assess the postural deformities. Percentage was applied as statistical tool for the study. The results of the study revealed that percentage of boys suffering from selected postural deformities were (KYH=28.7%), (LDS=34.7%), (SLS=15.3%), (KNK=10%), (BLG=6.7%) and (FTF=4.7%). The results of the study revealed that percentage of girls suffering from selected postural deformities were (KYH=18%), (LDS=25.3%), (SLS=18%), (KNK=13.3%), (BLG=8.7%) and (FTF=16.7%). Whereas, the percentage of total N=300 students suffering from postural deformities were (KYH=23.33%), (LDS=30%), (SLS=16.66%), (KNK=11.6%), (BLG=7.66%) and (FTF=10.66%). **Keywords: -** Kyphosis, Lordosis, Scoliosis, Knock Knee, Bow Leg, Flat Foot, Gird Chart

## INTRODUCTION

The postural refers to the position of the body, this mean the relationship between different parts of the body, analyzed in a given time frame and space (Fortin C, et al 2011). Quantitative postural evaluation is based on the feet and legs, the pelvis, the spine, the shoulders and the head (Kovač S, et al 2014). The body postural is defined by alignment and orientation of the segments of the body in a vertical position. If the muscles are strong enough to overcome the gravity of the earth, the body will remain vertical, (Ćirić A, et al 2015) but if the

muscles are not strong enough, you can feel tired and the body dissolves (Kovač S, et al 2015). In this context, this work should be done. Focus on diagnosing these body segments. Complete posture and other parts of the body depend on the position of a part of the body. The minimum position of each part of the body is a prerequisite for proper posture. Every time activity changes, the position category also changes. A good posture is defined as a mixing mechanism to achieve customizable body behaviour. There are several theories to maintain the postural is existed, for example: Ankle and hip strategies (Negrini S, et al 2005)**.**

Healthy positioning includes well-placed and stable feet and ankles, proper movement of the knees, hips and pelvis, as well as movement of the spine, shoulders and head (Kosinac Z, 2006). Posture deformation is considered to be anything that violates proper posture in any situation. Good posture help to improves social and economic efficiency because it is full of trust and can interact with the people appropriately.

## METHODOLOGY

The population of the study total (N=350) students, from which for the purpose of the study (300) students suffering from postural deformities on the subjective based were selected, further separated into two intervention group boys n=150 and girls n=150 with mean age of (16+/-1.23) year were selected as the subjects. The selected subjects were students of different Govt aided school in Jalna District. The postural deformities for the study were upper body and lower body postural deformities.i.e. kyphosis (KYH), lordosis (LDS), scoliosis (SLS), knock knee (KNK), bow leg (BLG) and flat foot (FTF). Gird chart was used for the assessment of kyphosis (KYH), lordosis (LDS), Scoliosis (SLS). For assessment of knock knee (KNK), bow leg (BLG) scale and subjective method was applied. Flat foot (FTF) was measured with paper ink technique. The data obtained were analysis with percentage method done with SPSS version 20.

## STATISTICAL ANALYSIS & RESULTS

The data collected on N=300 students (boys n=150, girls n=150) on selected postural deformities kyphosis KYH, lordosis LDS, Scoliosis SLS, knock knee KNK, bow leg BLG and flat foot FTF were analysis on percentage based and presented in table form.

**Table 1: Percentage Analysis of Selected Postural Deformities in Boys School Children of Jalna District**

| S.no | Postural Deformities | Frequency (150) | Percentage |
|---|---|---|---|
| 1. | Kyphosis | 43 | 28.7% |
| 2. | Lordosis | 52 | 34.7% |

| | | | |
|---|---|---|---|
| 3. | Scoliosis | 23 | 15.3% |
| 4. | Knock knee | 15 | 10.0% |
| 5. | Bow legs | 10 | 6.7% |
| 6. | Flat foot | 7 | 4.7% |

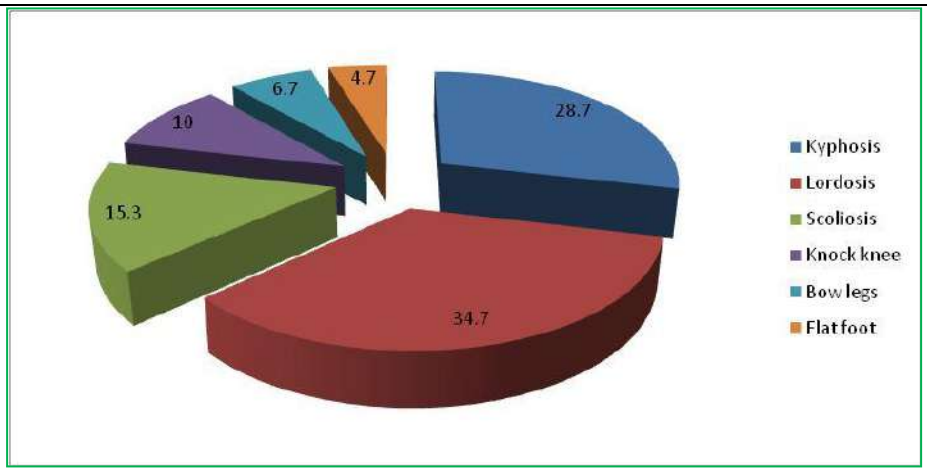



**Table 2: Percentage Analysis of Selected Postural Deformities in Girls School Children of Jalna District**

| S.no | Postural Deformities | Frequency (150) | Percentage |
|---|---|---|---|
| 1. | Kyphosis | 27 | 18.0% |
| 2. | Lordosis | 38 | 25.3% |
| 3. | Scoliosis | 27 | 18.0% |
| 4. | Knock knee | 20 | 13.3% |
| 5. | Bow legs | 13 | 8.7% |
| 6. | Flat foot | 25 | 16.7% |

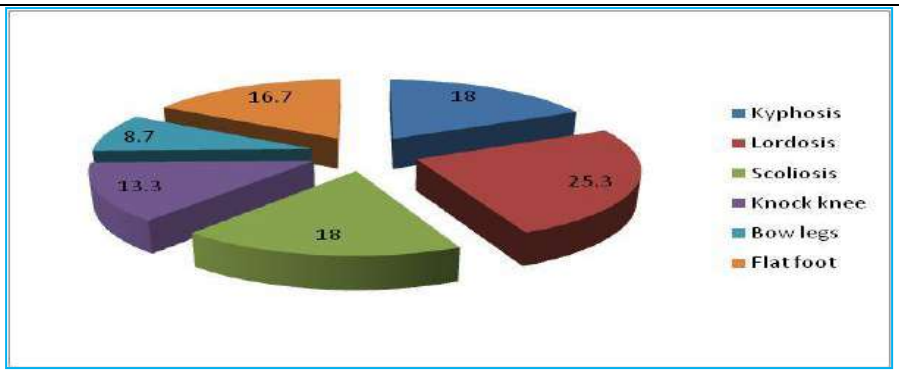
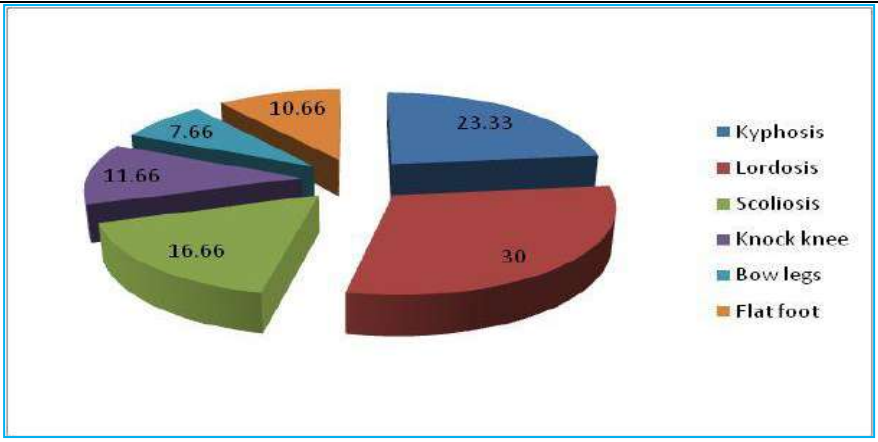



**Table 3: Percentage Analysis of Selected Postural Deformities in boys & Girls School Children of Jalna District**

| S.no | Postural Deformities | Frequency (300) | Percentage |
|---|---|---|---|
| 1. | Kyphosis | 70 | 23.33% |
| 2. | Lordosis | 90 | 30% |
| 3. | Scoliosis | 50 | 16.66% |
| 4. | Knock knee | 35 | 11.66% |
| 5. | Bow legs | 23 | 7.66% |
| 6. | Flat foot | 32 | 10.66% |




**DISCUSSION OF FINDING**

In present scenario postural deformities are considered as the one of the common problem easily observes in school going children. Several studies were conducted in different area regarding the postural deformities among the school children. Most of the studies revealed that children are suffering from postural deformities from very early age. This study was carried out with similar purpose to indentify the school going children of Jalna District suffering from selected postural deformities like kyphosis (KYH), lordosis (LDS), scoliosis (SLS), knock knee (KNK) 11.66%, bow leg (BLG) and flat foot (FTF).

The results collected from actual 300 children suffering from postural deformities highlighted that, 23% were found to be in problem of (KYH), 30% school children suffering from (LDS), 16.6% had (SLS), 11.66% had (KNK), 7.6% (BLG) and (FTF) was 10.6%.

The percentage of boys on selected postural deformities revealed that, (KYH), 28.7% school children suffering from (LDS), 34.7% had (SLS), 15.3% had (KNK) 10%, (BLG) 6.7% and (FTF) was 4.7%.

The girl students suffering from postural deformities were (KYH), 18% school children suffering from (LDS), 25.3% had (SLS), 18% had (KNK) 13.3%, (BLG) 8.7% and (FTF) was 16.7%.

## CONCLUSION

The results obtained from 300 school going subjects revealed that, most of the percentage of student were suffering from postural deformities like (KYH), (LDS), & (SLS) which are upper body postural deformities. This is due to decreased motor activity, prolonged sitting on the computer from early childhood, poor posture at school, too many backpacks, inadequate nutrition, increased traumatic lesions, congenital spinal abnormalities and spending few hours of exercise. Previously the Muscular fatigue occurs in the spine, due to this child take incorrect postural and repeated action of the movement lead toward the postural deformities in further stages (Stamenka Mitova, 2015).

## REFERENCES:

1. Fortin C, Ehrmann Feldman D, Cheriet F, Labelle H. Clinical methods for quantifying body segment posture. Disabil Rehabil. 2011; 33:367–83. doi: 10.3109/09638288.2010.492066
2. Kovač S, Kajmović H, Rađo I, Manić G. Trend projections of body deformities occurrence between the ages of 5 and 12, metrically objectified and estimated by 3D postural status screening. Homo Sporticus. 2014; 16:5–13.
3. Ćirić A, Čaušević D, Bejdić A.. Differences in posture status between boys and girls 6 to 9 years of age. Homo Sporticus. 2015; 17:15–20.
4. Kovač S, Kapo S, Alić H, Manić G. Postural quality analyzes for children recorded in kinematic 2D and 3D contemplas method. TTEM. 2015; 10:99–106.
5. Negrini S, Aulisa L, Ferraro C, Fraschini P, Masiero S, Simonazzi P. et al. Italian guidelines on rehabilitation treatment of adolescents with scoliosis or other spinal deformities. Eura Medicophys. 2005;41:183–201
6. Kosinac Z. Kinesiotherapy of the movement system. Split: Universtiy of Split; 2002
7. Stamenka Mitova, frequency and prevalence of postural disorders and spinal deformities in children of primary school age, Research in Kinesiology 2015, Vol. 43, No. 1, pp. 21-24
8. Róbert Rusnák, Marina Kolarová, Ivana Aštaryová, and Peter Kutiš, Screening and Early Identification of Spinal Deformities and Posture in 311 Children: Results from 16 Districts in Slovakia, Rehabilitation Research and Practice Volume 2019, Article ID 4758386, 9 pages https://doi.org/10.1155/2019/4758386
9. M. Srpoňová and Z. Hudáková, Impact of correct body position for the treatment of back deformities in children," Zdravotnícke štúdie, vol. 6, no. 2, pp. 31–34, 2013.

10. J. Vajičková, Effect of dynamic sitting position in school, Rehabilitácia, vol. 42, no. 3, pp. 155–160, 2005

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# A SOCIOLOGICAL CONSIDERATION OF SPORT PRACTICES IN INDIA

**Sanjay Tewari, Ph. D**
**Hony. Professor**
**Russian Academy of Social & Fundamental Sciences, Moscow**
**Managing Committee Member (2018-23), Indian Sociological Society**
**Convener, Research Committee 25 (Sociology of Sports) (2024-25), Indian Sociological Society**
**Email: sanjay.tewari@yahoo.co.in**

## ABSTRACT

Despite the potential of sport development to highlight broader social complexities, sociologists in India remain disinterested in the area (and sport generally) as avenues of legitimate study. Yet, sport development programs provide sociologists opportunities to know and engage with body politics, questions of structure & agency, and social transformation. Accordingly, in this paper I draw on Bourdieu (1992; 1993) & Giddens (1990; 2009) to understand the construction and consequences thereof, sport development projects and the broader processes to which they are a part. I discuss my research with youth in two Indian states, and, consider how sport development agendas are often confounded by tensions, negotiations, and resistances contours of the local context.

## INTRODUCTION

Over the past decade, UN agencies, international sport federations, international and national non-governmental organizations (NGOs) and national governments have been using sport as a tool for development. The rationale that can be attributed to this belief is documented from studies that under appropriate conditions physical health benefits of sport such as prevention of diseases, lessening of likelihood of unhealthy practices (such as illegal drug use and unsafe sex), potential to positively influence social integration and inclusion of people with disabilities, women & girls, enhancement of self-worth etc. contribute to the social fabric of our society. Perhaps when we talk of development, more pervasively there should be a talk of Sport. Sport implies to all kinds of physical activities that contribute to physical fitness, psychological well-being and social interface, such as structured or competitive sport, play, recreation, and aboriginal sports and games (European Charter 2001).

As I intend to study the sociological perspective of sport through which the development mechanism can be generated, it would be appropriate to apprehend it in a broader sense. This field should be concerned with the descriptions and explanations of the interrelations between sports and other social components…the unique feature about the sociological approach to sport, as distinct that from psychology has been a focus about sport in its function as a component of social organization (Edwards, Harry: 1973). The sociological perception of sports is based on three fundamental themes; sport is a social institution worthy of sociological examination like the more traditional institutions of politics, religion, economy, marriage/family, law, health/medicine education, and science; sport is a microcosm of the larger society and as such reflects and reinforces the foremost philosophy; and several institutional links between sport and other societal institutions make it impossible for changes in one sphere not to have deep effects in all spheres. Bourdieu's social approach to the study of sport, the sub discipline of Sport Sociology, and the scope it offers to those inquiring into the social dimensions of sport and physical education have been widely recognized (Clement, 1995; Jarvie & McGuire, 1994; De France, 1995). His sociology has inspired many publications on 'sport studies' (Clement, 1995) and Clement (1995) and argues that it is the relevance of the bodily dimensions (which I talk of as the mind set) of sport that makes Bourdieu's approach attractive. He does not offer a social set of principles as much as a sociological method and a set of analytical tools through which culture and society can be understood and examined. His notion of habitus in particular, suggests a means of understanding how bodily engagement in day to day practice and in the practice of sport and other institutionalized physical activity function to symbolize the interacting dynamics of culture, class and gender. However, when I try to collaborate Giddens structuration with what I intend to do, I do find a symmetry. The structuration approach does not focus on the individual actor or societal totality but social practices ordered across space and time. Agency, as Giddens calls, is human action. To be human is to be an agent, although not all agents are human beings. The agency, according to Giddens, can lead to both the reproduction and the transformation of society. Practices are produced in a context of the duality of structure and agency (Rob Stones, 2005, Structuration Theory, pp.4-5) and are not themselves simply agency. It is the practices that reproduce social structures and these social structures can develop the mindset of the very vast populace of India, in particular the youth, by driving them in to the main stream of national development. With the given potential and India developing as a youth nation in the forth coming 15 years, there are dream projects by which I intend to draw schedule as to why we have still to move ahead in this area of sports, despite that other big nations are already on the pace of development far more than us.

## IMPORTANCE OF THE PROPOSED TOPIC AND OBJECTIVES OF THE RESEARCH

The sports culture in India is one prime issue which needs to be analyzed. The sociological mindset of parents towards sports which visualizes it only as a recreational activity (that too in very less number of cases) and not as a career growth prospect, the educational curriculum which puts more emphasis on academics leaving behind sports are some of the concerns which require investigation. Research directed at the relationship between parents and their children is important in that the behavior and approach of parents may impact the players' desire to continue playing sports. With this background, it is trusted that this study shall contribute towards a better understanding of the sociological factors which can be instrumental in promotion of sports, development of the youth and the nation.

## LITERATURE REVIEW

By naming 2005 The International Year of Sport and Physical Education, the United Nations did much to broaden the analysis of sport, and child and youth development, globally, and to increase the acceptance of sport as both an end and a means to aspects of international development, such as the Millennium Development Goals (Van Eekeren, 2006, p.19). Although much of the literature reviewed in this document uses definitions, concepts and evidence from high-income countries, such as Canada, the United States, the United Kingdom and Australia, a great deal of international attention is being paid to the potential utility of sport for child and youth development in Lower Middle Income Countries (LMICs). Recently, scholars have argued for the need to conduct prolonged, critical and empirical analyses of the utility of sport for child and youth development in LMICs, although this literature is only now emerging, and evidence of the success (or failure) of sport and child/youth development interventions in LMICs is scarce at this time (Auweele et al., 2006, p.15). With context to India, there is almost no research work done in this area, particularly with reference to the sociological measurements pertaining to growth and development of the children and youth through sports practices. As such, reliance on a single type or source of data (statistics, case profiles, and interviews with stakeholders and/or participants) will fail to capture the complexities of the relationship between sport and child/youth development and many studies need to be reflected upon, apart from evidence based research.

## RESEARCH METHODOLOGY

The data drawn upon in the present study has a sample size of 500 interviews, spread over the two big States of Uttar Pradesh (U.P.) and Bihar. 350 interviews have been conducted from Uttar Pradesh and 150 interviews from Bihar. The States of U.P. and Bihar had been chosen due to reasons of their population percentile (U.P. being the most populated and Bihar the third most populated state of India) (Census, India 2011), and due to their lagging behind in the human index of development. A choice of these states helped me in assessing the virtual impact of sociological development through sports. Geographically, districts (both empowered and underpowered were selected) from both the states were selected for interviewing, so as to get a mix of the sample and spatial classification method was used. Urban, Semi-urban and rural areas were given due consideration in my study, so as to make it more pragmatic and meaningful. For each interview, the questionnaire was bifurcated. The first part imbibed questions which were put up to the parents of the children (students) and the other part for the children (students). The age group of students interviewed ranged from 15 to 24 years. Prior to this, the first phase considered data collection for recruitment of families. Some initial questions relating to interviewee's sporting habits, what sports they ever did, or what sports will they be doing, how often they did these sports, who with, where they did them, and how they become involved in them were common to both. Furthermore, both interviews included questions regarding the parents' behaviors and beliefs in relation to the child's sports participation, thus shedding light on the children's socialization into sport. Children's sports activities, their schoolings, hobbies, interests towards other social activities, their inclination towards sports and which sport in particular, facilities in their schools or colleges and back at home, availability of telecommunication facilities such as mobile phones, internet etc., their experiences after playing, their level of satisfaction at the end of the day after playing, etc. were recorded. Gender consideration was given while interviewing the children. The parents interview scheduling consisted of their occupations, socio-economic background, whether they too hail from a sportive cultural background, and if yes, then whether they have tried to provide opportunities for their children, their views about national and international sports events and inclinations, their opinion about sport as a sociological tool for their children's development and growth, or sport as a leisure time activity, sport as a career objective, sport as a feel of patriotism, role of government in promoting sports, etc. Some interviews were recorded also. Marks in a point scale from 0 to 100 in groups of 0-10, 10-20, 20-30…were assigned for each question thereby quantitatively classifying the data. Frequency distribution was ascertained thereafter.

## RESULTS & CONCLUSION

It has been analyzed that the inclination of parents given their socio-economic background towards putting their children in sports activities shows a declining trend (i.e.27% and 24% in the 1 – 1.25 lac bracket) in both the States. The meager enhancement of 1% (i.e. 29% in 0.75 – 1 lac bracket) in the State of U.P. but again a dip in the same bracket in Bihar shows the disinclination. The overall percentage of inclination of the parents, who had been thoroughly questioned, is dismal. The mindset of these parents towards sports and social development is read as less impacting. Involvement and attainment in a 'field' are based on a combination of one's habitus and cultural capital and those groups that possess the most capital can dictate the legitimate means of access to the 'field'. The proletariat class suffers. The Socio-Cultural scenario is somewhat different, with some healthy factors. The parents were discussed about their social and cultural backgrounds, with not only sports but regarding participation in other co-curricular activities, such as indoor games, meetings in societies, attending panchayats, fairs, exhibitions, traditional dancing, singing and other such activities which make them and their children more vibrant and active. The results at Table 2 show that with the rise of income level, the inclination towards cultural activities and sports does increase. In many ways sport represents a social 'field' (Bourdieu, 1990), a structured space of positions that impose specific determinations on those who enter it and this has been tested. The observations given by the respondents establish that geographical location plays a vital role towards educating the mindset of the people. It is evident that the state of Uttar Pradesh takes lead in comparison to the state of Bihar. It was assessed that the per capita income of the state of UP is higher in relation to Bihar. Moreover, the various districts covered in the state of UP, pose the advantage that people take over. A good geographical location, which envisages the desired infrastructure, helps in aiding and enhancing the outlook of the parents and children/youth both. The parents informed that the availability of infrastructure somewhat incited them to send their children to playgrounds. However, in the state of Bihar, despite the less percentile in comparison to UP, we observe that there is increase in the percentage and involvement, and this goes to establish somewhat that geographical location does play a role in changing social awareness and belongings towards sports. The knowhow of Government Sports policies is very less, and as such there is no follow up in this regard from the participants. These policies are yet to make inroads, and therefore it becomes imperative for the Government of India to judicially exercise its authority and ensure that the sports development programs do reach its destination so as to benefit the populace at large. Observations on gender participation were heartening. It was the women which had been interviewed, and they were of the opinion that sports do change the mindset of children and youth. They compared sports with the physical work which they

were doing at home, and stated that this keeps them mentally and physically healthy. Naturally, the increase in income level provided them with more able opportunities. However, it was informed that female participation was less in comparison to male, and many factors such as environment, economic background, etc. were attributed, besides the male hierarchical approach. Rather than simply enhancing individual freedom and opportunity, sport-based intervention programs also serve as a form of social control and regulation. Basic education is important for gaining foothold in sports in order to think of social neoliberalism. Sport (organizations) can be viewed as a vehicle for generating different forms of capital, most notably economic, cultural, social and symbolic capital (Bourdieu,1986), from which certain benefits can be derived that enable social agents to improve or maintain their social position. The social environment, geographical conditions, educational arrangements and the regional economy determine to a large extent if personal development and ambition are able to flourish. The role of schools and colleges in promoting sports activities and social involvements is meager. Rather than simply enhancing individual freedom and opportunity, sport-based intervention programs also serve as a form of social control and regulation. Basic education is important for gaining foothold in sports in order to think of social neoliberalism. Sport (organizations) can be viewed as a vehicle for generating different forms of capital, most notably economic, cultural, social and symbolic capital (Bourdieu,1986), from which certain benefits can be derived that enable social agents to improve or maintain their social position. The social environment, geographical conditions, educational arrangements and the regional economy determine to a large extent if personal development and ambition are able to flourish. The role of schools and colleges in promoting sports activities and social involvements is meager

## EXPECTED CONTRIBUTION OF THE RESEARCH

The potentials that exist within sport are those that can help with fundamentally different views of the world perhaps based upon opportunities to encourage trust, obligations, redistribution and respect for sport in a more socially orientated humanitarian world. A broader discussion relates to the capacity of sociology to address multiple publics (Burawoy, 2005). This issue is as relevant to the activities of sociologists of sport as it is to other sociologists and, indeed, to all university teachers and researchers, particularly those who are involved in the social sciences. In India, the Sociology of Sports is yet to make a route. No work at all for the study of a sociological impact of sports on the development perspective has been carried out. References, books, bibliographies etc. in the fraternity of sports sociology in India are rare, to say, negligible. Studies such as the present one or for that sake leading to study of sociological interests in the field of sports are not present. With

the given youth potential of India, its young population, achievements in the field of sports, advancement in the area of Indian Sociology, advancement of the Indian Economy, and other co-related factors, the need and interest in the area of sports sociology and studies has risen. It was indeed a challenging assignment, as references from western countries can only be taken in to account. It is in this more detailed analysis that the power of Bourdieu's theory, and the importance of sports, will become most apparent.

The value of this work embarking on the problems will be important above all due to the need to awaken and develop "a sociological imagination" in Indian society, a humanistic approach to matters related to sport, and also to formulate future hypotheses that would be useful for more advanced empirical studies. Despite the growing number of actors and actions promoting sporting activity, it remains true that few of the young people are used to sports practices in India. To address the use of sports practices by the children and youth and inculcate a habit of indulging in to physical activities, this study visualizes those reasons which may prove to be of assistance in garnering their resources. The socio-political situation of the States of U.P. and Bihar is responsible for the underestimation of sports developmental trends in families. This study will for sure contribute towards this direction in understanding the reasons for underdevelopment in sports.

## BIBLIOGRAPHY & REFERENCES

1. Rowe, David and Gilmour, Callum, 2010, 'Sport, Media, and Consumption in Asia: A Merchandised Milieu, American Behavioral Scientist

2. Scheerder John, Vanreusel Bart and Taks Marijke, 2005, 'Stratification Patterns of Active Sport Involvement Among Adults, International Review for the Sociology of Sport

3. Burdsey, Daniel, 2006, 'If I ever Play Football, Dad, Can I Play for England or India? British Asians, Sports andDiasporic studies', Sociology

4. Spaaij, Ramon, 2009, 'Sport as a vehicle for social mobility and regulation for disadvantaged urban youth, Lessons from Rotterdam', International Review for the Sociology of Sport

5. Jarvie, Grant, 2007, 'Sport, social change and the public intellectual', International Review for the Sociology of Sport

6. Krawczyk Barbara and KrawczykZbiginew, 1989, 'Sociology of Sport in Scotland', International Review for the Sociology of Sport

7. XiongHuan, 2007, 'The Evolution of Urban Society and Social Changes in Sports Participation At the Grassroots in China', International Review for the Sociology of Sport

8. Davis, Nicholas W and Duncan, Margaret Carlisle, 2006, 'Sports Knowledge is Power Reinforcing Masculine Privilege through Fantasy Sport League Participation', Journal of Sports and Social Issues

9. Coakley, J. (2001) Sport in Society: Issues & Controversies. New York: McGraw-Hill

10.Bourdieu, P. (1986) Distinction: A social critique of the judgement of taste. London: Routledge

11.Bell, B, 2009. Sport Studies. Exeter: Learning Matters

12.Collins, M, 2009. Examining Sports Development. London: Routledge

13.Holt, N, 2008. Positive Youth Development through Sport. London: Routledge

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# YOGA THE PREVENTION AND MANAGEMENT FOR LETHAL SICKNESSES

**Dr. Limbaji Pratale**

**Associate Professor & Head, Department of Physical Education & Sports**

**SPDM Mahavidyalaya, Shirpur Dist. Dhule (Maharashtra)**

## ABSTRACT

Counteractive action of habit-forming infections need to be amazing and organized and it need to incorporate making ready of social aptitudes, basic leadership skills, family mediation, and so on. Correspondingly, compelling treatment is often long run, deliberate and complicated. physical exertion and yoga will be useful segments of thoroughgoing aversion and treatment programs. Then again, aggressive professional athletics rather increment the amount of hazard parts of substance-related problems (wounds, push, doping, uneven strain, weariness, unequal approach of life, and then forth.) sensible involvement with the use of yoga in substance subordinate patients and psychoneurotic players square measure documented. The upsides of yoga incorporate the reconciliation of physical exertion and unreeling. Adjacent to the current, yoga is not targeted, doesn't need pricey hardware and it tends to be used even in patients with serious medical problems. The act of yoga can assist people with dominant the sentiments and interests and obstruction management increments and expels the annoying elements from psyche. Yoga helps to keep up nice eudaimonia and giving opposition, stamina, essentiality and energy to the body. Yoga is that the best remedial and preventive drug. The strength of our body and brain depends upon the soundness of the eudaimonia of our inner organs the center, lungs, abdomen connected framework, organs, nerves framework, solid framework and then forth. Yoga practices tenderly tone and form the body, enhance stance, ability and boost feeling of prosperity advancement to positive eudaimonia, to the professional in increasing their skills and enhance the private satisfaction. **Keywords:** Yoga, Management, Sicknesses

## INTRODUCTION

Yoga is a specialty of right living and it works when consolidated in our step by step life. It wears down all pieces of the individual: the physical, mental, excited, spiritualist and powerful. The word yoga means 'solidarity' or 'solidarity' and is gotten from the Sanskrit word 'yuj' which implies 'to join'. Yoga improves the prosperity of the body and cerebrums. The word yoga expects to trouble or to join all pieces of the body and

mind. Getting a handle on solidarity and better than average assortment, yoga's conclusive point is a progressively significant relationship with ourselves and the world around use for some magnificent once we impact this affiliation we to can lead a genuine presence of grater happiness, affirmation and amicability.

"Yoga" begins from the Sanskrit root yuj, which implies "to join" or "to trouble". Yoga is an utilitarian guide, not a religion. Yoga is an out of date workmanship subject to a fitting game plan of progress for the body, mind, and soul. The continued with routine concerning yoga will lead you to a sentiment of agreement and flourishing, and moreover a slant of being at one with their condition. This is a clear definition. The demonstration of yoga makes the body strong and movable; it in like manner improves the working of the respiratory, circulatory, stomach related, and hormonal systems. Yoga acknowledges eager robustness and clarity of cerebrum. In the demonstration of Yoga a conclusive point is one of personal growth and self-affirmation.

**Yoga the Prevention and the Treatment for Substance-Related Problems**

1. **Asthma**

The only supportable treatment for asthma lies in yoga. Inhalers can save your life when you get an asthma attack but for a long-term cure you have to practice pranayama.

2. **Diabetes**

Diabetes is one of the major incurable diseases in the world. You cannot actually treat insulin resistance but some yoga asana like the triangle pose can help to regulate your blood sugar levels.

3. **Hypertension**

High blood pressure can be caused due to a number of reasons. It is a disease that can be cured only by regular practice of meditative yoga asana like the pranayama.

4. **Indigestion**

Indigestion is not just a disease but an epidemic among working people these days. But, you can treat indigestion with prescriptions by trying the child pose or wind relieving pose.

5. **Migraine**

Migraine headaches are often caused because there is not enough blood supply to the brain. Try the yoga poses like sirs-asana or complete headstand to treat migraine headaches instead of popping pain killers.

**6. Lower Back**

Pain Lower back pain has become a chronic disease among working professionals and people even undergo surgery for it. Try yoga poses like tadasana or the tree pose.

**7. Arthritis**

Arthritis is a disease that causes severe joint pain and unfortunately incurable. But yoga can help control the amount of pain caused due to arthritis. Try the surya namaskar as a versatile way to cure arthritis pain.

**8. Liver Problems**

Liver problems can range from minor ingestion to the severe fatty liver syndrome. To have your liver healthy, try some very basic yoga poses that increase the blood circulation in the tummy. The bridge pose and cat pose are good instances.

**9. Depression**

Yoga is one of the most potent cures for depression. If you don't want to be hooked on on anti-depressants and sleeping pills, try yoga asanas like uttanasana.

**10. Poly Cystic Ovaries**

PCOS is one of the epidemics that are attacking young women these days. The symptoms are irregular periods and it can even lead to infertility. So try yoga poses like the corpse pose to cure ovarian cysts without medication or surgery.

## CONCLUSION

Yoga helps in maintaining good health and giving resistance, stamina, vitality and vigor to the body. Yoga is the best curative and preventive medicine. The health of our body and mind depends on the soundness of the health of our internal organs the heart, lungs, digestive system, glands, nerves system, muscular system etc. Yoga exercises gently tone and shape the body, improve posture, flexibility and contribute to feeling of well-being promotion to positive health, to the professional in increasing their skills and improve the quality of life.

**REFERENCES:**

1. Williams K, Steinberg L, Petronis J. Therapeutic application of iyengar yoga for healing chronic low back pain. Int J Yoga Ther. 2003;13:55–67.
2. Raub JA. Psychophysiologic effects of hatha yoga on musculoskeletal and cardiopulmonary function: A literature review. J Altern Complement Med. 2002;8:797–812
3. Collins C. Yoga: Intuition, preventive medicine, and treatment. J Obstet Gynecol Neonatal Nurs. 1998 27:563–8.
4. Nešpor, K.: Yoga in addictive diseases - Practical experience. Alcologia, 2001 (13):21-25.
5. Woolery A, Myers H, Sternlieb B, Zeltzer L: A yoga intervention for young adults with elevated symptoms of depression. Altern Ther Health Med, 2004 (10):60-63.
6. www.philmilgrom.com.
7. www.performanephysiotherapy.com
8. www.betterhealth.vic.gov.au

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# COMPARATIVE STUDY OF SELECTED COORDINATIVE ABILITIES OF SELECTED TEAM AND INDIVIDUAL SPORTS PLAYERS

**Dr. Meena Pawar**
**Director of Physical Education**
**Dang Seva Mandal's, Dr. Vijay Bidkar Arts Commerce and Science College Abhona**
**Tal. Kalwan, Dist Nashik (MS)**

**ABSTRACT:**

The main purpose of the study was to compare the selected coordinative abilities of selected team and individual sports players. For the purpose of the study 30 inter-collegiate male players, 10 from each selected team and individual sports of Degree College of Nashik District, Nashik District. Age of the subjects was ranging from 18 to 25 years. The players of team sports were selected from football games, volleyball and hockey. The players of individual sports were selected from wrestling, athletic and badminton games. The study was further restricted to the Orientation ability, Differential ability and Rhythm ability of coordinative abilities. The Orientation ability was measured by using numbered medicine ball run test and score was recorded in seconds. Differentiation ability was measured by using backward medicine ball throw test and score was recorded in number of points. Rhythm ability was measures by using sprint at a given rhythm test and score was recorded in seconds. The data pertaining to this study were collected on the selected subjects by administering the above-mentioned appropriate tests as suggested by Peter Hirtz. The findings of the study showed that there was significant difference between the players of Team and Individual Sports in Orientation Ability and Rhythm Ability among the players of Team and Individual Sports. There was no significant difference between the players of Team and Individual Sports in Differentiation Ability. **Key words:** Orientation ability, Differentiation ability, Rhythm ability, Sports Players

## INTRODUCTION:

In sports today best performance can only be achieved through a meticulously planned, executed and controlled training system loosed on the scientific knowledge, theoretical and methodical fundamentals of sports training.

The developing tendencies in international sports, especially in team games are identified as the increase in game tempo, tougher body game and greater variability in technique and tactics. An increased performance

level can only be achieved by working and training of all major components i.e. technique coordination, tactics, physical fitness and psychological qualities, apart from these components, one more factor which is now a day's know as coordinative abilities also play a greater role. A sportsman can compete effectively only by a certain coordinative mastery of the technique.

Coordinative abilities enable the sports man to do a group of movement with better quality and effect.

The speed of learning of skill and its stability is directly dependent on the level of various coordinative abilities. Coordinative abilities are needed for maximal utilization of conditional abilities, technical skills and tactical skills **(Hardyal Singh, 1991)**.

Insufficient training of coordinative abilities limits the performance ability especially at higher levels. On the contrary, better developed coordinative ability provides an essential base for faster and effective learning, stabilization execution in game situation **(Kalbed Lother 1889)**.

In different sports requirement of coordinative abilities are different and these abilities ensures higher movement efficiency and movement economy, whereas in some sports events they help in higher movement frequency with high explosiveness and force application. In strength sports they help in putting maximum effort in a short time and at the right time. But, where the technique dominates the events these abilities help in better learning, stabilization, variability. Apart from performance improvement, in team games coordinative abilities ensures an effective use of tactical abilities in the continuous changing situations **(Kalbed Lother 1889).**

So the research scholar was interested to undertake the study stated as **"Comparative Study of Coordinative Abilities of Selected Team and Individual Sports Players".**

## SIGNIFICANCE OF THE STUDY:

Research is generally conducted for evolving new ideas which was essential for the society. The present investigation might have the following contributions.

i. The result is of the study would help to know the coordinative abilities of Team and Individual sports.
ii. The findings of the study might be helpful to analyze and classify the players based on coordinative abilities.
iii. For diagnostic purpose.
iv. To develop training methods based on the results of this study.

## HYPOTHESIS:

On the basis of available literatures and scholars own understanding of the problem it was hypothesized that there would be significant difference in between the Team and Individual Sports in-

i. Orientation ability
ii. Differentiation ability
iii. Rhythm ability

## MATERIAL AND METHOD:

For the present study 30 inter-collegiate male players, 10 from each selected team and individual sports of Degree College of Nashik District. Age of the subjects was ranging from 18 to 25 years. The players of team sports were selected from football games, volleyball and hockey. The players of individual sports were selected from wrestling, athletic and badminton games.

The study was further restricted to the Orientation ability, Differential ability and Rhythm ability of coordinative abilities.

The Orientation ability was measured by using numbered medicine ball run test and score was recorded in seconds. Differentiation ability was measured by using backward medicine ball throw test and score was recorded in number of points. Rhythm ability was measures by using sprint at a given rhythm test and score was recorded in seconds.

The data pertaining to this study were collected on the selected subjects by administering the above-mentioned appropriate tests as suggested by Peter Hirtz.

## RESULTS AND DISCUSSION:

To determine the significant difference if any in the selected Coordinative ability between the players of Team and Individual Sports One-way analysis of variance (F-ratio) and if the ANOVA was found to be significant then Least Significant Difference (LSD) Post Hoc test statistical techniques were employed to determine the paired mean differences among the selected sports. The significant level was set at 0.05. The results pertaining to this study have been presented in the following tables.

**Table – 1**

**Summary of One Way Analysis of Variance for the Data on Orientation Ability, Differentiation Ability and Rhythm Ability of Team and Individual Sports Players**

| Variables | Source of Variance | Degree of Freedom | Sum of Square | Mean Sum of Square | F- Ratio |
|---|---|---|---|---|---|
| Orientation Ability | Between the Groups | 5 | 7.87 | 1.58 | 4.91* |
| | Within the Groups | 54 | 17.17 | 0.33 | |
| Differentiation Ability | Between the Groups | 5 | 10.89 | 2.080 | 0.687@ |
| | Within the Groups | 54 | 163.3 | 3.024 | |
| Rhythm Ability | Between the Groups | 5 | 0.401 | 0.080 | 4.00* |
| | Within the Groups | 54 | 1.096 | 0.020 | |

*Significant at 0.05 level Tabulated 0.05 (5,54) = 2.384

An analysis of table - 1 reveals that there are significant difference in Orientation ability and Rhythm ability among the team and individual sports players, because the calculated F - value of 4.91and 4.00 are greater than the tabulated F- value of 2.384 at 0.05 level for 5, 54 as well as table-1 also indicate that there is no significant difference in Differentiation ability because the calculated F- value of 0.687 is less than the tabulated F-value of 2.387at 0.05 level for 5, 54 degrees of freedom. Since the calculated F - ratio is found to be significant, therefore to determine the paired mean difference among the selected team sports and individual sports LSD Post Hoc test was computed and it has been shown in Table – 2.

The findings of table- 2 reveals that the mean of Orientation Ability differs significantly in between Football and Wrestling (MD=0.651), Volleyball and Wrestling (MD=0.691), Hockey and Wrestling (MD=1.123),

Hockey and Badminton (MD=0.655) Wrestling and Athletic (MD= 0.977), Athletic and Badminton (MD= 0.509) as their mean difference values are greater than critical difference value of 0.507 at 0.05 level of confidence. The table-2 also indicates that there is no significant mean difference in between the players of Football and Volleyball (MD= 0.04), Football and Hockey (MD= 0.472), Football and Athletic (MD= 0.326), Football and Badminton (MD= 0.183), Volleyball and Hockey (MD= 0.432), Volleyball and Athletic (MD= 0.286), Volleyball and Badminton (MD= 0.223), Hockey and Athletic (MD= 0.146), Wrestling and Badminton (MD= 0.468) as their mean difference values are less than critical difference value of 0.507 at 0.05 level of confidence.

As well as The findings of tables-2 also reveals that the mean of Rhythm Ability differs significantly in between Football and Volleyball (MD=0.157), Football and Wrestling (MD=0.207), Football and Athletic (MD=0.212), Volleyball and Badminton (MD=0.156), Hockey and Wrestling (MD=0.15), Athletic and Badminton (MD= 0.161) as their mean difference values are greater than critical difference value of 0.126 at 0.05 level of confidence. Insignificant difference also observed in between Football and Hockey (MD= 0.057), Football and Badminton (MD= 0.001), Volleyball and Hockey (MD= 0.01), Volleyball and Wrestling (MD= 0.05), Volleyball and Athletic (MD= 0.005), Hockey and Athletic (MD= 0.105), Hockey and Badminton (MD= 0.056), Wrestling and Athletic (MD= 0.045), Wrestling and Badminton (MD= 0.045) as their mean difference values are less than critical difference value of 0.126 at 0.05 level of confidence.

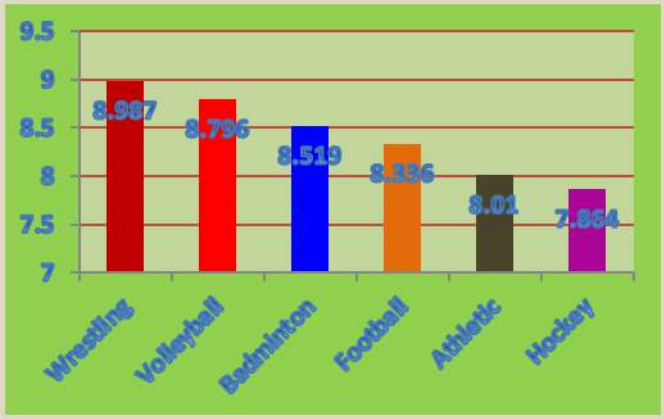


**Fig-1: Ordered Mean Difference of Orientation Ability among the players of Team and Individual Sports**

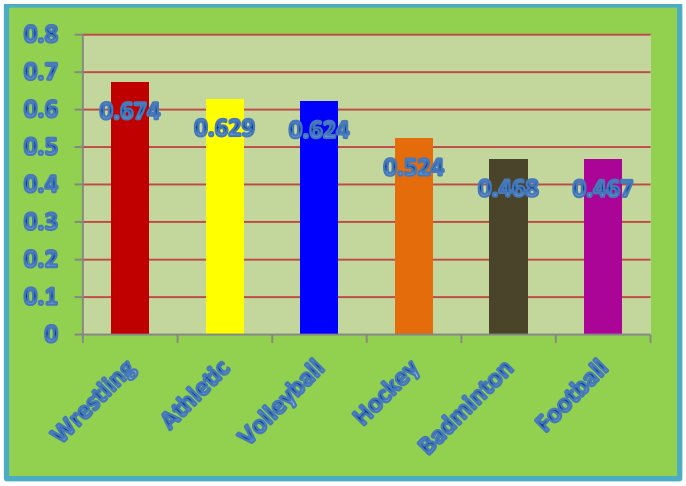


**Fig-3: Ordered Mean Difference in the Variable of Rhythm Ability among the players of Team and Individual Sports.**

**DISCUSSION:**

The Findings of Table-1and 2 revealed that there were significant differences among the players of Team and Individual sports in the variables of Orientation Ability and Rhythm Ability; it may be attributed to the nature of sports movements in team sports. Most of the coordinative abilities are badly needed for better performance in team sports. As it is well known fact that a team game/sports consists of groups cohesiveness, co-operation and integrated efforts hence such result might have observed in this study. The variable of Differentiation ability did not show significant difference among the players of team and individual sports it might be because the test item to assess differentiation ability was such both the team sport and individual sports require this ability for better performance, hence such result might have occurred in this study.

**CONCLUSIONS:**

Recognizing the limitations of the study and on the basis of results obtained from the study, following conclusions are drawn: -

i. There was significant difference between the players of Team and Individual Sports in Orientation Ability.
ii. Significant difference was observed in the variable of Rhythm Ability among the players of Team and Individual Sports.
iii. There was no significant difference between the players of Team and Individual Sports in Differentiation Ability.

**REFERENCES:**

Bhanot J.R. and Sidhu L.S. "A Comparative Study of Reaction Time in Indian Sportsman Specializing in Hockey, Volleyball, Weight lifting and Gymnastics", Journal of Sports Medicines and Physical fitness. Vol. 12:1,(1980):116.

Das Sudip, "Comparison of Rhythm Ability of Female Soccer Players of Tripura State at Different Levels", International Jounal of Movements Education and Sports Sciences, Vol.2, No.2, (Oct. 2013), p-ISSN: 2278 – 0793 and e- ISSN: 2321-377.

Kar Subhabrata, "A Comparative Study between Coordinative Abilities of Artistic and Rhythmic Gymnasts", International Education E-Journal, Vol. III, Issue-IV, (Oct-Nov-Dec 2014).

Khetmails Mahesh Sawata, "Comparison between Selected Coordinative Abilities And Motor Abilities Of Female Athletes Of Selected International School In Pune", International Journal Of Research Pedagogy And Technology In Education And Movement Science,Vol.01,Issue 02, (May 2012).

Lohchab Prya. "Coordinative Abilities of Intercollegiate and Interuniversity Level Female Basketball Players – A Comparative Study", International Research Journal of Management Sociology and Humanities.

Pacuraru A., Preda C. and Ciocoiu L., "Comparative Study on the Coordinative Ability of Primary School (Second Grade)", Bulletin of the Transilvania University of Brasov, Vol. 3 (52), (2010).

Puri Prabhash Chand, Mishra Praveen, Jhajharia Birendra and Singh Mandeep, "Coordinative Abilties of Volleyball in Different Age Groups: A Comparative Study", International Journal of Behavior Social and Movement Sciences, (ISSN: 2277-7547) Vol.03, Issue 03, (July 2014).

Raju G.P., Johnson P. and . Raja P.S Babu Marison, "Comparison of Coordinative Abilities Among 11 – 14 Year School Boys", International Journal of Health. Physical Education and Computer Science in Sports, ISSN 2231 – 3265 Volume No.12, No.1.

Sharma Sandeep and Gangwar Narendra, "Comparison of Selected Coordinative Abilities Between Football and Hockey Male Players", IJMESS Vol.3, No.1 ( March,2014) p- ISSN:2278-0793 and e-ISSN: 2321-3779

Singh Dilbag and singh Baldev, "Comparison Coordinative Ability between Male Participants Belonging to Handball and Basketball", International Journal of Arts & Education Research, Vol.3, Issue-4, (June- July 2014).

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# A STUDY OF BOLDNESS BEHAVIORAL ATTITUDE OF PLAYERS OF KARATE, BOXING AND WRESTLING

**Dr. Prashant Taur**

**Associate Professor and Head, Department of Physical Education & Sports**

**M.S.S. College Ambad, Tq. Ambad, Dist. Jalna (Maharashtra)**

**prashanttaur1877@gmail.com**

## ABSTRACT

The purpose of the study was to compare the Boldness Behavioral Attitude of Players of Various Combat Games. For the present study researcher has selected 30 players from Pune within group design was used for the present study. 10 Players from each (Boxing, Wrestling and Karate Players) who were participated in Inter University Tournament of Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar was selected for study by Purposive non – probability random sampling method. The age range of respondents was 18-25 years. Multi Assessment Personality Series (MAPS) Questionnaire was used for collection of data. This scale was developed by Sanjay Vohra. The scale contains 147 complete sentences and each item is provided three alternatives the players had to select one of the three alternative statements. And only the score of boldness was taken for this study. To see the difference between Boxing, Wrestling and Karate players in reference to Boldness Behavioral Attitude One Way Analysis of Variance was applied. Significant level was kept at 0.05 level. Result shows that by seeing the Mean of boldness of players of different combat games there is differences. To see these differences was significant or not researcher has calculated One - Way Analysis of Variances, it was found that there was significant different between players of different game in reference to Boldness because the calculated 'f' value i.e. 7.58 which is much greater than tabulated 'f' value 3.35. Above study revealed that difference was found between the means of Boxing, Wrestling and Karate Players. In conclusion it can assumed that if players differ in the extent that they change their behavior based on their previous and current experiences, this may represent a potential mechanism through which social roles can be generated and reinforced to create even longer lasting differences between players. In other words, psychological factors may be maintained by participation in various games and sports activities because of their role in social coordination. **Keyword:** Boldness Behavioral Attitude, Boxing, Wrestling and Karate Players.

## INTRODUCTION

Boldness implies daring, courage and confidence. Rather than going with the flow boldness goes against the tide. It dares to disagree with popular opinion for the sake of affirming what is true, right, and just. When others do wrong, boldness stands for what is right. Every person searches for things, people, or ideas in which to find stability and security. Some choose to put their trust in popular opinion, the security of friends, or the prosperity of wealth. However, opinions change; friends can betray a trust and wealth can vanish overnight. Truth, right, and justice on the other hand, provide a foundation which has remained far more stable throughout history than has opinion, popularity or abundance. Boldness is the gift of God to overcome this enemy. Boldness is confidence in the gospel, a message that defies fear to the uttermost. Boldness is necessary if we are going to be risk-takers and not self-preservers. And risk-taking is absolutely necessary for the progress of salvation. Finally, as I started into this issue, it became apparent to me that boldness is a highly neglected topic and one that it is vital to every believer. So many people are controlled by fears of all kinds. The person who receives the gift of boldness is delivered from a multitude of transgressions and lives in peace. Boldness is totally opposite of fearfulness. To be bold implies a willingness to get things done despite or taking risks. Boldness may be a behavioral attitude that only certain individuals are able to display. For example, in the context of sociability, a bold person may be willing to take the risk shame or rejection in social situations arising, or to bend the rules of etiquette or politeness. An excessively bold player may be aggressively while performing his skill or taking a shot. Boldness may be contrasted with courageousness of an individual and latter implies having fear but confronting it. But perhaps we could think about how evolutionary significance of boldness might play a part of debate. Players are a fiercely social and cooperative in nature and protecting members of our close social group has a sound evolutionary basis. By reducing the risks to those with whom we interact or share the same genes, moreover our own genetic material is preserved. We're also having a strong social interaction with different group increases the chances of humanity. At the same time it's too simple to say that those players having higher boldness is associated with higher aggression. In this case, the researchers suggest that the players who are more exposed to take risk cope with this by responding more aggressively and so more boldly to threat his attitude. Players today usually constrain their aggression within carefully outlined legal and social rules so that they can show their optimum level of performance. But perhaps the aggressive nature of player in rugby still scratch an evolutionary itch inspired by an individual's impulse to be bold. Hence researcher wants to know the boldness level of players of different games.

## METHOD

For the present study researcher has selected 30 players from Pune within group design was used for the present study. 10 Players from each (Boxing, Wrestling and Karate Players) who were participated in Inter University Tournament of Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar was selected for study by Purposive non – probability random sampling method. The age range of respondents was 18-25 years.

## MEASURES

Multi Assessment Personality Series (MAPS) Questionnaire was used for collection of data. This scale was developed by Sanjay Vohra. The scale contains 147 complete sentences and each item is provided three alternatives the players had to select one of the three alternative statements. And only the score of boldness was taken for this study.

## STATISTICAL ANALYSIS

To see the difference between Boxing, Wrestling and Karate players in reference to Boldness Behavioral Attitude One Way Analysis Of Variance was applied. Significant level was kept at 0.05 level.

**Table – 1**

**Mean & Standard Deviation of Boldness**

| Game | Mean | S D |
|---|---|---|
| Boxing Players | 8.2 | 1.29 |
| Wrestling Players | 9.8 | 0.89 |
| Karate Players | 7.4 | 0.92 |

**Table – 2**

**Comparison of Boldness of Players of different Games**

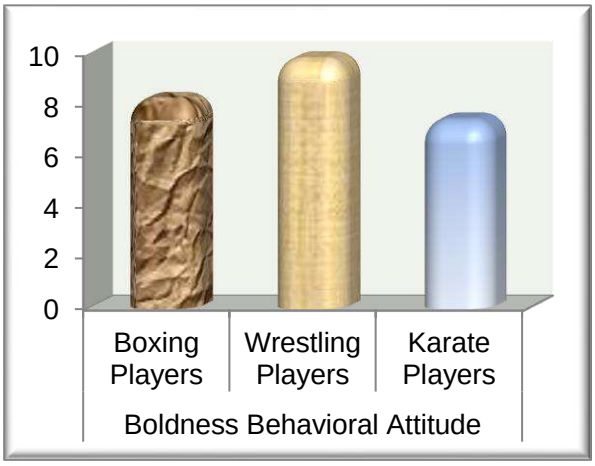
| SV | SS | df | MS | F |
|---|---|---|---|---|
| Between | 27.288 | 2 | 13.644 | **7.58*** |
| Error | 48.6 | 27 | 1.8 | |

*Significant at 0.05 level  tab 'f' at $_{(2,27)}$ = 3.35

## RESULT

Above tables shows that by seeing the Mean of boldness of players of different combat games there is differences. To see these differences was significant or not researcher has calculate One - Way Analysis of Variances, it was found that there was significant different between players of different game in reference to Boldness because the calculated 'f' value i.e. 7.58 which is much greater than tabulated 'f' value 3.35.

## GRAPH




## CONCLUSION

Above study revealed that difference was found between the means of Boxing, Wrestling and Karate Players. To see these differences was significant or not One Way Analysis of Variance was applied. It was found to be significant. It can assumed that if players differ in the extent that they change their behavior based on their previous and current experiences, this may represents a potential mechanism through which social roles can be generated and reinforced to create even longer lasting differences between players. In other words, psychological factors may be maintained by participation in various games and sports activities because of their role in social coordination.

## REFERENCES


- Dall S. R., et. al. (2012) An evolutionary ecology of individual differences, Ecology Letters: 15.
- King A. J., et. al. (2009) The origins and evolution of leadership, Current Biology: 19.
- "Wikipedia: Be bold", Wikipedia, 2018-08-21, retrieved 2018-08-25
- "Baucis and Philemon - Myth Encyclopedia - mythology, Greek, people". Mythencyclopedia.com. Retrieved 2013-08-25.
- A Vison for prayer and missions in Africa, send56.org.

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# CORRELATION BETWEEN SELECTED ANTHROPOMETRIC PARAMETERS AND PERFORMANCE OF SWIMMING PLAYERS

**Dr. Pravin Shiledar**

**Associate Professor and Head, Department of Physical Education & Sports**

**Arts and Science College, Patoda, Dist. Beed (MS)**

**ABSTRACT:**

The purpose of this study was to investigate the anthropometrical measures and its correlation with the performance of swimming players. To collect the Data, subjects were selected from different Universities who played at National level swimming tournaments. Hundred Swimming players were selected as the subjects of the study. The subjects were selected on simple random sampling method. Obtained data was statistically analysed by using descriptive and differential analyses. Mean and Standard Deviation were calculated for descriptive analysis and Pearson Product Moment Coefficient of Correlation was used for deferential analysis. Proposed Hypothesis was tested at the level of significance in 0.05. It was observed that the anthropometrical parameters viz. Shoulder-girth, sitting height, & Chest circumference shown very high relationship in positive significance. Wherein Calf circumference & standing height shown substantial relationship and biceps circumference shown slight relationship. On the contrary, though body weight shown slight relationship but was in negative significance. Thereby, it was concluded that Swimming sports need special type of anthropometrical measures at its variability. Further, the parameter with optimal strengthen capacity viz. Shoulder Girth, Sitting Height, Chest Circumference, Calf Circumference and Standing Height contributed to enhance the performance of Swimming players accordingly. **Keywords:** Anthropometric parameters, Swimming performance.

## INTRODUCTION:

Anthropometry is an external measurement of human body parts. These measurements may be held either objectively or subjective. In the field of sports & games and in Physical education, the anthropometrical measures are commonly used to associate with physical performance. On conducting a research study, Cureton was observed that all round athletic ability is characterised by wide shoulder width compared to hip width. Davenport's Crural has also established an Index, which is found as a valuable guide for the selection of individual's build in an agility pattern for bony leverage. Higher values of leg length, trunk length indicated

agility types. Ability to putting and throwing is indicated by relatively greater height and arm span etc. Garary, Levine and Carter after an intensive study of Anthropometric Measurements of Olympic Athletes concluded that, top level performance in particular event demands particular type of body size and shape. They established strong relationship between the structure of an athlete and the specific task (event) in which he excelled.

Considering all above cited and in special interest of the scholar, he has conducted a research study under the heading "*Correlation between selected anthropometric parameters and performance of Swimming players*". Thus, the observations and conclusions are presented in this publication.

**METHODOLOGY:**

Present research study was basically designed as Status-survey descriptive type. It was conducted during the All India Inter zone Swimming championship held at Panjab University, Chandigarh in Oct. 2016. Hundred Swimming players participated at the level of National tournament were selected to conduct the study.

The subjects were selected on simple random sampling method from different Universities. Subjects were male players and of 18 to 28 years old.

To evaluate the performance of Swimming players, AAPHER Youth Physical Fitness Test with six variables (viz. Pull-ups, Sit-ups, Standing Broad Jump, Shuttle-Run, 50 Yds. dash & 600 Yds. Run/&walk) was administered.

**MEASURING EQUIPMENTS:**

In the present study, to obtain required data the anthropometrical parameters were measured. For this, the equipments that had been used are given as follows-

1. Body weight was measured by Weighing Machine.
2. Standing Height was measured by Stadiometer and Scale.
3. Sitting Height & Biceps Circumference were measured Steel tape.
4. Shoulder Girth, Chest Circumference and Calf Circumference were measured by Flexible- tape.

**PERFORMANCE EVALUATION:**

To evaluate the performance of the Swimming players, six skills viz. Hand to hand pass, Wet pass, Shooting, Dribbling, Defensive and Offensive skill test were tried out. Thus the performances score exhibited by the Swimming players were observed by the three judges, appointed by the investigator.

Total scoring was calculated from sums of the score allotted for the cited six skills. Finally, correlation between anthropometric parameters and the selected variables were drawn out and the inferences were fixed.

**STATISTICAL TREATMENT:**

Collected data was tabulated and analysed by administering the statistical treatment. The inferences and conclusions were made by using descriptive and deferential analysis. Mean and Standard Deviation were finds out for descriptive analysis and The Pearson Product Moment Coefficient of Correlation was used for differential analysis.

Proposed Hypothesis was tested at the level of significance in 0.05.

Thus, these are presented in the following table and depicted graphically in the respective figures.

**Table - 1** Table showing, Mean and Standard Deviation in regards the anthropometric parameters and the performances scores exhibited by the Swimming players

| Variables | Mean | SD | Correlation Coefficient |
|---|---|---|---|
| Performance | 31.10 | 3.78 | |
| Body Weight | 76.20 | 11.87 | -0.309* |
| Standing Height | 175.03 | 5.56 | 0.459* |
| Sitting Height | 34.63 | 2.63 | 0.755* |
| Biceps Circumference | 14.30 | 3.90 | 0.213@ |
| Shoulder Girth | 18.13 | 3.23 | 0.785* |
| Chest Circumference | 39.13 | 4.13 | 0.743* |
| Calf Circumference | 16.80 | 1.88 | 0.550* |

*Significant at .05 level of confidence r .05 (28) 0.361

Above table No. 1 showing the correlation between the performances exhibited by the Swimming players and the relative anthropometric measures. It further reveals the Mean-scores and standard deviation of selected anthropometric variables and thereby obtained the values of correlations. Viz. Performance (31.10 $\pm$ 3.78); Body weight (76.20 $\pm$ 11.87), -0.309*; Standing Height (175.03 $\pm$ 5.56), 0.459*; Sitting Height (34.63 + 2.63), 0.755*; Biceps Circumference (14.30 + 3.90), 0.213*; Shoulder Girth Circumference (18.13 + 3.23), 0.785*; Chest Circumference (39.13 + 4.13), 0.743* and Calf Circumference (16.80 + 1.88), 0.550*.

Thus, it is observed that, with respect to Body weight, obtained value of coefficient Correlation was (r = -0.309) which was less than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. Though, statistically the Correlation was found insignificant, there exits slight negative correlation. Thus, it was concluded that, in regards with performance of Swimming players, Body weight may be the negative affecting factor i.e. greater the body weight, negative effect will also be the greater. In other words average body weight will be more beneficial to enhance the performance.

The same is depicted graphically in figure No. 1.

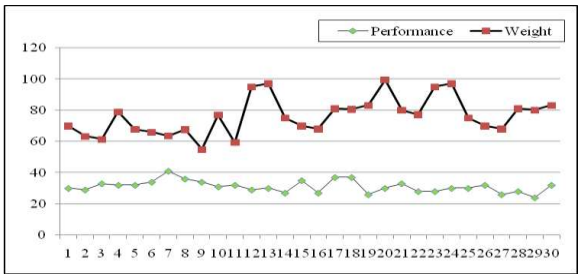



**Figure-1:** Showing, values of performance exhibited by Swimming players and body weight score.

Controversially to body weight, it was observed that, with respect to Standing Height, obtained value of r (0.459) was greater than the tabulated value (0.361) at 0.05 levels with 28 degree of freedom. It indicates that, there exists substantial positive significant correlation. Thus it was concluded that, in regards with performance of Swimming players, Standing Height, plays the substantial role to enhance the performance. In other words greater the standing height will give greater contribution towards the enhancement in performance of Swimming.

The same is presented graphically in figure No. 2.


**Figure-2:** Showing, values of performance exhibited by Swimming players and Standing Height score.

Similarly, it was observed that, with respect to Sitting Height, obtained value of r is (= 0.755), which was greater than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. It indicates that, significance exist in very high positive correlation. Thus it was concluded that, in regards with performance of Swimming

players, Sitting Height plays very high role in positive ways. In other words greater the sitting height will last for greater performance of the Swimming players.

The same is depicted graphically in figure No. 3.

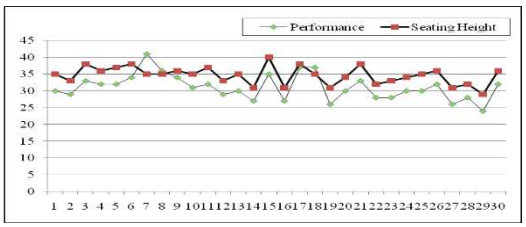



**Figure-3:** Showing, values of performance exhibited by Swimming players and Sitting Height score.

It was further, observed that, with respect to Biceps circumference, obtained r value was (= 0.213), which was lesser than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. It indicates that, though statistically the Correlation was found insignificant, there exits slight negative correlation. Thus it was to be concluded that, in regards with performance of Swimming players, Biceps circumference do not helps much to be performed in better ways.

The same is presented graphically in figure No. 4.

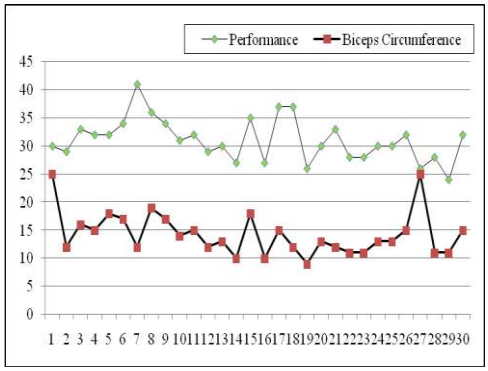



**Figure-4:** Values of performance exhibited by Swimming players and Biceps circumference score.

It was further observed that, with respect to Shoulder Girth, obtained value of r was (= 0.785), which was much greater than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. It indicates that, significance exists in very high positive correlation. Thus it was concluded that, in regards with performance of Swimming players, Shoulder Girth plays very high role in positive ways. In other words greater the shoulder girth, will assures for best performance of the Swimming players.

The same is presented graphically in figure No. 5.

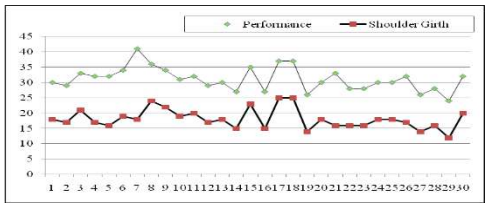
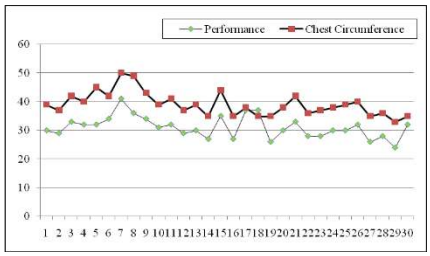



**Figure-5:** Showing, values of performance exhibited by Swimming players and Shoulder Girth score.

It was further observed that, with respect to Chest Circumference, obtained value (r = 0.743) of coefficient Correlation was greater than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. It indicates that, significance exists in very high positive correlation. Thus it was to be concluded that, in regards with performance of Swimming players, Chest Circumference, have greater role in enhancing the performance i.e. greater the chest circumference will help to exhibits higher level of performance.

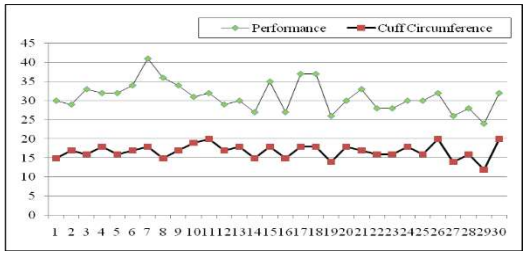
The same is presented graphically in figure No. 6.




**Graph-6:** Shows values of water performance and chest circumference score.

It was further observed that, with respect to Calf Circumference, obtained value (r=0.550) of coefficient Correlation was greater than the tabulated value (0.361) at 0.05 level with 28 degree of freedom. It indicates that, there exists positive significant correlation. Thus it was to be concluded that, in regards with performance of Swimming players, Calf Circumference, is beneficial i.e. bigger Calf may give greater propelling speed of swimming.

The same is depicted graphically in figure No. 7.




**Graph-7:** Shows values of water performance and Calf circumference score.

## CONCLUSION:

In overall, it was concluded that, amongst the evaluated variables, Shoulder-girth, Sitting-height, Chest-circumference, Calf-circumference and standing-Height) shown positive significant relationship and thus contributing to higher level of performance to be exhibited by the Swimming players in the given sequential order. Whereas, other 2 variables (viz. body weight, biceps circumference) shown low significant relationship i.e. in regards with performance of Swimming players, Body weight may be the negative affecting factor (greater the body weight, negative effect will also be the greater). In other words average body weight will be more beneficial to enhance the performance. Further Biceps circumference may not assist to perform better or lose anything. Thus, it can be said the sport like Swimming requires specially sized of constituting body parts to enhance the performance at the National level tournament of Swimming.

## REFERENCES:

Alimardani, Ahmad et al. (2012). Relationship between Physical Fitness and Anthropometric Indicators in Non-Athlete Students. Annals of Biological Research, 3 (9), 4617-4621.

Cureton, Thomas K. (1951). Physical Fitness of Champion Athletes. Urbana: The University of Illinois Press, 49.

Karpovich, Peter V. and Wayne E. Sinnig (1971). Physiology of Muscular Activity. Philadelphia: W.B. Saunders Co., 32.

Nikbakht, Masoud. (2011). Relationships between Somatotype, Anthropometry and Physical Fitness Variables in Untrained University Students. Journal of Physical Education and Sport, 11 (2), 211-214.

Patel, Mayurkumar A. & Nisith Kumar Datta, (2013). Relationship of Anthropometric Measurements and Physical Fitness Components in Football Players. International Journal of Physical Education & Sports Sciences, 6 (1).

Philip, D. Allen and James E. Hornak (1979). Measurement and Evaluation in Physical Education. New York: John Willey and Sons, 223.

Rathore, Vishan Singh. & Mukesh Kumar Mishra (2016). Anthropometric Variables as Predictors of Speed Ability of Physical Education Students. International Journal of Physical Education, Sports and Health. 3 (1), 140-144.

Taker, Mukesh Kumar & Mohan Lal (2015). Relationship of Anthropometric Measurement on the Performance of Swimmers. Times International journal of Research, 2 (2), 30-39.

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# COMPARATIVE STUDY OF ASPIRATION LEVEL OF VARIOUS LEVEL OF FEMALE KHO-KHO PLAYER

**Dr. Sandeep Jagannath Jagtap**
**Director of Physical Education**
**Shri Sant Savta Mali Gramin Mahavidyalaya,**
**Phulambri Dist. CSN (Maharashtra)**
**sunsport7349@gmail.com**

**Anjana Pandit**
**Research Scholar,**
**Dr. Babasaheb Ambedkar Marathwada University,**
**CSN (MS)**

## ABSTRACT

The purpose of the study was to compare Aspiration Level various level of Female Kho-Kho player. For this sixty (60) Female Kho-Kho player, 20 from each participated in the Maharashtra State Tournaments (20 State Players), Inter Collegiate Tournaments of Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar (20 Inter Collegiate Players) and Inter University Tournaments (20 Inter University Players) with the help of purposive sampling method were selected from Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar. The age of the Kho-Kho Players were ranged 18 to 25 years. Subjects did not use any ergogenic aids or supplementations and they were all free from any injuries during the collection of data. To see the level of aspiration researcher has selected 'The level of aspiration measure test', which Mahesh Bhargava and M. A. Shah constructed, were distributed to the players and the same were collected back after having filled by the players. Statistical Analysis was done based on One-Way Analysis of Variance (ANOVA). The collected data were statistically analyzed with f-test. The level of significance was significant at 0.05 levels. Result shows that there was significant difference were found in Level of Aspiration among Inter University, State and Inter Collegiate Kho-Kho Players as obtained F-ratio was 6.231 which was greater than that of required tabulated 'F' value of 3.158 at .05 level of significance with (2,57) degree of freedom. Hence,

Post Hoc test was applied to see the Mean Difference among Inter University, State and Inter Collegiate Kho-Kho Players in reference to Level of Aspiration. The significant difference was found only between Inter University Kho-Kho and Inter Collegiate Kho-Kho in reference to Level of Aspiration whereas insignificant difference was found among remaining comparison. **Keywords:** Level of Aspiration, Female Kho-Kho player, etc.

## INTRODUCTION

Today sports are considered as an integral to all-round development of one's personality. Now a day sports has become an essential part of life. Millions of fans and spectators follow different games and sports events bordering on devotion. Many people participate in sports and games for fun, enjoyment, happiness, pleasure, health, fitness, status and for recreation. Increased participation in games and sports has resulted in competition, which has become an important element of modern life. In last five decades, we have seen that sport emerging as a great socio-cultural as well as socio-economic force influencing human behavior in all aspects of life. The impact of this phenomenal change has been equally influence on athletes, spectators, sponsors and administrators. People are associated with sport in different roles - as athletes, as trainers, as doctors, as physiotherapists, as administrators, as tournament officials (judges, referees, umpires, jury), as team management (managers, coaches) and finally as spectators. Where there are human beings, there is behavior; and where there is behavior - whether individual or social - there is bound to be psychology, in some form. The value of sports psychologist as an integral member of the coaching and health care teams is widely accepted everywhere. Sports psychologists can train specific skills to help players to enhance their learning process and motor skills, cope with competitive pressures, and fine-tune the level of awareness needed for optimal performance. Psychological training must be an integral part of a player's holistic training process, carried out in combination with other training elements. This is best skilled by a collaborative effort among the coach, the sport psychologist, and the players; however, a knowledgeable and skilled coach can learn basic psychological skills and impart them to players, especially during actual practice.

Generally, people think that Kho-Kho is not usually seen as a sport requiring high levels of fitness, however player need to attain a certain level in many aspects of fitness to allow them to perform with accuracy and be able to repeat the actions without fatigue. With calm and quite the player can take a punch with greater intensity and frequency during training, and to punch without fatigue during competition. A successful player requires good vision, hand/eye coordination, controlled psychological variables, high level of Aspiration, etc and many

such factors which directly or indirectly effect on Kho-Kho performance. Like other psychological phenomena, motivational factors are important in directing individual behavior consciously and make him strive to perform certain type of activity in order to achieve a definite goal. Every one aims at reaching a definite goal or excellence in performance and doing so, he sets a desire for distinction, which has an inner structure known as 'Level of Aspiration' (LOA). Hence, researcher wants to know the level of aspiration of different player, he has taken the study entitled "Comparative study of aspiration level of various levels of Female Kho-Kho player."

## MATERIALS AND METHODS

### Subject

Sixty (60) Female Kho-Kho player, 20 from each participated in the Maharashtra State Tournaments (20 State Players), Inter Collegiate Tournaments of Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar (20 Inter Collegiate Players) and Inter University Tournaments (20 Inter University Players) with the help of purposive sampling method were selected from Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar. The age categories of the Kho-Kho Players were ranged between 18 to 25 years. Subjects did not use any ergogenic aids or supplementations and they were all free from any injuries during the collection of data. To see the level of aspiration researcher has selected 'The level of aspiration measure test', which Sunil Sharma and M. Kumar constructed, were distributed to the players and the same were collected back after having filled by the players.

## STATISTICAL ANALYSIS

To compare the level of aspiration of various levels of Female Kho-Kho player researcher applied One Way Analysis of Variance (ANOVA). The collected data were statistically analyzed with f-test. The level of significance was significant at 0.05 levels.

**Table-1 Analysis of Variance in Level of Aspiration among various Levels of Female Kho-Kho player**

| Source of Variation | Sum of Square | df | Mean Sum of Square | F-Ratio |
|---|---|---|---|---|
| **between** | 8.133 | 2 | 4.066 | **6.231** |
| **error** | 37.2 | 57 | 0.652 | |

*Significant at 0 .05 level Tabulated 'F' $0.05_{(2, 57)} = 3.158$

**Table-2 Post Hoc Test**

| Inter University Player | State Player | Inter Collegiate Player | MD | CD |
|---|---|---|---|---|
| **5.1** | 4.7 | | **0.4** | **0.806** |
| **5.1** | | 4.2 | **0.9*** | |
| | 4.7 | 4.2 | **0.5** | |

*Significant at 0 .05 level

Above table revealed that there was significant difference were found in Level of Aspiration among Inter University, State and Inter Collegiate Kho-Kho Players as obtained F-ratio was 6.231 which was greater than that of required tabulated 'F' value of 3.158 at .05 level of significance with (2,57) degree of freedom. Hence, Post Hoc test was applied to see the Mean Difference among Inter University, State and Inter Collegiate Kho-Kho Players in reference to Level of Aspiration. The significant difference was found only among Inter University Player and Inter Collegiate Player in reference to Level of Aspiration whereas insignificant difference was found among remaining comparison.

## CONCLUSION

There was significant difference were found in level of aspiration among state, Inter Collegiate and Inter University Kho-Kho Players, it may be attributed that Level of Aspiration varies from each other but remains a bit in everybody whether it may be player, student, teacher, businessman etc, we can conclude that in the view of different level of players Inter University Female Kho-Kho player shows high level of aggression followed by State Level Kho-Kho Players and least in Inter Collegiate Kho-Kho Players.

## REFERENCES


- B. W. Brewer, Psychology Of Sports Injury Rehabilitation In Handbook Of Sports Psychology, (New York: Wiley), 2001.
- Bhatia, H. R. Educational Psychology, New Delhi; Surjeet Publications, 1977.
- Jack H. Leiwallyn And Judy A. Blucker, Psychology Of Coaching Theory And Application. (Delhi: Surjeet Publication), 1982.
- Sonia Sehg al, Physical Education, (New Delhi: Cosmos Book hive), 2008.
- Peter Arnold, Education, Physical Education And Personality Development, London: Heinerman Education Book Ltd., 1972.

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**A Peer Reviewed (Refereed) International Research Journal**

# COMPARATIVE STUDY OF BODY COMPOSITION OF DIFFERENT CLASS EMPLOYEES OF BEED DISTRICT

**Dr. Santosh Wangujare**
**Director of Physical Education & Sports**
**Adv. B.D. Hambarde Mahavidyalaya, Ashti Dist. Beed (Maharashtra)**

**Prof. Rushikesh Kumbhar**
**Research Scholar, Dr. Babasaheb Ambedkar Marathwada University, CSN (MS)**

**ABSTRACT:**
The aim of this investigation was to find out the Comparative Study of Body Composition of Different Class Employees of Beed District. In the current investigation, sixty male employees of different class group were selected at random by purposive sampling technique, from Beed district of Maharashtra. The age group was ranging from 25-45 years. Body Composition was measured by using Skin Fold Calipers. The data of fat percentage was collected by Skin Fold Calipers. After that collected data was put into Microsoft Excel to develop Master Chart and then 'F' test (ANOVA) was used for the statistical treatment. To test the hypothesis, the level of significance was set at 0.05 level of confidence, after the statistical analysis of data related to the body composition of different class employees of Beed district it was found that there is insignificant difference in Body Composition of different class employees of Beed district, Hence the Researchers Pre-assumed hypothesis is rejected. **Keywords:** Body Composition, Different Class Employees.

## INTRODUCTION:

### Body Composition:

In physical fitness, body composition is used to describe the percentages of fat, bone and strength in human bodies. Two people of equal height and body weight may look completely different from each other because they have a different body composition. The human body is composed from many major components at the cellular and tissue levels. These include water, minerals, protein and fat. Increases in the stages of fat components are detrimental to health and also sports performance. The mineral components are mainly

associated with bone. The assessment of body composition is not only common in sport and exercise sciences but also in medicine. Most of the interest is in quantifying body fat in relation to health and to sports performance. The human body is made up of about 50 elements at the atomic level, of which 98% is due to combination of carbon, oxygen, nitrogen, hydrogen, calcium and phosphorus. At the molecular level, the body is essentially made up of the chemical compounds water, carbohydrates, protein, fat and minerals and these are organized into cells which are the basis of tissues and organs. The relative amounts of adipose tissue, muscle and bone are of importance for heath and sports performance, and as a result of methods of body composition analysis have been categorized into fat mass and fat-free mass.

**Skin Fold Method:**

The skin fold assessment methods are based on a skin fold test, also known as a pinch test, whereby a pinch of skin is exactly measured by calipers at a number of consistent points on the body to determine the subcutaneous fat layer thickness. These measurements are converted to an expected body fat percentage by an equation. Some formulas require as few as three dimensions, others as many as seven. The correctness of these estimates is more dependent on a person's exclusive body fat delivery than on the number of sites measured. As well, it is of greatest importance to test in a exact location with a fixed pressure. Although it may not give an precise reading of real body fat percentage, it is a consistent measure of body composition alteration over a period of time, provided the test is approved out by the same person with the same technique.

The accuracy of the skin fold method is dependent on the technician’s skill as well as the type of caliper and the skin fold prediction equation used. When selecting a skin fold caliper for a health/fitness setting, the cost, durability, and degree of precision of the caliper are important considerations.

**OBJECTIVES:**

The main purpose of this study was to find out the Comparative study of body composition of different class employees of Beed district.

**HYPOTHESIS:**

On the basis of literature searched and the researcher’s own perception it was hypothesized that there would be significant difference of Body Composition of different class employees of Beed district.

## METHODOLOGY:

### Source of Data:

In the present study researcher has taken the male subjects for the study. The source of data was collected from Beed district employees of different class group.

### SELECTION OF SUBJECTS:

Sixty male subjects were selected for the collection of data (15-class I, 15-class II, 15-class III and 15-class IV employees). The age group was ranging from 25-45 years.

### Sampling Method:

The subjects were being selected by using purposive sampling method.

### Collection of Data:

For the collection of data, the subjects were given full administration of the tests which was used for the collection of data in the study. The data of body composition was collected by Skin Fold Caliper. After that collected data was put into Microsoft Excel to develop Master Chart and then 'F' test (ANOVA) was used for the statistical treatment.

### Criterion measures:

Following are the criterion measures which were responsible for collection of data, to testing the hypothesis.

| S. No | Variables | Test |
|---|---|---|
| 01 | Body Composition | Skin Fold Caliper |

### Level of Significance:

To test the hypothesis, the level of significance was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study.

**Analysis of the Data:**

After the collection of data from different class employees of Beed district (15-class I, 15-class II, 15-class III and 15-class IV employees), the raw data were converted into standard one by using a statistical technique 'F' test (ANOVA) for testing of hypothesis.

**Table No. 1**

**Mean difference of Body Composition of different class employees**

| Name of Group | Mean |
|---|---|
| **Class I Employees** | 13.39 |
| **Class II Employees** | 12.03 |
| **Class III Employees** | 11.98 |
| **Class IV Employees** | 11.94 |

**Table No. 1:** indicates that the mean of the I group (Class I Employees) is 13.39, Mean of the II group (Class II Employees) is 12.03, Mean of the III group (Class III Employees) is 11.98 and Mean of the IV group (Class IV Employees) is 11.94. There is mean difference of Body Composition of different class employees, whether is significant or not it can be shown by using special statistical technique 'F' test (ANOVA).

**Graph-1**

**Graphical Representation of Mean difference of Body Composition of different class employees**

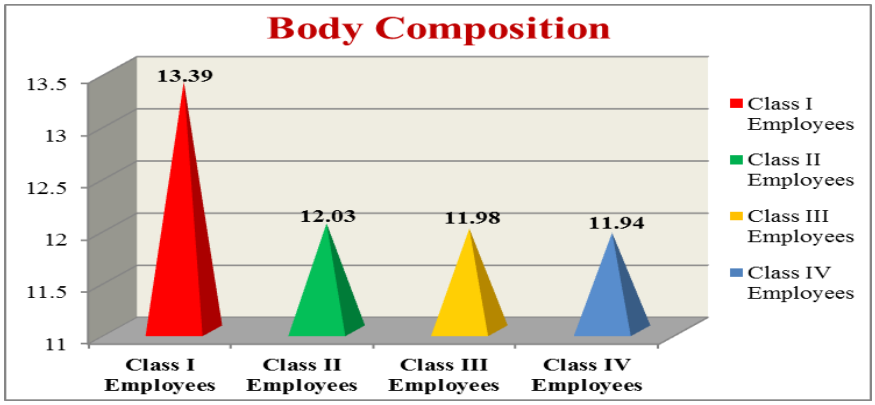

**Table No. 2**

**Showing One Way Analysis of Variance (ANOVA) of**

**Body Composition of different class employees**

| Source of variance | df | Sum of squares | Mean Variance | F Calculated | F Tabulated |
|---|---|---|---|---|---|
| Between Groups | K-1<br>4-1=3 | 647.22 | 7.21 | 0.64 | 2.84 |
| Within Groups | N-K<br>60-4=56 | 625.57 | 11.17 | | |

**Table No. 2:** indicates that the value of Tabulated 'F' is 2.84 and the value of Calculated 'F' is 0.64 which is less than tabulated 'F' at 0.05 level of confidence so that there is insignificant difference in different class employees (class I, class II, class III and class IV Employees), hence the researchers' Pre-assumed hypothesis is rejected.

**CONCLUSION:**

In the beginning of this study it was hypothesized that there would be a significant difference of body composition of different class employees of Beed district, but after the statistical analysis of data related to the body composition of different class employees (class I, class II, class III and class IV Employees), it was found that there is insignificant difference in body composition of different class employees of Beed district, Hence the Researchers Pre-assumed hypothesis is rejected.

## REFERENCES:

1. Ali, Jawed, Handbook of Sports and Exercise Science, (New Delhi: Khel Sahitya Kendra), 2012.
2. Anand, Shyam, Upkar's UGC NET/JRF/SLET Physical Education, (Agra: Upkar Prakashan), 2007.
3. Bucher, C. A, Foundation of Physical Education, St. Louis: The C. V. Mosby Co. 1960.
4. Clarke, H. Harison, Application of Measurement for Evaluation in Physical Education, Minneapolis Minnerotta: Berger Publishing Co., 1967.
5. Kansal, Devinder K., Textbook of Applied Measurement, Evaluation and Sports Selection, (New Delhi: Sports and Spiritual Science Publications), 2008.
6. Lakshmi, Vijay, Physical Fitness, (Delhi: Vivek Thani, Khel Sahitya Kendra), 2009.
7. MacLaren, D., et.al., Sports and Exercise Physiology, (New York: Bios Scientific Publishers), 2000.
8. Sharma, J.P., Exercise Physiology, (New Delhi: Vivek Thani, Khel Sahitya Kendra), 2010.
9. West and Bucher, "Foundation of Physical Education and Supports", Santa Clara: Times Mirror, 1987.

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# THE MOTOR NERVE CONDUCTION AND VELOCITY OF ULNAR AND COMMON PERONEAL NERVE IN ATHLETES OF ANAEROBIC SPORTS OF MAHARASHTRA

**Dr. Suresh Nalawade**

**Director of Physical Education**

**Shiv Chhatrapati Mahavidyalaya, Pachod, Dist. Chhatrapati Sambhajinagar (MS)**

## ABSTRACT

The purpose of this study was to investigate motor nerve conduction velocity (MNCV) of ulnar & common peroneal (CPN) nerves of bilateral side (i.e. dominant & non-dominant) of athletes who are engaged in an anaerobic type sport activity (sprinters & power lifters). A total of 40 male sprinters & power lifters with an average age, height and weight of 20.70±1.76 years, 171.38±3.31 cm and 71.06±6.04 Kg respectively, volunteered to participate in this study. Each subject's MNCV was measured with the help of computerized equipment called "NEUROPERFECT" (Medicaid Systems, India) and the data was analysed using Mean ±SD, t-test and Pearson correlation. Results show that MNCV of ulnar nerve of right and left side was significantly different ($p < .05$). MNCV of common peroneal nerve of bilateral side also significantly different ($p < .05$). For both ulnar and common peroneal nerves, results showed that the right ulnar nerve had significantly faster MNCV than the right CPN nerve ($p < .05$). According to the results, faster MNCV in right ulnar nerve (i.e. dominant) and left CPN as compared to left ulnar nerve and right CPN in sprinters and power lifters may be from their long term training adaptations and further it may be relate to their upper & lower extremity movement requirement of changing their movement direction quickly and skilfully. **Key Words:** Motor Nerve Conduction Velocity, Sprinters, Power Lifters.

## INTRODUCTION

MNCV is a measure of speed of pulse (nerve impulse) can be transmitted along a motoneuron. A fast MNCV is also an indicator of a short refractory period. In other words, the decreased refractory period may allow for greater impulse frequency, thereby increasing muscle activation levels. It is known that exercise can cause structural changes in skeletal muscles as well as an increase in excitability of motor units. But the effects of the type and intensity of exercise on these changes have not been studied in detail. Some studies suggest strength and power athletes have faster MNCV than endurance athletes. However, it has also been reported that no

differences were evident between power and endurance groups (Sleivert et al., 1995). Other researchers have shown that trained individuals have faster MNCV than untrained ones (Hoyle & Holt, 1983). In theory, changes in MNCV may be an indicator of nerve system adaptation due to long-term physical suggest strength and power athletes have faster MNCV than endurance athletes (Kamen et al., 1984). However, it has also been reported that no differences were evident between power and endurance groups (Sleivert et al., 1995). Other researchers have shown that trained individuals have faster MNCV than untrained ones (Hoyle & Holt, 1983). In theory, changes in MNCV may be an indicator of nerve system adaptation due to long-term physical exercise training. Previous studies had investigated the clinical type of individuals. But it is more meaningful and interesting to test the athlete especially in which the predominant energy system is an anaerobic type like sprinters & weight lifters and that need to control their lower extremities accurately and speedy that is requiring more neural adaptation for motor nerve conduction velocity after specific physical exercise training. Therefore, the purpose of this study was to investigate motor nerve conduction velocity in upper and lower extremities (radial & sural nerve of bilateral side) of athletes who are engaged in an anaerobic type sport activity and to realize whether their neural specification would change from long term training.

## METHODS

Subjects total 50 sprinters & weight lifters in the age range of 18-25 years were voluntarily participated as subjects in the present study on the basis of their predominant energy system i.e. anaerobic. The dominant hand of all the subjects was right hand. The data was collected in Exercise Neurophysiology Laboratory, wherein the room temperatures were kept 24.9 ± 00.2 ºC during the MNCV testing. The right and left arm and leg was testing for ulnar and common peroneal nerve (CPN) respectively. Motor Nerve Conduction Velocity (MNCV) was assessed with the help of computerized equipment called "Neuroperfect" (Medicaid Systems, India) by using the traditional double stimulation technique. Square pulses of 0.1 ms duration and of sufficient intensity to evoke a supramaximal compound muscle action potential were applied at each stimulus point with surface stimulating electrodes. The subject lay on a wooden table with the straight arm and leg as radial and sural nerve was tested.

## STATISTICAL ANALYSIS

Data were statistically evaluated with the t test and Pearson correlation test using SPSS version 11.0 (SPSS). Significance was set at the $p < 0.05$ level

## RESULTS

The mean age, body height and body weight of the subjects were 20.70±1.76 years, 171.38±3.31cm and 71.06±6.04 kg respectively (Table 1).

**Table 1 Mean ±SD of physical characteristics of an anaerobic group of players**

| Group | N | Age (Yrs.) | Height (cm) | Weight (kg) |
|---|---|---|---|---|
| Anaerobic | 50 | 20.70±1.76 | 171.38±3.31 | 71.06±6.04 |

The mean values of MNCV of right and left ulnar and common peroneal nerves were 44.0 ± 6.8 m/s, 43.9± 6.5 m/s, 43.9 ± 6.2 m/s and 41.5± 7.0 m/s respectively (Table 2). It was found that the difference in the mean values of MNCV of right and left ulnar nerve were statistically significant ($p < .05$) and further It was found that the MNCV of right ulnar nerve was higher than left. The difference in the mean values of MNCV of right and left common peroneal nerve were also statistically significant ($p < .05$) and further It was found that the MNCV of left common peroneal nerve was higher than right. Results also showed that the mean MNCV of left common peroneal nerve was significantly ($p < .05$) more than the mean MNCV of right ulnar nerve.

**Table 2 Mean ±SD of motor nerve conduction velocity (MNCV) of ulnar & common peroneal nerve**

| | Ulnar Nerve (m/s) | Common Peroneal Nerve (m/s) |
|---|---|---|
| Right | 44.0 ± 6.8* | 45.9 ± 6.2* |
| Left | 43.9± 6.5* | 44.5± 7.0* |

The results of correlation showed that body height was positively and significantly related with body weight (r = 0.378). The MNCV of right ulnar nerve was also found to be positively and significantly related with MNCV of left ulnar nerve (r=.672) and negatively related with MNCV of right common peroneal nerve (r= -.292). The MNCV of right common peroneal nerve was also found to be positively and significantly related with MNCV of left common peroneal nerve (r=.582).

**Table 3 Correlation (Pearson) among Physical Characteristics & MNCV of Ulnar & Common Peroneal Nerve**

| | **Height** | **Weight** | **MNCV of Ulnar Nerve (Right)** | **MNCV of Ulnar Nerve (Left)** | **MNCV of Common Peroneal Nerve (Right** | **MNCV of Common Peroneal Nerve (Left)** |
|---|---|---|---|---|---|---|
| Age | .110 | -.045 | .073 | -.084 | .081 | -.063 |
| Weight | | . 278** | .020 | 091 | .146 | .232 |
| MNCV of Ulnar Nerve (Right) | | | .141 | .069 | .110 | .142 |
| MNCV of Ulnar Nerve (Left) | | | | . 672** | -. 291* | -.173 |
| MNCV of Common Peroneal Nerve (Right) | | | | | -.033 | .020 |
| MNCV of Common Peroneal Nerve (Left) | | | | | | .0579** |

**p < 0.01; *p < 0.05. MNCV – motor nerve conduction velocity

## DISCUSSION

In the presented study, the results showed that right and left sural nerve of sprinters and weight lifters players had faster MNCV than right and left radial nerve. The result was reasonable, since the goals of these athletes' training are known as rapid and coordinate movement.

## CONCLUSION

The faster MNCV in right ulnar and left common peroneal nerves as compared to left ulnar and right common peroneal nerve in sprinters and weight lifters may be from long term training adaptations and further it may be related to their lower extremity movement requirement of changing their movement direction quickly and skilfully. The results of the present study also indicate that long term training is important for increasing MNCV. But the types of training may have different levels of adaptation.

## REFERENCES

Gerchman, L.B., Edgerton, V.R. & Carrow, R.E. (1975). Effect of physical training on the histochemistry and morphology of ventral motor neurons. Exp Neurol, 49, 790-801.

Jogbinder Singh et.al. Research Submited in Punjabi University, Patiala, Punjab, India

Hakkinen, K., Komi, P.V., and Alen M. (1985). Effect of explosive type strength training on isometric force and relaxation time, electromyographic and muscle fibre characteristics of leg extensor muscles. Acta Physiol Scand 125: 587-600.

Hoppeler H. (1988). Exercise-induced structural changes of skeletal muscle. ISI Atlas Sci Biochem 2: 247255.

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# EFFECTS OF CORE STRENGTH TRAINING & HILL RUNNING FOR THE DEVELOPMENT OF PHYSICAL VARIABLES AMONG SPRINTERS OF KURNOOL

**C.Harshavardhan**

**J.L. in Physical Education**

**KVR Govt Jr College Kurnool, AP.**

**Dr. M.V. Srinivasan**

**Assistant Professor of Physical Education and Sports Sciences**

**Sri Krishna Devaraya University Ananthapuramu, Andhra Pradesh.**

## INTRODUCTION

Sport and physical education are often considered as a laboratory of human experience. Sports and physical education confront the student both physically and intellectually, and in the process of intense effort, the persons true ideals often show through. Fair play or winning in any possible way is the eventual test of ethical standards, and no other area of educational attempt is likely to put the student to the test. Sports participation has shown important contributions to be healthy, wealthy and productive. Physical literacy plays an important role on individual and social wellness. Sprint training is a pedagogical process, based on the scientific principles, aiming at preparation of sportsmen for higher performance in sprint competitions. Plyometric training aims at improving the sprint performance through basic form of power hops, distance hops, speed hops, depth jumping, single & double leg hops etc. The Sports science is still in its state of infancy and in the near future more sports science disciplines are likely to emerge. Some of these disciplines have already emerged, for example sports statistics, sports bio-chemistry, sports neuro physiology, sports cybernetics.

## CORE STRENGTH TRAINING

Classic core exercise includes planks, sit ups, fitness ball exercises, some of the most effective to build core strength are through compound movements such as squats, dead lifts, shoulder presses and pull ups. The great way to provide foundational strength to work on various muscle groups for the core, Stretching, Crab Walk, Plank, Side Plank, Knee Lifts Sitting in Chair, Leg Scissors, Inchworm.

Whether it's kicking, throwing, running, jumping or swimming an athlete's core is involved in almost every action. Core muscles are responsible for stabilizing the spine and pelvis as well as generating and transferring energy from the center of the body to its extremities. Developing core strength and stability enables athletes to maximize their power output and perform complex athletic movements that require coordination, balance, and technical skills Additionally, focusing on core strength can help athletes stabilize other weak areas to reduce the risk of injury When designing a strength program, coaches should implement core exercises in order to optimize athletic performance.

Core stability enables athletes to control their body position, generate optimum power, and transfer force along the kinetic chain. Core stability is often needed in rotational movements, which is required in almost every sport.

**HILL RUNNING**

In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. The technique to aim for is a"bouncy"style where the athlete has a good knee lift and maximum range of movement in the ankle. They should aim to drive hard, pushing upwards with their toes, flexing their ankle as much as possible, landing on the front part of the foot and then letting the heel come down below the level of the toes as the weight is taken. This stretches the calf muscles upwards and downwards as much as possible and applies resistance which overtime will improve their power and elasticity. The athlete should look straight ahead, as they run (not at their feet) and ensure their neck, shoulders and arms are free of tension. Many experts believe that the "bouncy" action is more important than the speed at which the athlete runs up the hills.

By regularly including a hill session to your training you will gain fitness, improve strength and your running efficiency (running economy). As well as the fitness benefits, hills are also a great way of adding variation to your training and are a free form of strength training without the need for gym membership.

Best of all it's a fun way of getting outdoors and exploring your local area. Elite athletes include hills as a regular part of their training, especially in the winter months, but they are just as useful to all runners whatever

level you are and an excellent way of improving your parkrun time.

**Short Hill Runs: -** A short hill is one which takes not more than 30 seconds to run up and has an inclination between 5 and 15 degrees. The athlete's energy source on short hills is entirely anaerobic. The session is anaerobic so the recovery time can be long, a walk back down the hill, or a slow jog of 60 to 90 secs.

**Medium Hill Runs: -** A medium hill is one that takes between 30 to 90 seconds to run up. This is the length of the hill is a good distance for the middle-distance runner, because it combines the benefits of the short hills with the stresses on local muscular endurance and tolerance of lactic acid. The energy source is both aerobic & anaerobic.

**Long Hill Runs: -** A long hill is one which takes from 90 seconds to 3 minutes plus. Here most of the energy comes from aerobic sources.

## PURPOSE OF THE STUDY

Core strength & Hill running can improve your strength, stability and endurance, which can help you to run faster and reduce your risk of injury.

## METHODOLOGY

In this chapter, the procedure for the selection of the subjects, criterion measure, reliability of data, design of the study, procedure for administering the test, administration of training program and statistical techniques used for analysis of data has been discussed.

## SELECTION OF SUBJECTS

Twenty male students from different colleges of Kurnool District Athletes were selected as subjects for the study, on the basis of the best performance in 100 meters sprint. The average age of the subjects was 20 years ranging between 18 and 22 years.

The requirements of the research study were explained to all subjects in the presence of the coaches and physical education teachers of the college concerned and all of them agreed voluntarily to undergo the testing and training programs. A through orientation of the requirements of the experimental procedures, testing as well

as exercise schedules were explained to the subjects so that there was no ambiguity.

The subjects were oriented to testing and training procedure for two weeks to eliminate the learning effect. The subjects were exempted from attending the required program of the college and were asked not to take part in any voluntary sports programs or unusual physical exertions.

The subjects were at random, assigned to two groups, one is experimental group and another one is control group, each group consisting of 10 Subjects. The experimental group was hill running & core strength training (Group A), group and control group (Group B). Performance of the subjects in 100 meters run was taken at the beginning and after an experimental period of 12 weeks.

## CRITERION MEASURES

The criterion measure chosen to find out the effect of hill running was the time taken by the subject to run a distance of 100 meters as fast as possible and recorded to the nearest 1/100 $^{th}$ of a second. The time was clocked with the help of stopwatches, which were properly calibrated and synchronized.

## RELIABILITY OF DATA

The reliability of data was ensured by establishing instrument reliability and tester competency.

## INSTRUMENT RELIABILITY

The stopwatches used in this study were supplied by the District Athletics Association Kurnool. These watches were also used in the Kurnool District Athletic Championships held at DSA stadium, at Kurnool district A.P.

## TESTER COMPETENCY AND RELIABILITY OF THE TESTER

The tester competency was evaluated together with the reliability of the test. To determine the reliability of test, data on 100 meters' sprint performance were recorded thrice with a gap of one day in between, under identical conditions, on 20 subjects selected at random under guidance of Kurnool District Athletics Association Kurnool (A.P.). All the measurements were taken by the investigator with the assistance of Physical Education Teachers and Senior Athletes.

The scores thus obtained on two occasions were co-related using Pearson's Product Moment Co-relation

method. The co-relation of coefficient of 0.887 thus obtained showed that data were reliable and also verified the competency of the tester.

## EXPERIMENTAL DESIGN

For the present study the experimental design adopted was random group design. Equal numbers of subjects were assigned randomly to two groups of 10 subjects to each group. The experimental treatments were also assigned randomly to the experimental group A and control group B. The experimental group was administered different kinds of training programs for the development of sprinting speed & core strength training. One group was trained with the method of hill running & core strength training (Group A) and the second group with Control group (Group B) . The distance chosen for each of the training was 100 meters. The training sessions were conducted thrice a week i.e. on Mondays, Wednesdays and Fridays. Timing for 100 meters was taken before and after an experimental period of 12 weeks. The subjects were advised not to take part in any voluntary sports programs or unusual physical exertions so that physical activities remained uniform for all the groups chosen for the study.

## PROCEDURE FOR ADMINISTERING THE TEST

All the subjects were assembled on the track of the District Sports Authority Stadium, Kurnool district AP. They were briefed on the objectives and the requirements of the test.

The test was conducted on the 400 meters track of District Sports Authority Stadium Kurnool A.P. All the eight lanes of 100 meters straight were properly marked. The subjects were instructed to warm-up on their own in order to gain the best performance and avoid possible injuries. The subjects were started in groups of two and assigned for identification by the judges and timekeepers.

## SPRINTING SPEED TEST (100 METERS)

## EQUIPMENT USED AND MARKING

### Clapper and Stop watches

100 meters distance was measured with eight parallel lines with a gap of 1.22 meters in between each two consecutive lines.

**Description of Test**

All the subjects ran with running shoes and Crouch start was adopted by all. The starting command used by the research scholar “on your marks", "set" and in place of "go" the clapper or whistle was sounded. Time keepers at the finishing line recorded the time.

**Rules**

The conduct of test’s and recording the official timing’s of each subject was as per the rules and regulation prescribed by the IAAF.

**Scoring**

The elapsed time from the starting signal until the runner's torso crossed the finish line was recorded to the nearest $1/100^{th}$ of a second for each subject.

**Administration of Training Program**

The experimental groups met thrice a week for a period of 12 weeks. The first two weeks training for all the experimental groups was for physical conditioning, determining the starting practice of Hill running, so that physical and physiological system of the subjects were ready to undertake the specific load.
The load in respect of Hill running was fixed according to the pulse rate reached at the end of the 100 meters Hill running. Each subject performed two sets in Hill running and 6 to 8 repetitions. A rest period of ensuring complete recovery was provided between the two sets.

**HILL RUNNING**

Hill running is running up or slope, Hill running improves strength and running efficiency (Running economy). Hill running increases aerobic capacity, running economy, stamina, builds in strength in gluteal (buttock), quadriceps (front of thigh), gastrocnemius (upper calf) and soleus calf (lower calf) muscles.
The subject was asked to run distance of 100 meters on a up-hill track with a gradient of 15 to 30°. Subject performed 6 to 8 repetition with complete recovery between the two sets. Subject covered this distance as fast as possible.

## CORE STRENGTH TRAINING

The great way to provide foundational strength to work on various muscle groups for the core, Stretching, Crab Walk, Plank, Side Plank, Knee Lifts Sitting in Chair, Leg Scissors, Inchworm.

## ANALYSIS OF DATA AND RESULTS OF THE STUDY

The statistical analysis of data speed endurance scores collected on 10 male subjects belonging to a group has been presented in this chapter. The group was not equated in any way and the data on selected criterion measure for all the groups were collected under similar conditions.

The data was examined by calculating the "t" ratio and analysis of variance and covariance. The "t" ratio was applied to examine, the significance of differences between pre-test and post-test means of the group to study the improvement in sprint speed as a result of training. Analysis of co-variance was applied with regard to Hill running & core strength training group in this study. Hence, the difference between initial means of the group at present had to be taken in to account during the analysis of post-test differences between the means by the process of application of ANCOVA where the final means were adjusted for difference in the initial means and adjusted means were tested for significance of differences. The differences in the final and adjusted means were tested for significance at 0.05 levels.

## LEVEL OF SIGNIFICANCE

The level of significance to check the 't' ratio and 'f ratio was set at 0.05 level of confidence, which was considered as appropriate and adequate for the purpose of this study.

## FINDINGS

The significance of difference between the pre-test and post-test means for the group 100 meters sprinting speed performance and their "t" ratio has been presented in Table.

## TABLE

## SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEANS FOR THE EXPERIMENTAL GROUP & CONTROLE GROUP (100 metres sprint)

| Groups | Pre-test means (in seconds) | Post-test means (in seconds) | .M | .M | 't' ratio |
|---|---|---|---|---|---|
| **A** | 16.25 | 15.45 | 80 | 22 | 3.63 |
| **B** | 15.86 | 14.96 | 90 | 32 | 2.81 |

Significance at.05 levels

The table indicates that "t" ratio of 3.63 for the group was significant at 0.05 level of confidence. The t-ratio required to be significant at 0.05 level was 2.05.

## DISCUSSION

A good sprinter one must possess speed, endurance, explosive strength and core strength besides technical perfection and strong determination. This factor can be developed through scientific and systematic program of training. When an athlete trains with proper adequate load, adaptation of the morphological and physiological system takes place, which in turn improves anaerobic and aerobic capacities, which mainly responsible for improvement of speed performance.

The anaerobic changes resulting from training are muscular hypertrophy, increased myofibrils, increase in protein particularly actin and myosin both in quality and quantity, improved glycolytic system and increase in phosphagens (ATP-CP)system which results in improvements of power and speed organism. On other hand the aerobic modification bring about rapid oxidation of carbohydrates (glycogen) and delay lactic acid accumulation, which in turn prevent fatigue and improves cardio-respiratory efficiency.

## DISCUSSION OF HYPOTHESIS

The hypothesis stated earlier in the study has been accepted on the basis of the result shown by the Hill running & core strength training employed in the study.

## CONCLUSION

Hill running & core strength training is effective in maintaining muscle tissue increased strength control body fat decreased risk of injury and it can increase metabolism, it will increase stride length and stride frequency and improve heart efficiency.

## REFERENCES

A Donati,IAAF New studies in Athletics,1995."The development of stride length and stride frequency in sprinting".

Dintiman,G,Tellez,T,&Ward,R.1997).Sports Speed 2nd Edition.Leisure Press,USA.Frost,B Reuben.Physical Education Foundation Practices Principles.London:Addison-Wesley Publishing Company,1975.)

Hardayal Singh,Science of Sports training,p86,1995.

Majumdar,A.S.,&Robergs,R.A.(2011).The science of speed:Determinants of performance in the 100m sprint.International Journal of Sports Science and Coaching,6,479-493.

Young W.Sprint bounding and the sprint bound index.Natl Str Cond Assoc J.1992;14(4):18-21.[Google Scholar]

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# EFFECT OF CIRCUIT TRAINING FOR DEVELOPMENT OF EXPLOSIVE POWER AMONG MEN BADMINTON PLAYERS OF NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

**Dr.P. Prasanth**

**Sr. Sports Officer, NIT Warangal**

**Mail Id: ssaso@nitw.ac.in**

**A Rakesh**

**Asst.Sports Officer, NIT Warangal.**

**Mail Id: rakesha@nitw.ac.in**

## ABSTRACT:

The purpose of the present study is to find out the effect of Circuit training for development of random from a group of Boys between the ages of 19 and 21years old. N=20 Experimental Group I and N=20 Control Group II are included in the study's sample. Vertical Jump test was utilized in the study as a pre-test and post-test to determine explosive power 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 vertical jump improved from pre-test to post-test. It is concluded that significant effect in experimental group I whereas the control group exhibits a reduction in their performance.

## INTRODUCTION

Badminton is a racquet sport played using racquets to hit a shuttlecock across a net. Although it may be played with larger teams, the most common forms of the game are "singles" (with one player per side) and "doubles" (with two players per side). Badminton is often played as a casual outdoor activity in a yard or on a beach; formal games are played on a rectangular indoor court. Points are scored by striking the shuttlecock with the racquet and landing it within the other team's half of the court. Each side may only strike the shuttlecock once before it passes over the net. Play ends once the shuttlecock has struck the floor or ground, or if a fault has been called by the umpire, service judge, or (in their absence) the opposing side. The shuttlecock is a feathered or (in informal matches) plastic projectile that flies differently from the balls used in many other sports. In particular, the feathers create much higher drag, causing the shuttlecock to decelerate more rapidly. Shuttlecocks also have a high-top speed compared to the balls in other racquet sports. The flight of the

shuttlecock gives the sport its distinctive nature. The game developed in British India from the earlier game of battledore and shuttlecock. European play came to be dominated by Denmark but the game has become very popular in Asia, with recent competitions dominated by China. In 1992, badminton debuted as a Summer Olympic sport with four events: men's singles, women's singles, men's doubles, and women's doubles; mixed doubles was added four years later. At high levels of play, the sport demands excellent fitness: players require aerobic stamina, agility, strength, speed, and precision. It is also a technical sport, requiring good motor coordination and the development of sophisticated racquet movements.

**CIRCUIT TRAINING** method was originally introduced by Morgan and Adamson in 1957 at the University of Leeds, England. It is a scientific arrangement of proven exercises performed systematically and repeatedly as a circuit. Circuit Training is a training method by which exercises of various kinds are performed in sequence with or without apparatus after having given a dosage (No. of repetitions, intensity of stimulus, duration of pauses etc.) planned before hand and inter-spaced by intervals (Uppal, 1983).

**Circuit training** is probably the most common training regime used by a wide range of sports and activities to improve performance. A circuit consist of a number of different stations at which the athlete performs a given exercise as many times as possible within a given time period. When the time is completed, the individual moves on to next station and performs a different exercise for a similar period of time and so on around the various stations (Charistopher and Einzig, 1986). Simultaneously by employing a circuit of consecutively prescribed exercise rounds the performer perform a prescribed exercise and checks his progress against the clock (Morgan and Adamson, 1972). The idea of circuit training was first put into practice at leads University in 1953 by Greham T. Adamson.

**Prof. Rajesh Kumar** (2020) studied about the effect of Plyometric and Circuit Training on selected Physical Variables among Sprinters of Hyderabad District of Telangana State. To achieve this purpose, forty-five Sprinters in the age group of 16 to 20 years those who have participated in the Hyderabad Open Sprints Athletics Championships at Gachibowli Stadium, Hyderabad for the year 2019 taken as subjects. 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 Twelve weeks, group – II (n=15) underwent the Circuit Training for three days per week for Twelve weeks and group – III (n=15) acted as control who are not participate any training apart from their regular activities. The selected Physical variables such as abdominal strength, speed and leg explosive power were assessed before and after the

training period. Sit Up Test, 50 M Dash and Standing Broad Jump are the Tests were used to conduct the pre-test and post for Measuring the Physical Variables such as Abdominal Strength, Speed, and explosive power of legs. The results of the study it was found that there was a significant difference of performance due to Plyometric and circuit training when compared with the control group.

## OBJECTIVE

The objective of the study is to find out the effect of Circuit Training on the development of explosive Power among men Badminton players of National Institute of Technology, Warangal.

## HYPOTHESIS

It was hypothesized that there would be a significant difference in Circuit Training development of explosive Power among men Badminton players of National Institute of Technology, Warangal.

## METHOD

The purpose of the present study is to find out the effect of Circuit training for development of explosive Power among men Badminton players of National Institute of Technology, Warangal. The subject was chosen at random from a group of Boys between the ages of 19 and 21 years old. N=20 Experimental Group I and N=20 Control Group II are included in the study's sample.

**Tool**

Vertical jump

Purpose: to measure the explosive power

## 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 Power after 8 weeks of Circuit training, whilst the Controlled group received general training.

T-Test

Paired Samples Statistics

| Vertical Jump Badminton players | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Control Group | Pre-Test | 63.0000 | 20 | 1.25656 | .28098 |
| | Post Test | 62.9250 | 20 | 1.36955 | .30624 |
| Experimental Group | Pre-test | 62.9000 | 20 | 1.20961 | .27048 |
| | Post-test | 67.2000 | 20 | .95145 | .21275 |

Data Measurements in centimetres

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Control group | Pre-test Post-test | .07500 | .56835 | .12709 | -.19100 | .34100 | .590 | 19 | .562 |
| Experimental group | Pre-test Post-test | -4.30000 | 1.28145 | .28654 | -4.89974 | -3.70026 | -15.007 | 19 | .000 |

The analysis of the data reveals that the subjects with the Circuit Training have shown improvement in the performance of vertical Jump test from pre to post-test Mean S. D Experimental group pre-test result shown (62.900) and Controlled group (63.0000) after 8 weeks of Circuit Training there is Improvement in the subject's Experimental Group (67.2000) Circuit Training, and Controlled group (62.9250). the measurement of vertical jump in centimetres

## CONCLUSION

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 explosive Power. The aim of formulating the effect of Circuit Training to the betterment and enhance their performance as well as a guideline for Badminton 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 Badminton players. The study helps the physical educationist and coaches for selecting the athletes.

## REFERENCES

- Granados C, Izquierdo M, Ibáñez J, Ruesta M, Gorostiaga EM. "Effects of an entire season on physical fitness in elite female Handball players." ed Sci Sports Exerc. Feb;40(2):351-61, 2008.

- Hermassi S, Wollny R, Schwesig R, Shephard RJ, Chelly MS. "Effects of in-season circuit training on physical abilities in male Handball players." J Strength Cond Res. Oct 7, 2017.

- Irungbam, R. D., Sunderlal, S., & Ranjit, S. (2013), Comparative between effect of circuit training and plyomatric training on aerobic endurance and anaerobic power, International Journal of Research Pedagogy and Technology in Education and Movement Sciences, 2319- 3050.

- Ioannis g. Fatouros, Athanasios. Jamurtas, d. Leontsini, kyriakos taxildaris, n. Aggelousis, n. Kostopoulos, and philip buckenmeyer (2000) Evaluation of Plyometric Exercise Training, Weight Training, and Their Combination on Vertical Jumping Performance and Leg Strength, Journal of Strength and Conditioning Research, Article: pp. 470-476 Abstract Volume 14, Issue 4. 0.

- Prof. Rajesh Kumar (2020) studied about the effect of Plyometric and Circuit Training on selected Physical Variables among Sprinters of Hyderabad District of Telangana State. International Journal of Physical Education, Fitness and Sports Sciences Association.

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# A STUDY ON IMAPCT OF ADVANCE EQUIPMENT IN TRACK AND FIELD(ATHLETICS)

**Dr.G. Adhithaya Reddy,**
**Physical Director**
**Vasavi Engineering College, Hyderabad.**
**adhithyareddy gonna@yahoo.com**

**Swetha Sarikonda,**
**Assistant Physical Trainer**
**Vasavi Engineering College, Hyderabad.**
**swetharajsarikonda@gmail.com**

## ABSTRACT

The purpose of our paper is to show how technology is helping to develop knowledge sport. Some of the technical equipment's used in international games are photo finish, anemometer, shot pull measurement and stop watches. The technology has been rapidly developing since a decade where there are numerous advantages in day-to-day life of human begins. The technology has also developed in field and track events which gives competitors, athletics a precise decision in results. From international games like Olympics to State level games the equipment's used has improved the accuracy of the results. In past there were a greater number of referees for judgment but now due to the development of technology in devices the work force of the judges has been reduced and a smaller number of referees are present.

## INTRODUCTION

The advancement in technology has made fewer burdens in sports like declaring results is more accurate and it became easy for referees as work number of work force has reduced. The participants wear wearable devices like smart watches which show accurate SPo2, heart rate moment and calories burned by this the athletics can closely monitor their health and track records. There are various software's available in market that are build and designed for fitness and nutrition professionals to organize their data and produce results. Due to the film industry and development in media live telecasting has become more popular from past two decades. All this devices and instruments has changed the future of sports and games by providing a precise results and data.

Track and field differ from most other sports because it is solely measured in meters and seconds. A fraction of a second can make all the difference in track. Because of that, the technology that records data from track and field races must be as precise and accurate as possible. Technology involved in track and field ranges from personal gear, to equipment for track events, to the technology in the track, itself.

Prior to the 2012 London Summer Olympics, a number of technological advancements were unveiled to improve the sport. One example includes electronic starting blocks. The previous model of starting blocks had approximately five millimeters of error. The new, starting blocks can detect more than just an athlete's movement, but the pressure applied to the blocks. The detection of pressure ensures that all athletes partaking in a race will have an equal start. The pressure and force applied to a runner's heel is detected to determine if the sole of the shoe left the block prior to the race start. Along with pressure and force detection; lasers, video recording, and timers were implemented to fix the previous block's errors.

An electronic starter pistol is another innovation employed to improve the start of track events. This model imitates the standard pistol used in track events. Where it differs, is when the trigger is pulled. Rather than working like a standard pistol, this one transmits a signal that results in the sound of a gunshot being played over a loudspeaker at the starting line of the race. In order to simulate the standard pistol, smoke is emitted from the electronic one. Also, a light flash from the electronic pistol to complete the simulation and start the race time.

## EQUIPMENT'S USED

### 1. Photo finish

When conducting sports race with multiple participants they cross the line almost at the same time which is difficult for a human naked eye to determine who has crossed the finishing line first and to determine the rankings so here we use equipment called Photo finish. The photo finish equipment is kept near the finish line, it takes precise photo and video referee can conclude who crossed the line first. By this it makes less difficult for referees to declare the winner in a dead heat race in athletics, the results should be precise to hundredths or even thousandths of second. In international games like Olympics Games and Common Wealth games a charged device is installed to make sure that there is fair decision on the results. The first photo finish was used in

Olympics Games in 1912. Since then, this electronic equipment has been in a great demand. The latest Photo finish device in 2008 can take up to 3,000 photos per second when compared to 1996 device which takes only 1,000 photos per second.

**2. Anemometer (Wind Gauge)**

The wind plays a major role in running races like even a slight wind will affect the performance of runner differently while participating in races. While giving results the number indicates the wind speed in meters per second. There are indications for that, if there is plus sign that means the runners performance was assisted by a tailwind to some extent and if there is a minus sign that says that the headwind has slowed participants.

The wind speed is measured by a wind gauge or anemometer during the competition. The wind gauges are controlled by two types one is by manual and another is by remote control.

There are certain limitations for results declarations if the participant's performance is assisted by tailwind to some extent that is +2.0 meters per second then that result is legal. While the result is declared when the wind is at +2.0 meters per second because all the participants experience same pressure but these results are not recorded for future tournaments.

**3. Shot-put measurement**

The optical distance measuring measurement is used many track fields like javelin throw, discus throw and in short pull. The instrument exactly measures the distance when the light is emitted and reflected by the object (shot pull). The distance between the measuring device and the target object can be determined on the basis of the speed of light and the measured time of flight of the light from the light source (emitter) to the object and back to the detector. The device is weighted approximately 7 kg and the measuring range between 2m-300m and the battery backup will be around 10 hours depending on the environment.

**4. Stop watch**

The stop watches play a crucial role in athletics, be it training or competition the stop watches makes life easy for athletics and referees. While training the competitors practice by evaluating their capabilities and improving

them periodically, in running races like 100mts, 200mts, 500mts timing plays a major role to maintain their speed so the stop watches are used.

## CONCLUSION

A positive impact of technology which is helping the sport grow is the ability to be able to instantly watch replays of runs, jumps, and throws. This was not previously possible because if you did film the event you would have to wait till maybe the next day to see the video. Videos of track and field are now easily available via the internet, this benefits a lot of athletes worldwide because they can learn from the best improving their own skills and knowledge. Technology has helped improve the length of professional athletes' careers by the use of recovery tool which previously were not used. Because athletes depend on their bodies as a source of income this is a crucial advancement in technology for track and field athletes especially, because most athletes retire due to injury. Finally, best positive impact from technology within the sport is the application of science to the running technique. Prior to the use of science in track and field, athletes didn't know how best use their bodies in their desired events to get the best performance.

## REFERENCES:


- Barr G. (2016). How artificial intelligence plays into the future sports technology. Sports techie
- Bass, R.& Eynon, B.(2009,Janaury 7) .Capturing the visible evidence of invisible learning .Retrieved from htt://www.academiccommons.org/commons/essaycaptruing-visible-evidenceinvisible-learning
- Stuart Morgan Movement Science, Australian Institute of Sport Baca, A. (2015). Computer science in Sport: Research and Practice. London and New York: Rutledge
- "Definition of sport". *Sport Accord. Archived from* the original *on 28 October 2011.*
- *3.*"List of summer and Winter Olympic Sports and Events". *The Olympic Movement. 14 November 2018.*
- Track and Field Technology Is Rapidly Advancing (sporttechie.com)
- Technology - Track and Field Technology (weebly.com)

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# EFFECT OF CIRCUIT TRAINING ON SELECTED BIO MOTOR VARIABLES AMONG INTER COLLEGIATE MALE CRICKET PLAYERS

**Dr. Sanjay Kumar Sahu**

**Principal, Dr.MMR College of Physical Education,**

**Chotuppal, TG**

## ABSTRACT

The present study is to find out the effect of circuit training on selected bio-motor variables among intercollegiate male cricket players. 30 cricket players were selected from Dr.MMR college of physical education, choutuppal, yadadri bhonigr, TG. The subjects were between 20 to 25 years. They were divided into two groups of 15 in each. One group was acted as the experimental group and another group was acted as control group. The experimental group underwent the circuit training for 6 weeks 3 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 following criterion measures namely bio-motor variables namely agility and muscular endurance were also tested. The standardized tests were taken before and after the circuit training. Agility was tested by using 6X10 shuttle run and muscular endurance was tested by using bent knee sit-ups. The paired ‘t’ test was applied to analyze the collected data and in all cases the criteria for the statistical significance is set at 0.05 level of confidence.
**Keywords:** Circuit training, Cricket Game, Agility and Muscular Endurance.

## CRICKET

Cricket is a bat-and-ball game played between two teams of eleven players each on a field at the centre of which is a 22-yard (20-metre) pitch with a wicket at each end, each comprising two bails balanced on three stumps. The game proceeds when a player on the fielding team, called the bowler, "bowls" (propels) the ball from one end of the pitch towards the wicket at the other end, with an "over" being completed once they have legally done so six times. The batting side has one player at each end of the pitch, with the player at the opposite end of the pitch from the bowler aiming to strike the ball with a bat. The batting side scores runs either when the ball reaches the boundary of the field, or when the two batters swap ends of the pitch, which results in one run. The fielding side's aim is to prevent run-scoring and dismiss each batter (so they are "out", and are said to have "lost their wicket"). Means of dismissal include being bowled, when the bowled ball hits the stumps and dislodges the bails, and by the fielding side either catching a hit ball before it touches the ground, or hitting a wicket with the ball before a batter can cross the crease line in front of the wicket to complete a run. When ten batters have been

dismissed, the innings ends and the teams swap roles. The game is adjudicated by two umpires, aided by a third umpire and match referee in international matches.

Forms of cricket range from Twenty20, with each team batting for a single innings of 20 overs and the game generally lasting three hours, to Test matches played over five days. Traditionally cricketers play in all-white kit, but in limited overs cricket they wear club or team colours. In addition to the basic kit, some players wear protective gear to prevent injury caused by the ball, which is a hard, solid spheroid made of compressed leather with a slightly raised sewn seam enclosing a cork core layered with tightly wound string.

Cricket becomes an international sport

## STATEMENT OF THE PROBLEM

The present study was to find out the effect of circuit training on selected bio-motor variables among intercollegiate male cricket players.

## HYPOTHESES

It was hypothesized that there may be significant differences due to circuit training on the selected bio-motor variables namely agility and muscular endurance.

## SIGNIFICANCE OF THE STUDY

1. This study will be helpful to select intercollegiate male basketball players.
2. The study will be helpful to develop training schedule to improve the bio motor variables male cricket players.
3. The study will be help the coaches or physical education teachers to frame suitable programme to improve the bio-motor component
4. The study will be an asset in the area of training.

## 1.10 DELIMITATIONS

1. The study is confined to thirty (N=30) male cricket players as subjects.
2. The subjects were selected from Dr.MMR college of physical education, choutuppal, yadadri bhonigr, TG
3. The subjects were selected only from the age group of 20 and 25 years.

4. The duration of the training was three days per week and 6 weeks in total.

## LIMITATIONS

1. The following limitations are considered for this study.
2. The day to day activities, rest period, food habit and life style were not controlled.
3. Here dietary and environmental factors, which contribute to both physical and mental efficiency, were not controlled.
4. No attempt was made to determine whether the subjects had same degree of motivation during the various stages of training and testing period.

   The variables selected for this study were as follows.

## METHODOLOGY

### SELECTION OF SUBJECTS

To execute the present study the research investigator were selected 30 intercollegiate male cricket players from Dr.MMR college of physical education, choutuppal, yadadri bhonigr, TG. Their age group ranges from 20 to 25 years.

### SELECTION OF VARIABLES

### INDEPENDENT VARIABLES

Circuit training

### DEPENDENT VARIABLES

**Bio-motor variables**

1. Agility
2. Muscular Endurance

**TESTS**

**BIO- MOTOR VARIABLES**

| S.no | Dependent variable | Test Item/Equipment | Unit of measurement |
|---|---|---|---|
| 1 | Agility | 6 X 10 Shuttle run | In Seconds |
| 2 | Muscular Endurance | Bent knee sit ups | In scores |

**EXPERIMENTAL DESIGN**

This study is designed to find out the effect of circuit training on selected bio-motor variables among intercollegiate male cricket players. The selected subjects are initially tested on bio motor variables used in this study. After the completion of initial test, all the subjects was underwent the circuit training for weekly three days in a week and 6 weeks in total. After 6 weeks, all the subjects are tested on criterion measures using means and methods used during the initial test.

**STATISTICAL TECHNIQUES**

The present study paid its attention mainly on testing the effectiveness of the effect of plyometric training on selected bio-motor variables among male basketball players. The Statistical tool used for this present study is described here. The significance of the mean difference between the pre-test and post-test values of the variables was found out by applying t-test.

**TABLE-2**

**TABLE SHOWING THE MEAN DIFFERENCE STANDARD DEVIATION AND 't' VALUE OF EXPERIMENTAL AND CONTROL GROUPS IN AGILITY**

| Group | Mean | Md | Std.deviation | Std.error of the mean | 't' | Table value |
|---|---|---|---|---|---|---|
| Experimental pre-test | 12.35 | 0.59 | 0.43 | 0.12 | 8.18* | 2.14 |

| | | | | | |
|---|---|---|---|---|---|
| **Experimental post test** | **12.29** | | **0.44** | **0.13** | |
| **Control pre test** | **12.86** | | **0.10** | **0.27** | |
| | | **0.01** | | | **1.91** **2.14** |
| **Control post test** | **12.85** | | **0.09** | **0.28** | |

*significance at 0.05 level 0f confidence

**FIGURE-2**

**BAR DIAGRAM SHOWING PRE AND POST TEST MEAN VALUE OF EXPERIMENTAL GROUP AND CONTROL GROUP IN AGILITY**

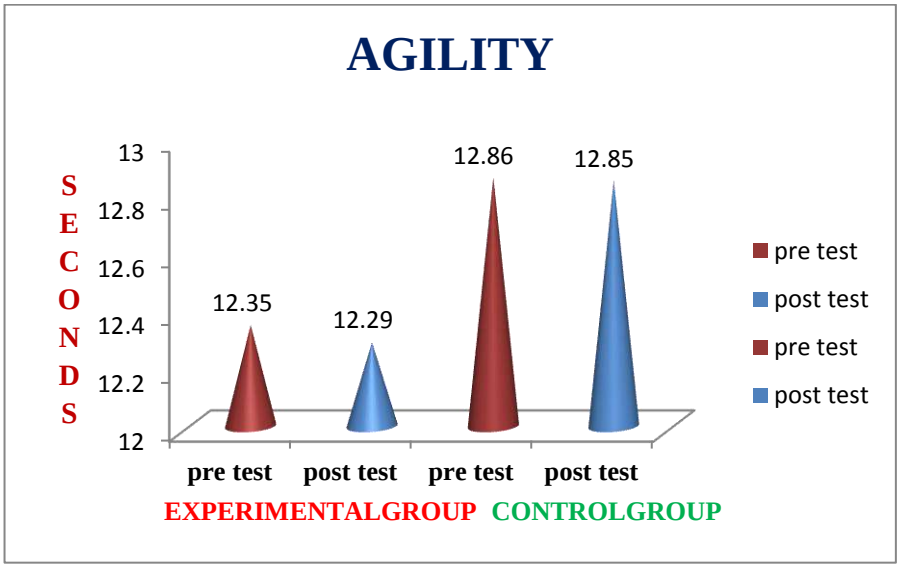



**TABLE-2**

**TABLE SHOWING THE MEAN DIFFERENCE STANDARD DEVIATION AND 't' VALUE OF EXPERIMENTAL AND CONTROL GROUPS IN MUSCULAR ENDURANCE**

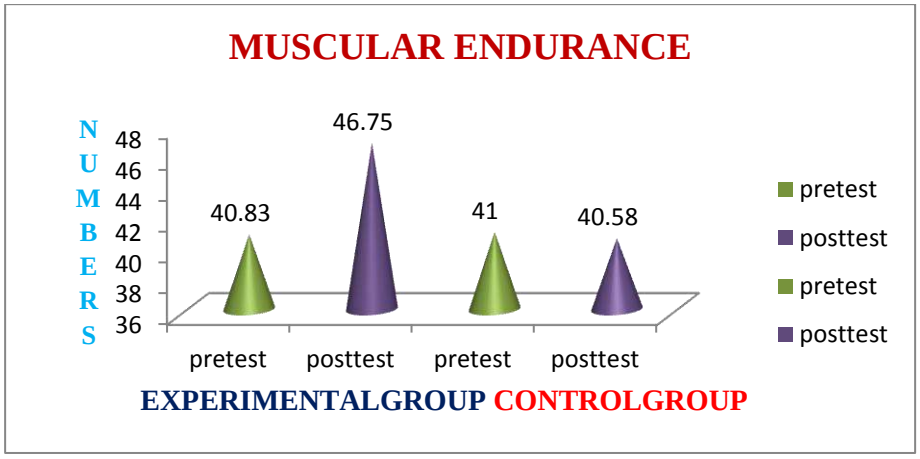
| Group | Mean | Md | Std.deviation | Std.error of the mean | 't' | Table value |
|---|---|---|---|---|---|---|
| Experimental pre-test | 40.83 | 5.91 | 2.24 | 0.64 | 15.62* | 2.14 |
| Experimental post test | 46.75 | | 1.91 | 0.55 | | |
| Control pre test | 41.00 | 0.41 | 0.95 | 0.65 | 1.44 | 2.14 |
| Control post test | 40.58 | | 0.93 | 0.64 | | |

*significance at 0.05 level 0f confidence

.

**FIGURE-2**

**BAR DIAGRAM SHOWING PRE AND POST TEST MEAN VALUE OF EXPERIMENTAL GROUP AND CONTROL GROUP IN MUSCULAR ENDURANCE**



## DISCUSSION ON FINDINGS

The result of the study shows that the experimental group that had undergone circuit training and improved bio-motor variables namely agility and muscular endurance. This may be due to the effect of circuit training.

From the result of the present study, it is concluded that the experimental group improved in bio-motor 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 bio-motor variables namely agility and muscular endurance.

## REFERENCES

1. **Hardayal singh.** Science of sports training. New Delhi: D.V.S. publications. (1991)
2. **Ajmirsingh.Et. al. (2008).** Essential of Physical Education.
   Ludhiana: Kalyani publishers. (2008)
3. **Madhuri T. Waghchoure.** Measurements and evaluation in Physical Education. (2008)
4. **Sebastian P.J. Amirthan Sebastian K.P. Manilal** System of sports training, Friends publications (India) New Delhi – 110002, 2013.
5. **Chorles Harold Mccyloy.** Test and Measurements in Health and Physical Education. Friends publications India. (2004)

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# THE ROLE OF ASSESSMENT AND FEEDBACK IN THE ENHANCING STUDENT LEARNING IN PHYSICAL EDUCATION

**Dr. Sampath Kumar**

**Assistant Professor,**

**Vijayanagara Sri Krishnadevaraya University,**

**Ballari, Karnataka**

**ABSTRACT:**

Effective integration of physical fitness education into the Physical Education curriculum is crucial for improving the general well-being of pupils. Studies highlight how Assessment for Learning can significantly improve student engagement, instructional effectiveness, and learning results in a variety of educational contexts. The purpose of this study is to look into how students feel about the use of assessment for learning techniques in physical education and fitness instruction. In the study, thirty-six high school students from two classes—taught by two preservice physical education teachers—participated. This scoping review looked at how feedback has been conceptualized and studied, as well as how the teacher and student have been positioned in feedback processes in physical education (PE) research, given the critical role that feedback plays in student learning. Furthermore, study methodologies that take into account how students interact with feedback opportunities are necessary, since the crucial component of feedback effectiveness lies not in the feedback itself, but in how it is interpreted and applied. To optimize the learning potential of feedback, future research and practices in physical education should take into account ways to further engage students in the feedback process.

**Keywords:** Assessment, Feedback, Physical Education, PE, Assessment of Physical Education, Students, Teacher

## INTRODUCTION:

Within an educational environment, physical education (PE) is positioned to play a vital role in the education of physical fitness. Physical Activity (PA) levels tend to drop as children grow through their formative years due to a loss in motivation to participate in PE and PA. But a change in behavior might be possible if PE goals went beyond only reducing the likelihood of disease to include actively building resilience and improving health.

Prioritizing the development of an atmosphere that fosters an active lifestyle both within and outside of the school setting should be the main objective; an autogenic approach should be preferred over a pathogenic one. [1]

Numerous studies have shown that one of the most potent, if unpredictable, influences on student learning in education is feedback. Feedback, according to Ramaprasad (1983), is data that modifies the difference between a system parameter's desired and actual levels. This general conceptualization of feedback—which provides information on the learner's location, goals, and path—is widely acknowledged in broader educational research, despite slight variations in language. Feedback is intended to close the performance gap between desired goals and current levels. [2][3]

The inconsistencies between how feedback is meant to be received and how it is actually received, understood, and used by the learner are major contributors to the influence of feedback's variability. Scholars contend that the quality of students' engagement with and application of the feedback they receive—rather than the input itself—is what makes it so effective. Thus, material is deemed ineffective for improving student performance if it is given to the learner but never utilized. This piece emphasizes how critical it is to comprehend the roles both students and teachers play in the feedback process. [4]

Feedback tells us what people are doing well and poorly as well as how near they are to achieving the intended outcomes. It also offers valuable experiences for learning new things and developing abilities. The learning environment is the most crucial component, as feedback directly affects the learning process and is provided information intended to modify the cognition, motivation, or behavior of the learners with regard to specific areas of task performance. Feedback on teaching context contains details on the real-world learning and/or performance circumstances for students. Cognitive psychologists claim that feedback aids in an individual's assessment of the reliability of the cognitive approach he employs for knowledge, protection, and reconstruction. Positive feedback indicates that the person has reached the goal precisely, whereas negative feedback highlights areas of weakness or incorrect behavior and provides the cognitive techniques required for the pupil to adjust. The establishment of positive student-teacher relationships and the facilitation of efficient student learning processes depend heavily on timely and high-quality feedback. [5][6]

**FEEDBACK IN PHYSICAL EDUCATION:**

A typical physical education (PE) setting is public and interactive, which offers many special chances for feedback. Students can enhance their learning by combining teacher comments and performance observation in this visible PE scenario. Peers and video are additional helpful sources of feedback to assist learning in this environment of movement and visuals. Thus, particular attention should be paid to how feedback is implemented and examined in this subject because of the many and distinctive feedback opportunities in PE. [7]

The last known and related review of teacher feedback in physical education, conducted by Lee et al. (1993), concentrated on the instructional impacts of the feedback and framed feedback largely as information from the instructor to the student to enhance performance results. A more recent review in this field did not explore a conceptual understanding of feedback in PE; instead, it concentrated explicitly on the impact of feedback on motor abilities in PE. As such, it is unclear if the transmissive perspective of feedback that was prevalent in previous studies continues to be the predominant way that feedback in PE is understood. The positioning of feedback and the roles of the teacher and student in the feedback process may be changing, but this calls for more research. There has been a recent surge in interest in AFL research in PE, and there has been advocacy for the inclusion of student perceptions in studies analyzing feedback processes in PE. The results of this study should deepen our knowledge of how feedback is used in physical education and help educators and researchers use feedback techniques to improve students' learning. [8]

Feedback tells us what people are doing well and poorly as well as how near they are to achieving the intended outcomes. Additionally, it offers worthwhile experiences for learning new things. The learning environment is the most crucial component, as feedback directly affects the learning process and is provided information intended to modify the cognition, motivation, or behavior of the learners with regard to specific areas of task performance. Feedback on teaching context contains details on the real-world learning and/or performance circumstances for students. Cognitive psychologists claim that feedback aids in an individual's assessment of the reliability of the cognitive approach he employs for knowledge, protection, and reconstruction. Although affirmative feedback indicates that the person has achieved the goal precisely, critical feedback highlights the person's shortcomings and provides the cognitive methods the learner needs to adjust their strategy. The establishment of positive student-teacher relationships and the facilitation of efficient student learning processes both depend on timely and high-quality feedback. Learners receive insightful information through feedback, which helps them pick up knowledge fast. Learning occurs far more slowly and is frequently done incorrectly when feedback is not provided. Effective teaching is dependent on a multitude of key functions. The first gives

details on the learner's performance, which can help with adjustments in further trials. Second, feedback has the power to confirm the abilities that students have used appropriately. Ultimately, feedback offers knowledge that serves as motivation for a learner's advancement. It is imperative that students have access to the interpretation and content of their feedback. Yorke contends that the significance of feedback for students' learning lies in its content, reception, and awareness. Gibbs and Simpson stress how critical it is that student feedback be fast, clear, and useful. [9][10]

## OBJECTIVES:

1. To evaluate the forms of feedback used by teachers for students in physical education courses.
2. Analysis of types of assessment feedback in teaching learning in physical education.

## RESEARCH METHODOLOGY:

In this research paper it is aimed to evaluate the forms of feedback used by teachers for students in physical education courses, in order to provide suggested solutions to problems on the basis of feedback expressions used and feedback usage rates.

## RESULT AND DISCUSSION:

### Types of Assessment Feedback in Teaching and Learning:

Feedback can be given in a variety of ways, including verbal, written, ad hoc, formal, informal, and unplanned. Formative and summative feedbacks are the two main categories of feedback. Feedback from summative and formative assessments is helpful for learning and has a direct impact on student engagement. Summative assessment feedback is linked to grades and marks, whereas formative assessment feedback mainly focuses on input like highlighting strengths and problems. While summative assessments rate student performance at a certain point in time and oversee educational results, formative assessment input is frequently qualitative and not assessed. Formative assessment feedback is simply defined by Mubayrik (2020) as an assessment for learning, while summative assessments are an assessment of learning. There are two forms of feedback that have been found to be predictive of motivation and learning outcomes: formative and summative. [18]

## ANALYSIS OF SELF-ASSESSMENT FEEDBACK:

It has been demonstrated that receiving feedback on their own assessment has an impact on their emotional states, including improving their ability to teach and cultivate a good attitude toward their profession (Montgomery and Baker 2007). Feedback has the potential to boost or lower a student's effort level towards learning and lead to a high success rate (Shute 2008). Student learning is greatly impacted by teacher feedback. When teachers give feedback to their students, the expectation is that the students will take the input to heart and work to become better learners. The kind of feedback educators provide their pupils has a big impact on their intrinsic motivation, which in turn affects how well those kids perform.

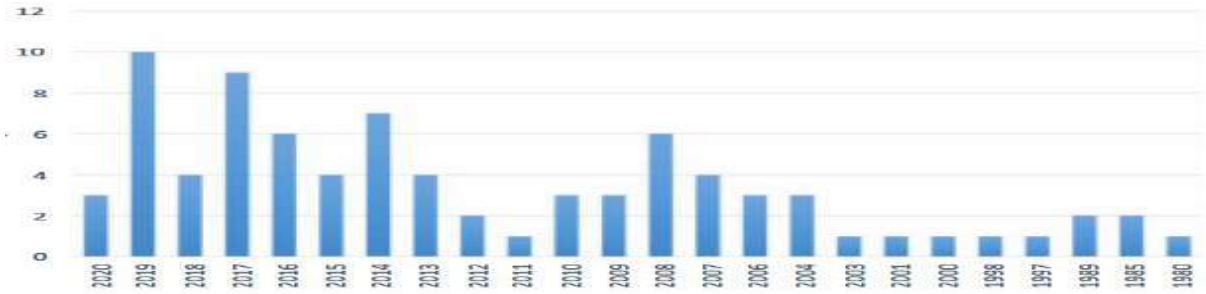


**Figure 1: Year wise growth bar diagraph of self-assessment feedback in PE**

Positive "general feedback helps to create a more conducive learning environment for students," the statement stressed. Students underlined in a different study that they think teacher input is more helpful. It has been discovered that students' learning results are improved by teachers' direct and indirect feedback. [19][20]

## CONCLUSION:

Feedback lessens the discrepancies between performance and understanding at the moment and a learning goal. It also gives information on how learners' and teachers' present and previous states are compared in terms of what they have conceptualized in relation to some expected standard or prior learning. It should be mandatory for students to consider how they apply the feedback they get to adjust their learning strategies in order to achieve their learning goals. The crucial thing to remember is that feedback should be descriptive and give specifics about the learner's current situation as well as recommended courses of action for development. In order for students to use the feedback from one assessment to get better on the next, teachers must also make sure that their procedures for tests and feedback are appropriately matched.

## REFERENCES:

1. Batista, P. F., & de Moura, A. P. (2019). The use of assessment for learning in Physical Education classes: preservice teachers' perceptions. RevistaInfancia, Educacation y Aprendizaje, 5(2), 359-364.

2. Ramaprasad A (1983) On the definition of feedback. Behavioral Science 28(1): 4–13.

3. Hattie J, Timperley H (2007) The power of feedback. Review of Educational Research 77(1): 81–112.

4. Lipnevich A, Berg D, Smith J (2016) Toward a model of student response to feedback. In: Brown GTL, Harris LR (eds) The Handbook of Human and Social Conditions in Assessment. New York: Routledge, 169–185.

5. Smith, P. L., Ragan, T. J. (2005). Instructional Design (3rd ed.). Hoboken, NJ: Wiley.

6. Narciss, S. (2008). Feedback Strategies for Interactive Learning Tasks. In J. M. Spector, M. D. Merrill, J. J. G. Van Merrie¨nboer, M. P. Driscoll (Eds.), Handbook of Research on Educational Communications and Technology (3rd ed.). (pp. 125-143) Mahwah, NJ: Erlbaum.

7. Wiliam D (2011) What is assessment for learning? Studies in Educational Evaluation 37(1): 3–14.

8. Lee AM, Keh NC, Magill RA (1993) Instructional-effects of teacher feedback in physical education. Journal of Teaching in Physical Education 12(3): 228–243.

09. Zhou, Y., Shao, W.D. and Wang, L. (2021b) Effects of Feedback on Students' Motor Skill Learning in Physical Education: A Systematic Review., 18 (12): 6281.

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# THE ROLE OF TEAM SPORTS IN PROMOTING SOCIAL SKILL IN PHYSICAL EDUCATION

**Mahesh Kumar**

**Research scholar**

**Vijayanagara Sri Krishnadevaraya University, Ballari, Karnataka**

**Dr. Sampath Kumar**

**Assistant Professor,**

**Vijayanagara Sri Krishnadevaraya University, Ballari, Karnataka**

**ABSTRACT:**

This study investigates how team sports in physical education might foster social skills. Students' collaboration and leadership abilities are greatly enhanced by physical education (PE), which has a significant impact on social and cognitive development in addition to physical fitness. Physical Education (PE) offers a dynamic atmosphere where students can develop critical teamwork skills such as collaboration, effective communication, and conflict resolution through organized activities, team sports, and cooperative exercises. PE plays a crucial role in developing leadership skills. Students can gain personal experience in decision-making, strategic thinking, and accountability by being assigned responsibilities such as group leader or captain of the team. Students can practice peer mentoring, giving constructive feedback, and making tactical adjustments under duress with these leadership chances. **Keywords:** Team Sports, Sports, Physical education, PE, Physical fitness, Social Skill

## INTRODUCTION:

One important component of the curriculum that greatly supports kids' overall development is physical education (PE). PE includes a wide range of activities intended to improve people's physical, mental, and social well-being in addition to just encouraging physical fitness. Children are exposed to a variety of physical activities from a young age, which aid in the development of motor skills, enhance coordination, and promote a lifetime enthusiasm for fitness and health. PE is important for reasons other than just physical well-being. Students' emotional and cognitive development is greatly impacted by it. It has been demonstrated that physical activity improves brain function, concentration, and academic performance.

Physical education, or PE, is acknowledged for playing a vital role in helping children acquire values and competences that support their personal, social, emotional, cognitive, and motor development as well as their ability to integrate into the modern world and prepare them for the future. Sport is a notion that aims to satisfy people's underlying emotions through regular physical exercises for many goals, including socializing and the integration of physical, psychological, and mental endeavors. These days, sport is becoming even more significant in society and has a steadily growing impact on human existence. Sports are now played by people to improve their physical and mental skills as well as their personal growth. Because socializing and fostering stronger social bonds between members of society are two major benefits of sports. Additionally, it is the most efficient kind of exercise that helps people psychologically become ready for life, which in turn supports psychosocial and personal balance.

In every aspect of life, skill is characterized by the physical, cognitive, and behavioral skills that may be acquired, developed, and improved individually or collectively. The literature's discussion of life skills emphasizes their importance in helping people succeed in a variety of settings, including their home, neighborhood, and school, as well as in managing the pressures and challenges of daily life. It can also be defined as the set of skills people need to effectively navigate change and progress while continuing to exist.

Sports and physical education not only strengthen the human will but also actively contribute to character development and self-assurance. Additionally, it makes group work easier and promotes the growth of unity. A healthy society and generations that are upheld by national values can be created by addressing the needs of the youth in a positive and healthy way through physical education and sports during the secondary school years, when the search for identity and a place in the social group was at its peak. The fundamentals of life skills include an individual's self-belief in their ability and socialization techniques in the community that can yield beneficial outcomes. Because sports help children and young people acquire life skills that will prepare them for adulthood, this issue becomes even more crucial.

## THE IMPORTANCE OF TEAMWORK IN PHYSICAL EDUCATION:

### COMMUNICATION SKILLS:

Successful collaboration depends on effective communication, and physical education gives students many of chances to practice this ability. Players need to communicate all the time on the court or on the field in order to plan their moves, carry out strategy, and make snap judgments. Students get knowledge on how to listen

intently, communicate ideas succinctly, and react appropriately through this real-time communication. Students frequently take part in peer-to-peer feedback activities in physical education programs. This feedback could come in the form of tactical guidance, supportive criticism, or both. Being able to provide and receive feedback is an important ability that improves relationships with others and creates a pleasant team atmosphere. For example, when a teammate calls attention to a technical fault in another player and offers recommendations for improvement, the result can be improved performance and a better team bond.

## COLLABORATIVE ACTIVITIES AND TEAM SPORTS:

The mainstays of physical education programs include team sports including hockey, basketball, volleyball, and soccer. Because these games naturally demand teams of students to work together to accomplish a common goal, they promote collaboration and togetherness among the participants. Every team member has a distinct role to perform, and the effectiveness of the team is based on how successfully these responsibilities are carried out and coordinated. As in soccer, for example, defenders try to stop the other team from scoring while strikers concentrate on scoring goals. Students learn about the value of each function and that success is a team effort through this division of labor. PE classes frequently incorporate cooperative games, relay races, and obstacle courses into their curriculum in addition to typical team sports. Students must cooperate with one another, share duties, and communicate clearly in order to complete these exercises, which emphasize the value of collaboration. While an obstacle course may involve strategic planning and teamwork to properly negotiate, a relay race, for instance, requires exact time and cooperation between team members.

## ROLE OF TEAM SPORTS TO BUILDING CHARACTER SKILL:

Playing team sports is a journey that develops a person's character; it's not only about making tackles or goals. This section delves into the significant influence that team sports have on character development, emphasizing three main aspects: building leadership and sportsmanship, discipline and time management, and resilience and perseverance.

Building Resilience and Perseverance: Team sports emphasize psychological development in addition to physical skill development. Athletes develop resilience by learning how to handle both victories and setbacks. Success is greeted with humility, and failures are turned into opportunities for growth, fostering a resilient mindset that transcends the confines of the sporting arena. Athletes go through the intense emotional rollercoaster of winning and losing in the furnace of competition. As mentors, coaches are essential in

highlighting the significance of recovering from setbacks. An athlete's mental toughness is built on their ability to accept setbacks as chances for improvement rather than as roadblocks.

Teaching players Discipline and Time Management: Team sports need a level of dedication that exposes athletes to the concepts of discipline and efficient time management. Beyond the field, this discipline permeates their daily lives, molding them into responsible people who recognize the value of striking a balance between their personal, academic, and athletic commitments. Athletes are taught discipline, and that discipline frequently spreads to other facets of life. Athletes develop strong time management skills as well as work prioritization. As students advance in their academic and professional careers, this skill set becomes increasingly valuable.

Developing Perseverance via Difficulties: Difficulties are a common part of team sports, and they require perseverance. Athletes have a tenacious attitude by confronting a tough opponent, coming back from an injury, or ending a losing run. This tenacity turns into a driving force that helps individuals move forward in the face of difficulty. Obstacles in life are compared to team sports challenges. Through their experiences, athletes know that obstacles can be conquered with determination and that setbacks are only temporary. Their approach to professional endeavors and academic obstacles becomes embedded with this worldview.

Developing Leadership Skills: In team sports, leadership is a trait that frequently comes to the fore. Emerging as team captains and leaders, they direct their comrades toward a shared objective. The environment of a team sport is ideal for developing strong leadership qualities.

Fostering Fair Play and Sportsmanship: The idea of sportsmanship is very important in the competitive world of team sports. Athletes are taught how to accept failure with dignity and to win with grace. The friendships forged via good sportsmanship enhance the cohesiveness of the team.

## DEVELOPMENT OF SOCIAL SKILLS THROUGH TEAM SPORTS:

In addition to providing an exciting experience when you win, team sports are excellent environments for developing critical social skills. This section explores the profound effects of team sports on social development, emphasizing the development of empathy and sportsmanship as well as good communication, cooperation, and teamwork.

Developing Effective Communication: Successful collaboration depends on effective communication. In the cooperative setting of team sports, athletes acquire the ability to communicate succinctly and clearly. They also

learn the value of information conveying, active listening, and modifying communication styles to fit various team dynamics.

Encouraging Cooperation and Teamwork: Team sports are designed to highlight the importance of cooperation. Athletes learn that successful collaboration leads to individual accomplishments as well. They discover how to value one other's qualities, pool their talents, and cooperate to achieve objectives.

Team sports' collaborative element equips players for a collaborative work environment in the workplace. Because they are used to working toward common goals, athletes fit right in at jobs where collaboration is valued highly. Their capacity to add to a group vision turns into a great advantage.

Cultivating Sportsmanship and Empathy: These two qualities are essential in the realm of team sports. Together, athletes experience victories and setbacks, developing the humility to accept opponents with dignity and the respect to enjoy victory. People who grow up with these experiences develop empathy and recognize the need of helping others.

Team sports foster empathy that goes beyond the playing field. Athletes develop into people who are sensitive to the feelings and experiences of others, making valuable contributions to their communities. Building meaningful relationships in various spheres of life becomes largely dependent on having an empathic perspective.

**BENEFITS OF TEAM SPORTS IN PHYSICAL EDUCATION:**

Positive Peer Relationships: Kids who play team sports have a higher chance of developing positive peer relationships. A strong sense of community and belonging is fostered by the relationships made through shared experiences and assistance with one another. These connections offer a useful social network and frequently transcend the playing field. Good peer interactions support a child's mental health and aid in the formation of their sense of self-worth and identity.

Enhanced Self-Esteem and Confidence: A child's self-esteem and confidence can be greatly enhanced by the accomplishments and advancements they make in team sports. Possessing new abilities, overcoming obstacles, and helping the team succeed all promote pride and a sense of accomplishment. Children who have greater self-confidence are more inclined to believe in themselves and take on new challenges in other spheres of life.

Children who participate in team sports learn the value of tenacity and resilience. They acquire the ability to overcome obstacles, maintain motivation, and carry on working toward their objectives in spite of setbacks.

## OBJECTIVES:

1. To study of role of team in social skill in physical education.
2. Determine whether team sports improve students' socialization skill in physical education.
3. The impact of team sports participation on social skills development in physical education.
4. To investigate the advantages of team sports for players

## RESEARCH METHODOLOGY:

The research study utilized the literature review to capture published scholarly articles on strategic management models and predictors of competitive business performance. The readings of published literature and journals were utilized. These reliable articles were found by search engine platforms such as Google Scholar, international journals in business and economics, open textbooks, and other renowned websites.

## RESULT AND DISCUSSION:

The findings of assessing the different factors on the benefit scale of the research questionnaire are shown in Table 1. Every item's Cronbach's alpha coefficient was more significant than 0.7, demonstrating the questionnaire's internally consistent reliability. Construct validity testing, such as exploratory and confirmatory factor analyses, was also used to verify the validity of the questionnaire.

**Table 1: Summary of scale of benefits of team sports in Physical Education**

| Scales | No. of variables observed | Reliability coefficients | The correlation coefficient of the smallest total variable |
|---|---|---|---|
| Sports Team Social Skill | **4** | **0.844** | **0.533** |
| Communication Skill | **4** | **0.771** | **0.589** |

| | | | |
|---|---|---|---|
| Cultivating Empathy and Sportsmanship | **4** | **0.753** | **0.523** |
| Encouraging Collaboration and Teamwork | **4** | **0.725** | **0.474** |

It was discovered that every item on the questionnaire had good convergent validity, meaning that they are all measuring the same thing. Because each item had a stronger correlation with its corresponding construct than with other constructs in the questionnaire, discriminant validity was also confirmed. Thus, the study showed that the questionnaire used to gauge how school sports affected kids' social skill development had a high degree of validity and reliability.

Following involvement in sports education, there has been a discernible and quantifiable development in all measured social skills, as shown in tables 2 and 3. As an illustration of the program's success in encouraging team-oriented behaviors, the collaboration score, which measures how well students can collaborate, shows a notable improvement from 6.0 to 8.7. In a similar vein, improvements in communication and conflict resolution scores demonstrate how the curriculum helps students become more adept at expressing themselves and working out differences.

**Table 2: Before and after Average Score of different social skills in PE**

| **Social Skill** | **Average Score Before sports Team** | **Average Score after sports Team** | **Change in score** |
|---|---|---|---|
| Teamwork | 6.0 | 8.7 | + 2.7 |
| Communication | 5.5 | 7.7 | + 2.2 |
| Conflict Resolution | 5.0 | 6.8 | + 1.8 |

**Table 3: Distribution of Scores for Social Skills Post-Participation**

| Score Range | Teamwork (%) | Communication (%) | Conflict Resolution (%) |
|---|---|---|---|
| 1-3 | 2% (6) | 3% (9) | 5% (15) |
| 4-6 | 8% (24) | 12% (36) | 15% (45) |
| 7-9 | 45% (135) | 35% (105) | 30% (90) |
| 10 | 45% (135) | 50% (150) | 50% (150) |

With absolute numbers, this distribution table offers a thorough examination of the scoring range following participation. It shows that after participating in sports education, a significant percentage of pupils attained high proficiency (Scores 7–10) in all areas. The substantial benefit of sports activities on the development of critical social skills is highlighted by the large proportion of children who scored in the top bracket (10) for all skills, especially in communication and conflict resolution.

**DISCUSSION:**

In sports, risk conditions can foster teamwork and unity among members of the group. A group's sense of unity grows as members depend on one another for both physical integrity and victory. The significance of objectives, ideal motivation, and shared strain under unique circumstances, even in professional sports teams, which frequently consist of some multi-ethnic groups, foster tolerance and unity and facilitate communication, Our perceptions of other people are greatly influenced by our culture; yet, physical culture has a unique way of communicating, which facilitates cooperation even in multinational teams.

Team members' shared experiences ring true in their consciences in different ways. The team will continue to be made up of individual members if the observations, feelings, and thoughts that these experiences determine stay at the individual level. Discussing with others the impacts that a shared experience has on an intimate level fosters interpersonal ties, mutual understanding, and ultimately the acceptance of collaboration as a means of resolving conflicts.

One could argue that teamwork is a goal in physical education, particularly at the higher school level. It will be a useful ability that satisfies the additional needs of employers about teamwork and member performance. The benefit of having young people on a sports team is that they are simpler to comprehend and accept. Presenting

crucial information in an engaging way is a cultural accomplishment, particularly for the younger generation that is accustomed to moving at a "fast-forward" pace. [13]

## CONCLUSION:

The effect of team sports on the development of social skills in physical education. Playing team sports helps develop important social skills including empathy, dispute resolution, cooperation, and communication. Studies show that consistent involvement improves social skills and lowers social anxiety while also improving emotional health. Research indicates that organized team settings foster robust social ties and a feeling of belonging, both of which are critical for the development of young people in a positive way. For this reason, including team sports in youth programs is essential to developing social skills and creating a nurturing atmosphere. In the end, the results highlight how crucial it is to promote team sports participation as a calculated strategy for holistic development, giving young people the critical social skills they need to succeed in a variety of spheres of life.

**REFERENCES:**

1. Ghildiyal, R., 2015. Role of sports in the development of an individual and role of psychology in sports. Mens Sana Monographs, 13(1): 165-170.Available at: https://doi.org/10.4103/0973-1229.153335.

2. Kolburan, G. and U. Tosun, 2011. A developmental model proposal that reinforces the values acquired in the first stage through life skills education among primary school second grade students. pp: 246-247.

3. Kumar, R., 2017. Impact of physical education and sports in promoting social values among youth. The International Journal of Indian Psychology, 4(2): 84-87.

4. Hastie, P. A., & Casey, A. (Eds.). (2014). Physical education for lifelong fitness: The physical best teacher's guide (3rd ed.). Human Kinetics.

5. D. Hellison and T. Martinek, "Social and Individual Responsibility Programs," in the handbook of physical education, London: Sage: SAGE Publications, Inc, 2006, pp. 610–626.

6. R. Bailey, K. Armour, D. Kirk, M. Jess, I. Pickup, and R. Sandford, "The educational benefits claimed for physical education and school sport: An academic review," Res. Pap. Educ.,vol. 24, no. 1, pp. 1–27, 2009, doi: https://doi.org/10.1080/02671520701809817.

7. Smith, P. L., Ragan, T. J. (2005). Instructional Design (3rded.). Hoboken, NJ: Wiley.

08. unstall, P., Gipps, C. (1996). Teacher Feedback to Young Children in Formative Assessment: a Typology. British Educational Research Journal, 22 (4), 389.

09. Hattie, J., & Timperley, H. (2007). The power of feedback. Review of Educational Research, 77(1), 81–112.

10. Ramaprasad, A., & Hegde, V. Year: 2019 Title: Student perceptions of faculty feedback: An exploratory study Journal: International Journal of Educational Management

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# AN EXPERIMENTAL STUDY ON REDUCTION OF INJURIES AMONG SELECTED GAMES' PLAYERS THROUGH TRAINING IN FALL BREAKING TECHNIQUES

**T. Hanumanthu**

**Assistant Professor, Anurag University, Hyderabad**

**Dr. Ch Mahesh**

**Assistant Professor, Anurag University, Hyderabad**

## ABSTRACT

Injuries are common amongst the athletic population. After an injury, there are various factors to consider prior to an athlete returning to sport. These injuries have a significant negative impact, not only on individual players, but also on team success and long-term health. When a player is sidelined due to injury, his performance is obviously compromised, potentially creating gaps in the team's strategy and overall success. Furthermore, recurrent injuries can lead to long-term health problems for players, potentially forcing them into early retirement or reducing their quality of life even after their playing days are over. **Keywords:** injury prevention programs; warm-up; multicomponent; strength.

## INTRODUCTION

Injuries in Sports and games have been prevailing since ages. Injuries may occur due to various reasons where most of them occur due to falling off in the action of running in the game. Hence it is felt that fall breaking techniques are crucial for any human being to stay unaffected by any unexpected falls or incidents. Players are severely and seriously injured in games like Football, Hockey, Kho-Kho etc. where they are in running motion for most of the time in game.

Our objective was to find studies with an exercise-based training program, thus projects that used mechanical interventions were excluded. A structured, generalized warm-up has been shown to be effective at preventing common injuries in football, reducing injuries by about one-third. The huge participation numbers in the worldwide family of football would suggest that any reduction in injury should have a public health impact.

A **breakfall** is a movement preformed to prevent one from injuring themselves when landing. The most commonly used breakfall in parkour is the roll. A roll is very useful in that it dissipates energy but allows the

traceur to quickly get back up on their feet; however, rolls require forward momentum, making them useless when falling straight down. If a roll cannot be used, the best way to land is to make use of the martial arts "slap" (commonly seen in Judo, Aikido and Hairdo) to absorb the impact. Breakfalls (both rolling and otherwise) were designed by martial artists in China and Japan so that they could practice their techniques without hurting each other. The Japanese term for the practice of falling is called *Ukemi*.

**TYPES OF BREAK FALL:**

**Rolls:** Rolls dissipate force by switching the traceur's momentum into rotational energy. This provides the advantage of quickly getting the traceur back on their feet but can only be performed with significant forward momentum (in some cases, this momentum can be created upon landing by diving into a roll, even from a vertical drop).

- **Forward roll** Rolls over the shoulder, across the back, and to the opposite hip.
- **Side roll** Rolls over one arm, across the shoulders, and over the other arm.
- **Backwards roll** Exactly the same as the forwards roll but in reverse, rolling from one hip, across the back, and to the opposite shoulder.
- **Dive roll** Similar to a forwards roll except the feet are in the air when the shoulder makes contact.

**Slapping breakfall:** These type of breakfall is rarely used or even known about by most traceurs, but can literally save lives. Most commonly seen in Judo, Aikido, Hapkido, and other martial arts that utilize grappling, this form of break falling can be used to redirect the energy of a straight drop. They are most commonly utilized in the event of uncontrolled falling. These type of breakfalls absorb the impact by "slapping" the ground and spreading the impact over as wide of an area as possible.

- **Front breakfall:** The forearms are placed in front of the head with the palms facing away from the head in a triangle shape, with hands close together and elbows wider apart. The feet should preferably be spread apart. The head is turned to the side as to avoid striking the face. Contact with the ground is only made with the hands, forearms, and feet. For some low-impact applications, landing in a pushup position can also be used, but this is hard on the wrists and takes significant arm strength.
- **Side breakfall** The chin is tucked in and the entire side of the body including the leg contacts the ground. The arm on the striking side of the body is held out at a downwards angle and used to absorb the impact.

- **Back breakfall** This breakfall is performed with the chin tucked in tight and falling onto the upper back, with both arms striking the ground off to the side to absorb the impact.

## STATEMENT OF THE PROBLEM:

The purpose of the study is to give the fall breaking technique training to the children in the age group of 10 to 15 years playing Hockey, Football and Kho Kho and hence examine the reduction of injuries during their game with the help of this training.

## OBJECTIVES OF THE STUDY:

1. To give the training of fall breaking techniques to the children in the age group of 10 to 15 years playing Hockey, Football and Kho Kho.
2. To compare the chances of injuries among the trained players and untrained players with respect to fall breaking techniques.
3. To study the effect and use of fall breaking technique training among players in prevention of injuries occurring during the play.

## HYPOTHESIS:

The following hypotheses were drawn for the present study

1) The players who are trained in fall breaking techniques will be less prone to injuries when compared to other players.
2) The performance of trained players will be enhanced when compared to the control group.
3) The continuity of trained players with respect to professional gaming will be more successful when compared to others due to less injuries.

## SIGNIFICANCE OF THE STUDY:

This study may help to understand the following:

1) This will help in understanding the importance of fall breaking techniques in prevention of injuries in sports and games.
2) This can be valuable information for sports coaching and training process.
3) This will be very much useful in the field of sports training and Biomechanics.

4) The variation in injuries and their severity among trained and untrained players can be understood.

**Delimitations:** The following are the delimitations set for the present study

1) The subjects selected for this study are all boys in the age group of 10 -15 years.

2) The players of 3 team games i.e. Football, Kho-Kho and Hockey were studied.

3) All the four types of fall breaking techniques were taught.

**Limitations:**

1) The training age of the subjects is not taken into consideration.

2) The food habits, health and hygienic conditions of the subjects are not taken into consideration.

3) The changes in climatic condition during the testing period cannot be controlled and the influence on the results of the study is recognized as a limitation.

**METHODOLOGY:**

**Sample of the Study:** 30 players from each game namely Football, Hockey and Kho Kho will be selected in the age group of 10 to 15 years from the district of Mahbubnagar as the experimental group. Another 30 players will be taken as the control group.

**Method to be employed:** The experimental group players will be trained under the supervision of the researcher in all the fall breaking techniques for duration of 6 months along with their routine game training. The control group on the other side will be undergoing only their respective game training. After six months of training, there on the players of experimental and control group will be allowed to participate in all major tournaments within the district and the state.

**ANALYSIS:**

During the period of tournaments, the players of experimental group and control group are closely watched and the number of times the players fall during the game and the number of times they get injured along with the severity of injury will be noted down. This process of examination will be carried out for a period of two years during all the tournaments played. As a result of examination for two years of tournaments, statistical methods will be utilized to study the effect of fall breaking technique training for players in reduction of injuries in Hockey, Football and Kho Kho.

**In this study, Independent sample 'T' test was applied as statistical technique. The alpha level was set as 0.05.**

## CONCLUSION:

This result might be because of regular training of university players to participate in the inter university tournament that's why their performance in reaction time, sustained attention and determination ability have been developed. Most of these studies included multiple preventive training proposals and showed that they were generally effective in reducing this injury risk, whereas the role of the proprioceptive training remains controversial.

## REFERENCES:

1. Moore, R.; Bullough, S.; Goldsmith, S.; Edmondson, L. A Systematic Review of Futsal Literature. *Am. J. Sports Sci. Med.* **2014**, *2*, 108–116. Spyrou, K.; Freitas, T.T.; Marín-Cascales, E.; Alcaraz, P.E. Physical and Physiological Match-Play Demands and Player Characteristics in Futsal: A Systematic Review. *Front. Psychol.* **2020**, *11*, 569897.
2. Weber, L.; Westaway, M. Comparison between Indoor and Outdoor Soccer: Related Injuries. *Pulse* **1994**, *8*, 3–5. Lindenfeld, T.N.; Schmitt, D.J.; Hendy, M.P.; Mangine, R.E.; Noyes, F.R. Incidence of Injury in Indoor Soccer. *Am. J. Sports Med.* **1994**, *22*, 364–371.
3. Junge, A.; Dvorak, J.; Graf-Baumann, T.; Peterson, L. Football Injuries during FIFA Tournaments and the Olympic Games, 1998–2001: Development and Implementation of an Injury-Reporting System. *Am. J. Sports Med.* **2004**, *32*, 80–89. Hoff, G.L.; Martin, T.A. Outdoor and Indoor Soccer: Injuries among Youth Players. *Am. J. Sports Med.* **1986**, *14*, 231–233.
4. Ribeiro, R.N.; Costa, L.O.P. Epidemiologic Analysis of Injuries Occurred during the 15th Brazilian Indoor Soccer (Futsal) Sub20 Team Selection Championship. *Rev. Bras. Med. Esporte* **2006**, *12*, 1–5. Ekstrand, J.; Gillquist, J.; Möller, M.; Oberg, B.; Liljedahl, S.-O. Incidence of Soccer Injuries and Their Relation to Training and Team Success. *Am. J. Sports Med.* **1983**, *11*, 63–67.
5. Hermans, V.; Engler, R. *Futsal: Technique, Tactics, Training*; Meyer & Meyer Verlag: Berkshire, UK, 2010; ISBN 1-84126-304-4Kaul, N. Involuntary Retirement Due to Injury in Elite Athletes from Competitive Sport: A Qualitative Approach. *J. Indian Acad. Appl. Psychol.* **2017**, *43*, 315–325.

6. Gene-Morales, J.; Saez-Berlanga, A.; Bermudez, M.; Flandez, J.; Fritz, N.; Colado, J.C. Incidence and Prevalence of Injuries in Futsal: A Systematic Review of the Literature. *J. Hum. Sport Exerc.* **2021**, *16*, S1467–S1480.
7. Lopes, M.; Martins, F.; Brito, J.; Figueiredo, P.; Tomás, R.; Ribeiro, F.; Travassos, B. Epidemiology of Injuries in Elite Male Futsal Players. *Clin. J. Sport Med.* **2023**, *33*, 527–532.
8. Lago-Fuentes, C.; Jiménez-Loaisa, A.; Padrón-Cabo, A.; Calvo, M.M.; García-Pinillos, F.; Rey, E. Epidemiology of Injuries in Elite Female Futsal Players: A Prospective Cohort Study. *Int. J. Sports Med.* **2020**, *41*, 885–890.
9. Junge, A.; Dvorak, J. Injury Risk of Playing Football in Futsal World Cups. *Br. J. Sports Med.* **2010**, *44*, 1089–1092.
10. Pérez-Gómez, J.; Adsuar, J.C.; Alcaraz, P.E.; Carlos-Vivas, J. Physical Exercises for Preventing Injuries among Adult Male Football Players: A Systematic Review. *J. Sport Health Sci.* **2022**, *11*, 115–122.

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# EVALUATING THE INFLUENCE OF PRANAYAMA ON PHYSICAL FITNESS AMONG STUDENTS AT GULBARGA UNIVERSITY

**Basavaraj Singe**
**Research Scholar**
**Department of Physical Education**
**Gulbarga University,**
**Mail id: singe.269@gmail.com**

**Dr H S Jange**
**Principal and PG Coordinator**
**Department of Physical Education**
**Gulbarga University**

## ABSTRACT

Pranayama, a traditional yogic breathing practice, has gained significant attention for its potential benefits on physical fitness and overall well-being. This study evaluates the influence of pranayama on physical fitness among students at Gulbarga University. A total of 100 students, aged 18–25, participated in the study, which spanned eight weeks. Participants were divided into two groups: an experimental group practicing pranayama daily and a control group following their regular lifestyle. Fitness parameters such as flexibility, endurance, lung capacity, and heart rate variability were measured pre- and post-intervention. Results indicate a statistically significant improvement in all parameters in the experimental group compared to the control group. The study underscores pranayama's efficacy in enhancing physical fitness and advocates for its integration into student wellness programs. **Keywords**: Pranayama, physical fitness, flexibility, lung function, cardiorespiratory endurance, university students, yoga, controlled breathing, health promotion, wellness programs, heart rate variability, physiological benefits, stress reduction, young adults, fitness intervention.

## INTRODUCTION

Physical fitness is a critical component of overall health and well-being, particularly among university students who often face high levels of academic stress and sedentary lifestyles [1]. Declining physical activity levels among these demographics have contributed to a rise in health concerns such as obesity, cardiovascular issues, and mental stress [2]. Traditional fitness programs often require specialized equipment and significant time investment, making them less accessible to students. Pranayama, a core practice of yoga, offers a holistic and cost-effective solution by focusing on controlled breathing techniques [3]. These techniques are known to improve oxygenation, enhance parasympathetic activity, and promote mental and physical relaxation. Studies have demonstrated that pranayama can enhance lung capacity, flexibility, and cardiovascular endurance while reducing stress levels [4]. However, its potential benefits for young, healthy populations, such as university students, remain underexplored [5].

This study seeks to fill this gap by evaluating the influence of pranayama on physical fitness components among students at Gulbarga University. By integrating pranayama into their daily routines, students may improve their physical fitness while also enhancing mental clarity and stress management.

## OBJECTIVES OF THE STUDY

- **Primary Objective:** To assess the impact of regular pranayama practice on key physical fitness parameters, including flexibility, lung capacity, and cardiovascular endurance, among university students.
- **Secondary Objectives:**
    - To evaluate the influence of pranayama on heart rate variability as an indicator of improved autonomic function.
    - To compare pre- and post-intervention fitness levels between experimental and control groups.
    - To promote awareness of pranayama as a simple, accessible, and cost-effective method to enhance physical fitness.
    - To explore the feasibility of incorporating pranayama into student wellness programs as a sustainable fitness intervention.

## PURPOSE OF THE STUDY

The primary purpose of this study is to assess the impact of regular pranayama practice on key physical fitness components, including flexibility, cardiorespiratory endurance, and lung function, among university students. Additionally, the study seeks to promote awareness of pranayama as an accessible and cost-effective fitness intervention.

## METHODOLOGY

Pre- and post-intervention assessments included sit-and-reach tests for flexibility, the Cooper test for endurance, spirometry for lung function, and heart rate variability analysis.

**Table 1: Summary of Methodology**

| Aspect | Description |
|---|---|
| **Study Design** | Quasi-experimental study |
| **Sample Size** | 100 students (50 experimental, 50 control) |
| **Age Group** | 18–25 years |
| **Experimental Group** | Daily 30-minute pranayama sessions for 8 weeks |
| **Pranayama Techniques** | Nadi Shodhana, Bhramari, Kapalabhati |
| **Control Group** | Maintained usual routines without pranayama |
| **Assessment Parameters** | Flexibility: Sit-and-reach test - Endurance: Cooper test - Lung Function: Spirometry - Heart Rate Variability (HRV) |
| **Data Collection Timeline** | Pre-intervention and post-intervention assessments |
| **Statistical Tools Used** | Paired t-tests (within-group changes) and ANOVA (between-group differences) |
| **Significance Level** | $p < 0.05$ |

## RESULTS

The experimental group exhibited significant improvements in flexibility ($p < 0.01$), endurance ($p < 0.05$), lung capacity ($p < 0.001$), and heart rate variability ($p < 0.01$) compared to the control group. The control group showed negligible changes across all parameters. These findings highlight the potential of pranayama to enhance multiple dimensions of physical fitness in young adults. The results demonstrate that regular

pranayama practice significantly enhances physical fitness parameters, making it an effective, low-cost intervention for improving student well-being. The control group, with no pranayama practice, exhibited only marginal changes, underscoring the impact of the intervention.

Table 2 presents the comparative means for both the experimental and control groups before and after the intervention, highlighting significant improvements in the experimental group due to pranayama practice.

**Table 2: Mean of Pre and Post Intervention for experimental and control groups**

| **Parameter** | **Pre-Intervention Mean (Experimental)** | **Post-Intervention Mean (Experimental)** | **Pre-Intervention Mean (Control)** | **Post-Intervention Mean (Control)** |
|---|---|---|---|---|
| Flexibility (cm) | 20 | 25 | 21 | 22 |
| Endurance (meters) | 1500 | 1800 | 1520 | 1530 |
| Lung Capacity (L) | 3.5 | 4.2 | 3.6 | 3.7 |
| Heart Rate Variability (%) | 35 | 45 | 36 | 37 |

**i. Flexibility (cm):**

- *Experimental Group:* There was a significant increase in flexibility from a pre- intervention mean of 20 cm to a post-intervention mean of 25 cm.
- *Control Group*: The control group showed a negligible increase in flexibility, from 21 cm to 22 cm.
- *Interpretation:* This indicates that regular pranayama practice contributed to improved flexibility, likely due to enhanced muscular relaxation and increased range of motion facilitated by breathing techniques.

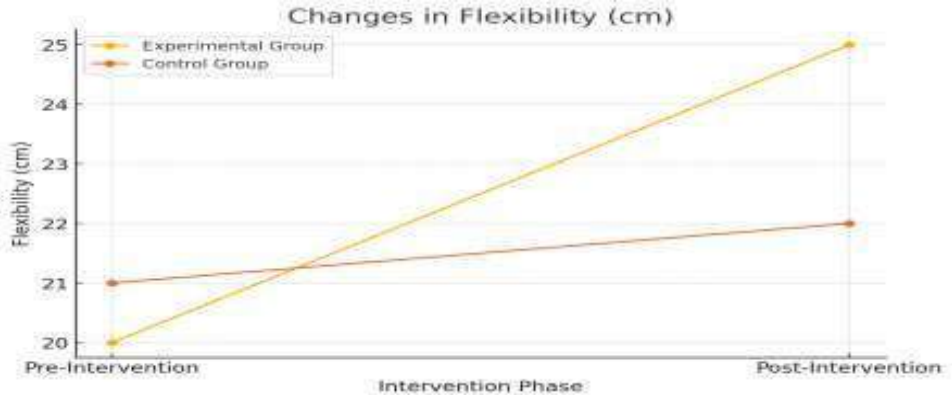


**Figure 1: Changes in flexibility**

**ii. Endurance (meters):**

- *Experimental Group:* The endurance level, measured by the Cooper test, improved significantly from 1500 meters to 1800 meters post-intervention.
- *Control Group:* A marginal improvement was observed in the control group, from 1520 meters to 1530 meters.
- *Interpretation:* The notable improvement in the experimental group suggests pranayama positively affects cardiorespiratory endurance, possibly by enhancing oxygen utilization and cardiovascular efficiency.

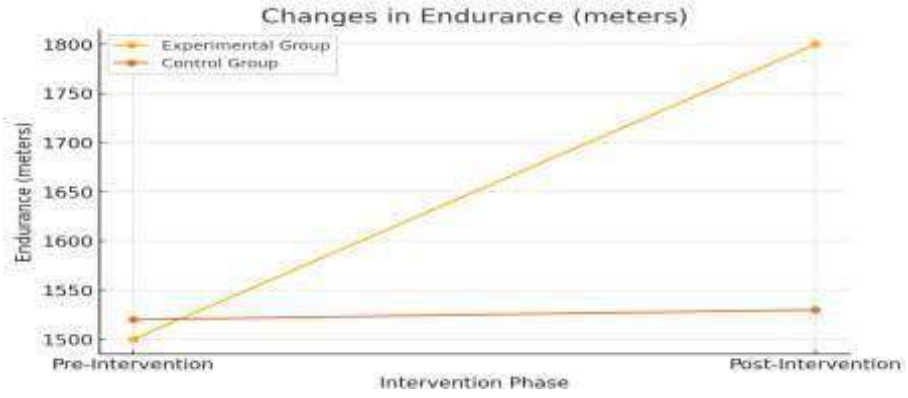


**Figure 2: Changes in Endurance**

**iii. Lung Capacity (L):**

- Experimental Group: Lung capacity improved from 3.5 L pre-intervention to 4.2 L post-intervention.
- Control Group*:* The control group showed minimal improvement, from 3.6 to 3.7 L.

- Interpretation*:* The significant increase in lung capacity for the experimental group highlights pranayama's role in strengthening respiratory muscles and improving pulmonary function.

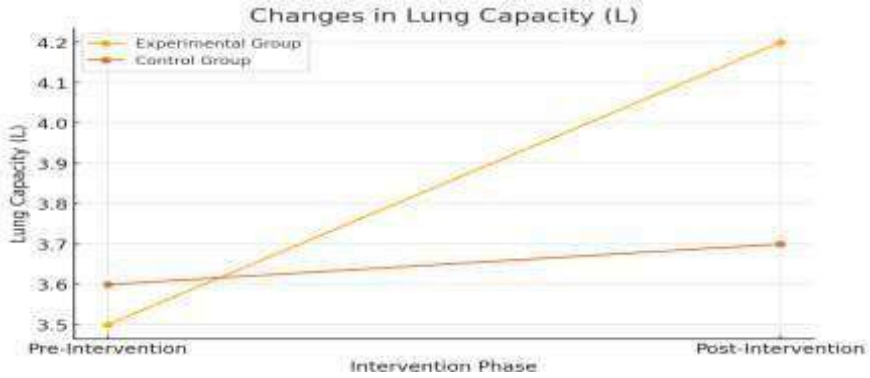


**Figure 3: Changes in Lung Capacity**

**iv. Heart Rate Variability (HRV) (%):**

- Experimental Group*:* HRV increased from 35% to 45%, reflecting better autonomic nervous system regulation.

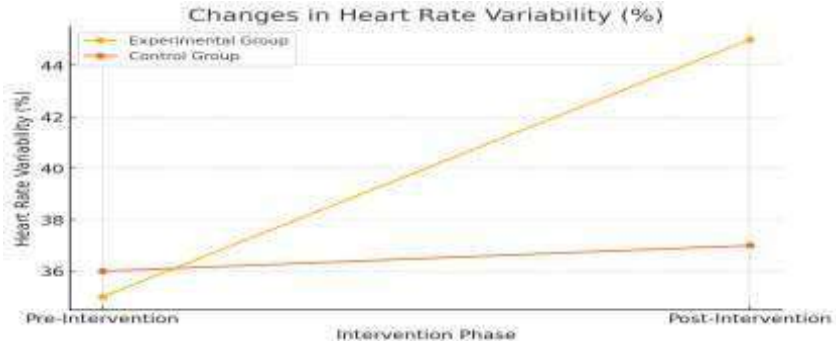


**Figure 4: Changes in Heart Rate Variability**

- Control Group: The control group exhibited a minor increase, from 36% to 37%.
- Interpretation: The substantial improvement in HRV in the experimental group indicates enhanced parasympathetic activity and reduced stress, both attributed to pranayama practice.

**GENERAL OBSERVATIONS:**

- Experimental Group Impact*:* Across all parameters, the experimental group showed significant improvements, suggesting pranayama's holistic influence on physical fitness.
- Control Group Stability: The control group exhibited negligible changes, confirming the observed benefits are specific to pranayama intervention.
- Overall Benefits: Pranayama is particularly effective in improving flexibility, endurance, lung

capacity, and heart rate variability, making it a valuable addition to physical fitness routines.

## DISCUSSION

The results align with existing literature suggesting that pranayama enhances parasympathetic activity, leading to improved cardiovascular and respiratory efficiency. The significant gains in flexibility and endurance underscore pranayama's holistic impact on physical fitness. The findings support incorporating pranayama into university wellness programs to address the growing concerns of physical inactivity and stress among students.

## CONCLUSION

Regular practice of pranayama significantly enhances physical fitness, particularly flexibility, cardiorespiratory endurance, and lung function, among students at Gulbarga University. Given its accessibility and effectiveness, pranayama represents a valuable addition to student health initiatives. Future studies should explore long-term effects and include a broader demographic to validate these findings further.

## REFERENCES

1. Bhavanani, A. B., et al. (2012). *Pranayama and its physiological effects: A review*. Indian Journal of Yoga.
2. Joshi, L. N., et al. (1992). *Effect of pranayama on the cardiovascular system*. Journal of Physical Medicine.
3. Telles, S., & Naveen, K. V. (1997). *Yoga for rehabilitation: An overview*. Indian Journal of Medical Sciences.
4. Rajesh, S. K., et al. (2013). *Impact of pranayama on cardiorespiratory parameters in young*

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# "A STUDY OF PRE-COMPETITIVEN ANXIETY LEVEL AMONG MALE KABADDI PLAYERS OF DIFFERENT STATES IN INDIA"

**Dr. Kotaiah Perelli,**

**Asst. Professor ©**

**University College of Physical Education,**

**Kakatiya University in Kammam, Telangana, India.**

**Email: perellikotaiah@gmail.com**

**ABSTRACT:**

A sports achievement is always a many sided phenomenon in the sense that depends on many factors such as physique, techno-tactical actions, motor fitness, physiological conditioning, personality traits, motivation, socio-economic status and anxiety. Anxiety is found as a culture explanatory concept in almost all contemporary theories, personality and it is regarded as principal causative agent for such diverse behavioral consequences as insomnia, immoral and sinful acts. While feat and convert anxiety have perhaps always been a part of mans lot, apparently not until the 21st century did anxiety emerge as an explicit pervasive problem. **Keywords:** Motor fitness, Physiological Conditions, Personality traits, Motivation, Socio-economical status, Anxiety, Male kabaddi players.

## INTRODUCTION:

Competitive anxiety is one of the psychological parameters, which affects the performances of a player. Keeping in view the determining role of anxiety in competitive performance the investigators decided to undertake research to study the level of pre-competitive anxiety at various matches of competition in the game of male kabaddi. Such a study would enable us to make an assessment of competitive anxiety of male kabaddi teams of different states of India. The situation specific analysis revealed how the players perceive the various competitive situations as threatening before actual competition.

## SIGNIFICANCE OF THE STUDY:

The present study intends to investigate some basic tenets related to pre-competitive anxiety of high and low performance of male kabaddi; by knowing a player's pre-competitive anxiety level one could predict

performance, eliminate situations that produce undesirable behavior, improve coach -playerinteraction and difference between players of equal skill; pre-competitive 4 anxiety consists of particulars intense anxious reaction immediately preceding and event resulting in insufficiency or incapacity. This study was therefore undertaken to find out if the anxiety levels before the fame affected the team performance of the male kabaddi players. The result of the study would help the coach in taking appropriate measures to reduce the anxiety so that the players perform better in field.

**METHODOLOGY:**

There are several methods of collecting data. Choice of the method is determined by the nature of the problem. The present study attempts to study the pre-competitive anxiety level among male kabaddi players. It is obvious that the variable like pre-competitive anxiety level cannot be deliberately arranged and manipulated by the researchers in an artificial setting like laboratory situations.

The descriptive method of research was found to be the most appropriate. So, survey/ descriptive method were adopted for the present study as it is the most appropriate method for such type of studies. Hence, the present study was designed to study was designed to study the pre-competitive anxiety level among male kabaddi players and also to compare high and low male kabaddi performance of different teams.

**Sample:** A total of 276 male kabaddi players served as sample for the present study. The sample consists of all male kabaddi players who represented states in the senior national kabaddi championship 2019. The semifinalists were considered high performers and those did not qualify in elimination round position were considered low achievers.

**Tool Used:** For the collection of data, the investigators selected the state traits anxiety inventory by spielberger el.al. The inventory has to forms: One to measure state anxiety and other to measure. Traits anxiety. In the present STAI form X-1 was used which measure state anxiety.

**Administration of Tests:**

The data were collected administering the test one hour before each competition. Each time, they were asked to sit for three minutes to cool down. Then the questionnaire was explained and the subjects were asked to fill up. Same procedure followed every time.

**Scoring:** In the form of STAI, the items are rated on 94 points scale by the subjects viz… 1) No anxiety, 2) Somewhat, 3) Moderate, 4) Very much. In this form some of the items are worded in such way at response to '4' indicates high anxiety. Other items are so worded that a response of '1' indicates high anxiety) 1, 2,5,8,10,11,15,16,19 and 20 items are scored reversibly thus, the scores range from 1 to 4 direct items viz., 1 for anxiety 2 for somewhat 3 for moderate and 4 for very much response. In this form of anxiety scale, a high score was meant to indicate high anxiety and low score was meant to indicate stable anxiety for players.

**Statistical Techniques Used:** The obtained data were analyzed by applying Mean, Standard deviation (SD) and the 'T' test.

**TABLE – 1:**

**Pre – competitive Anxiety Level of Male Kabaddi Players:**

| S.No. | Performance | N | Mean | SD | Sed | 't' value | Level of significance |
|---|---|---|---|---|---|---|---|
| 1. | High performer | 48 | 30.23 | 4.76 | 1.26 | 17.20 | 0.01 |
| 2. | Low performer | 48 | 51.92 | 5.31 | | | |

**RESULTS AND DISCUSSION:**

It can be observed from table 1 the mean pre-competitive anxiety score of high performer teams is 30.23 with a standard deviation 4.76 these teams were (Uttranchal, Kerala, Punjab, Telangana) semifinalist if the tournament and shows the stable anxiety level.

It can also observed from the table-1 that means pre-competitive anxiety score of low performer teams were 51.92 with a standard deviation 5.31 these teams (Goa, Bihar, H.P., Gujarat) are not qualified in the elimination round of the tournament and shows high pre-competitive anxiety level.

**TABLE – 2:**

**Significance of Difference between Mean Pre-Competitive Anxiety Scores of Winner and Runner up Teams:**

| Teams | N | Mean | SD | Sed | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| Uttranchal (Winner) | 12 | 28.43 | 4.66 | 2.01 | 12.11 | 0.01* |
| Kerala (Runner) | 12 | 52.57 | 6.58 | | | |

- ***Significant at 0.01 Level of confidence***

It can be observed from table=-2 that pre-competitive anxiety level of Uttranchal and Kerala teams are found have mean score 28.43 and 52.57 with S.D. 4.66 And 6.58 respectively. The 't' ratio between the mean score of two teams came out to be 12.11. It is significant t 0.01 level. The mean score indicates that the Uttranchcal team is having stable (lower) anxiety mean score in comparison to Kerala team in the final match. This can be interpreted to mean that team which has revealed lower anxiety has performed better as Uttranchal won the final match against Kerala.

**Findings:** The study was undertaken to investigate the pre-competitive anxiety level of male kabaddi players and also to find out the differences in pre-competitive anxiety level among different teams, on the basis their performance and position held in tournament. The main findings of the present study are presented in this section. It was found that high performer position holder male kabaddi teams was having significantly mostly stable pr-competitive anxiety level in comparison to low performer male kabaddi teams. The findings of the present study have obvious implications for sports in our country. One of the main finding of the present

investigation is that high performing kabaddi teams found to have more stable pre-competitive anxiety level. It is therefore, suggested that knowing the anxiety level of players prior to the crucial game can help the coach in suggesting relaxation techniques to lower the anxiety level and improve performance while, it is correct to say that a high level anxiety may have debilitating effect and may lead to deterioration of performance by reducing accuracy in judgment during play.

**References:**


- Anderson, F. H. and Ashton, M.K., "Analysis of Anxiety Levels before and after kabaddi competitions," International journal of sports psychology Vol. 12, No. 4, 2018, P.23. 2016.
- Cratty, J Bryant, "Movement Behaviour and Learning", Philadelphia: Lea and Fibiger, 2014.
- Dale, Hollings, Worth Barbara "The effect of anxiety on performing goals and learning gross Motor task". International Dissertation Abstract, Vol…35, 1974, p.245, 2012.
- Griffin, Marry Roland, "An analysis of state and Trait Anxiety experience in sports competition by men at different age levels". International Dissertation Abstract, Vol. 32, No. 12, 2008, P.3758A.
- Spielberger, Charlies D, "Anxiety Current Trend in Theory and Research". New York. Academic Press – 1994.

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# EFFECTS OF CORE STRENGTH TRAINING & HILL RUNNING FOR THE DEVELOPMENT OF PHYSICAL VARIABLES AMONG SPRINTERS OF KURNOOL

**C. Harshavardhan**

**J.L.IN Physical Education KVR Govt Jr College Kurnool, AP.**

**Dr. M. V. Srinivasan**

**Assistant Professor of Physical Education and Sports Sciences**

**Sri Krishna Devaraya University Ananthapuramu, Andhra Pradesh.**

## INTRODUCTION

Sport and physical education are often considered as a laboratory of human experience. Sports and physical education confront the student both physically and intellectually, and in the process of intense effort, the persons true ideals often show through. Fair play or winning in any possible way is the eventual test of ethical standards, and no other area of educational attempt is likely to put the student to the test. Sports participation has shown important contributions to be healthy, wealthy and productive. Physical literacy plays an important role on individual and social wellness.

Sprint training is a pedagogical process, based on the scientific principles, aiming at preparation of sportsmen for higher performance in sprint competitions. Plyometric training aims at improving the sprint performance through basic form of power hops, distance hops, speed hops, depth jumping, single & double leg hops etc.

The Sports science is still in its state of infancy and in the near future more sports science disciplines are likely to emerge. Some of these disciplines have already emerged, for example sports statistics, sports bio-chemistry, sports neuro physiology, sports cybernetics.

## CORE STRENGTH TRAINING

Classic core exercise include planks, sit ups, fitness ball exercises, some of the most effective to build core strength are through compound movements such as squats, dead lifts, shoulder presses and pull ups. The great

way to provide foundational strength to work on various muscle groups for the core, Stretching, Crab Walk, Plank, Side Plank, Knee Lifts Sitting in Chair, Leg Scissors, Inchworm.

Whether it's kicking, throwing, running, jumping or swimming an athlete's core is involved in almost every action. Core muscles are responsible for stabilizing the spine and pelvis as well as generating and transferring energy from the center of the body to its extremities. Developing core strength and stability enables athletes to maximize their power output and perform complex athletic movements that require coordination, balance, and technical skills Additionally, focusing on core strength can help athletes stabilize other weak areas to reduce the risk of injury When designing a strength program, coaches should implement core exercises in order to optimize athletic performance.

Core stability enables athletes to control their body position, generate optimum power, and transfer force along the kinetic chain. Core stability is often needed in rotational movements, which is required in almost every sport.

**HILL RUNNING**

In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. The technique to aim for is a"bouncy"style where the athlete has a good knee lift and maximum range of movement in the ankle. They should aim to drive hard, pushing upwards with their toes, flexing their ankle as much as possible, landing on the front part of the foot and then letting the heel come down below the level of the toes as the weight is taken. This stretches the calf muscles upwards and downwards as much as possible and applies resistance which overtime will improve their power and elasticity. The athlete should look straight ahead, as they run (not at their feet) and ensure their neck, shoulders and arms are free of tension. Many experts believe that the "bouncy" action is more important than the speed at which the athlete runs up the hills.

By regularly including a hill session to your training you will gain fitness, improve strength and your running efficiency (running economy). As well as the fitness benefits, hills are also a great way of adding variation to your training and are a free form of strength training without the need for gym membership.

Best of all it's a fun way of getting outdoors and exploring your local area. Elite athletes include hills as a regular part of their training, especially in the winter months, but they are just as useful to all runners whatever level you are and an excellent way of improving your parkrun time.

**Short Hill Runs: -** A short hill is one which takes not more than 30 seconds to run up and has an inclination between 5 and 15 degrees. The athlete's energy source on short hills is entirely anaerobic. The session is anaerobic so the recovery time can be long, a walk back down the hill, or a slow jog of 60 to 90 secs.

**Medium Hill Runs: -** A medium hill is one that takes between 30 to 90 seconds to run up. This is the length of the hill is a good distance for the middle-distance runner, because it combines the benefits of the short hills with the stresses on local muscular endurance and tolerance of lactic acid. The energy source is both aerobic & anaerobic.

**Long Hill Runs: -** A long hill is one which takes from 90 seconds to 3 minutes plus. Here most of the energy comes from aerobic sources.

## PURPOSE OF THE STUDY

Core strength & Hill running can improve your strength, stability and endurance, which can help you to run faster and reduce your risk of injury.

## METHODOLOGY

In this chapter, the procedure for the selection of the subjects, criterion measure, reliability of data, design of the study, procedure for administering the test, administration of training program and statistical techniques used for analysis of data has been discussed.

## SELECTION OF SUBJECTS

Twenty male students from different colleges of Kurnool District Athletes were selected as subjects for the study, on the basis of the best performance in 100 meters sprint. The average age of the subjects was 20 years ranging between 18 and 22 years.

The requirements of the research study were explained to all subjects in the presence of the coaches and physical education teachers of the college concerned and all of them agreed voluntarily to undergo the testing and training programs. A through orientation of the requirements of the experimental procedures, testing as well as exercise schedules were explained to the subjects so that there was no ambiguity.

The subjects were oriented to testing and training procedure for two weeks to eliminate the learning effect. The subjects were exempted from attending the required program of the college and were asked not to take part in any voluntary sports programs or unusual physical exertions.

The subjects were at random, assigned to two groups, one is experimental group and another one is control group, each group consisting of 10 Subjects. The experimental group was hill running & core strength training (Group A), group and control group (Group B). Performance of the subjects in 100 meters run was taken at the beginning and after an experimental period of 12 weeks.

## CRITERION MEASURES

The criterion measure chosen to find out the effect of hill running was the time taken by the subject to run a distance of 100 meters as fast as possible and recorded to the nearest 1/100 $^{th}$ of a second. The time was clocked with the help of stopwatches, which were properly calibrated and synchronized.

## RELIABILITY OF DATA

The reliability of data was ensured by establishing instrument reliability and tester competency.

## INSTRUMENT RELIABILITY

The stopwatches used in this study were supplied by the District Athletics Association Kurnool. These watches were also used in the Kurnool District Athletic Championships held at DSA stadium, at Kurnool district A.P.

## TESTER COMPETENCY AND RELIABILITY OF THE TESTER

The tester competency was evaluated together with the reliability of the test. To determine the reliability of test, data on 100 meters sprint performance were recorded thrice with a gap of one day in between, under identical

conditions, on 20 subjects selected at random under guidance of Kurnool District Athletics Association Kurnool (A.P.). All the measurements were taken by the investigator with the assistance of Physical Education Teachers and Senior Athletes.

The scores thus obtained on two occasions were co-related using Pearson's Product Moment Co-relation method. The co-relation of coefficient of 0.887 thus obtained showed that data were reliable and also verified the competency of the tester.

## EXPERIMENTAL DESIGN

For the present study the experimental design adopted was random group design. Equal numbers of subjects were assigned randomly to two groups of 10 subjects to each group. The experimental treatments were also assigned randomly to the experimental group A and control group B. The experimental group was administered different kinds of training programs for the development of sprinting speed & core strength training. One group was trained with the method of hill running & core strength training (Group A) and the second group with Control group (Group B) . The distance chosen for each of the training was 100 meters. The training sessions were conducted thrice a week i.e. on Mondays, Wednesdays and Fridays. Timing for 100 meters was taken before and after an experimental period of 12 weeks. The subjects were advised not to take part in any voluntary sports programs or unusual physical exertions so that physical activities remained uniform for all the groups chosen for the study.

## PROCEDURE FOR ADMINISTERING THE TEST

All the subjects were assembled on the track of the District Sports Authority Stadium, Kurnool district AP. They were briefed on the objectives and the requirements of the test.

The test was conducted on the 400 meters track of District Sports Authority Stadium Kurnool A.P. All the eight lanes of 100 meters straight were properly marked. The subjects were instructed to warm-up on their own in order to gain the best performance and avoid possible injuries. The subjects were started in groups of two and assigned for identification by the judges and timekeepers.

## SPRINTING SPEED TEST (100 METERS)

## EQUIPMENT USED AND MARKING

### Clapper and Stop watches

100 meters distance was measured with eight parallel lines with a gap of 1.22 meters in between each two consecutive lines.

### Description of Test

All the subjects ran with running shoes and Crouch start was adopted by all. The starting command used by the research scholar “on your marks", "set" and in place of "go" the clapper or whistle was sounded. Time keepers at the finishing line recorded the time.

### Rules

The conduct of test’s and recording the official timing’s of each subject was as per the rules and regulation prescribed by the IAAF.

### Scoring

The elapsed time from the starting signal until the runner's torso crossed the finish line was recorded to the nearest $1/100^{th}$ of a second for each subject.

### Administration of Training Program

The experimental groups met thrice a week for a period of 12 weeks. The first two weeks training for all the experimental groups was for physical conditioning, determining the starting practice of Hill running, so that physical and physiological system of the subjects were ready to undertake the specific load.

The load in respect of Hill running was fixed according to the pulse rate reached at the end of the 100 meters Hill running. Each subject performed two sets in Hill running and 6 to 8 repetitions. A rest period of ensuring complete recovery was provided between the two sets.

## HILL RUNNING

Hill running is running up or slope, Hill running improves strength and running efficiency (Running economy). Hill running increases aerobic capacity, running economy, stamina, builds in strength in gluteal (buttock), quadriceps (front of thigh), gastrocnemius (upper calf) and soleus calf (lower calf) muscles.

The subject was asked to run distance of 100 meters on a up-hill track with a gradient of 15 to 30°. Subject performed 6 to 8 repetition with complete recovery between the two sets. Subject covered this distance as fast as possible.

## CORE STRENGTH TRAINING

The great way to provide foundational strength to work on various muscle groups for the core, Stretching, Crab Walk, Plank, Side Plank, Knee Lifts Sitting in Chair, Leg Scissors, Inchworm.

## ANALYSIS OF DATA AND RESULTS OF THE STUDY

The statistical analysis of data speed endurance scores collected on 10 male subjects belonging to a group has been presented in this chapter. The group was not equated in any way and the data on selected criterion measure for all the groups were collected under similar conditions.

The data was examined by calculating the “t” ratio and analysis of variance and covariance. The “t” ratio was applied to examine, the significance of differences between pre-test and post-test means of the group to study the improvement in sprint speed as a result of training. Analysis of co-variance was applied with regard to Hill running & core strength training group in this study. Hence, the difference between initial means of the group at present had to be taken in to account during the analysis of post-test differences between the means by the process of application of ANCOVA where the final means were adjusted for difference in the initial means and adjusted means were tested for significance of differences. The differences in the final and adjusted means were tested for significance at 0.05 levels.

## LEVEL OF SIGNIFICANCE

The level of significance to check the 't’ ratio and 'f ratio was set at 0.05 level of confidence, which was considered as appropriate and adequate for the purpose of this study.

## FINDINGS

The significance of difference between the pre-test and post-test means for the group 100 meters sprinting speed performance and their "t" ratio has been presented in Table.

## TABLE

## SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEANS FOR THE EXPERIMENTAL GROUP & CONTROLE GROUP (100 metres sprint)

| Groups | Pre-test means (in seconds) | Post-test means (in seconds) | .M | .M | 't' ratio |
|---|---|---|---|---|---|
| **A** | 16.25 | 15.45 | 80 | 22 | 3.63 |
| **B** | 15.86 | 14.96 | 90 | 32 | 2.81 |

Significance at.05 levels

The table indicates that "t" ratio of 3.63 for the group was significant at 0.05 level of confidence. The t-ratio required to be significant at 0.05 level was 2.05.

## DISCUSSION

A good sprinter one must possess speed, endurance, explosive strength and core strength besides technical perfection and strong determination. This factor can be developed through scientific and systematic program of training. When an athlete trains with proper adequate load, adaptation of the morphological and physiological system takes place, which in turn improves anaerobic and aerobic capacities, which mainly responsible for improvement of speed performance.

The anaerobic changes resulting from training are muscular hypertrophy, increased myofibrils, increase in protein particularly actin and myosin both in quality and quantity, improved glycolytic system and increase in phosphagens (ATP-CP)system which results in improvements of power and speed organism. On other hand the aerobic modification bring about rapid oxidation of carbohydrates (glycogen) and delay lactic acid accumulation, which in turn prevent fatigue and improves cardio-respiratory efficiency.

## DISCUSSION OF HYPOTHESIS

The hypothesis stated earlier in the study has been accepted on the basis of the result shown by the Hill running & core strength training employed in the study.

## CONCLUSION

Hill running & core strength training is effective in maintaining muscle tissue increased strength control body fat decreased risk of injury and it can increase metabolism, it will increase stride length and stride frequency and improve heart efficiency.

## REFERENCES

A Donati,IAAF New studies in Athletics,1995."The development of stride length and stride frequency in sprinting".

Dintiman,G,Tellez,T,&Ward,R.1997).Sports Speed 2nd Edition.Leisure Press,USA.Frost,B Reuben.Physical Education Foundation Practices Principles.London:Addison-Wesley Publishing Company,1975.)

Hardayal Singh,Science of Sports training,p86,1995.

Majumdar,A.S.,&Robergs,R.A.(2011).The science of speed:Determinants of performance in the 100m sprint.International Journal of Sports Science and Coaching,6,479-493.

Young W.Sprint bounding and the sprint bound index.Natl Str Cond Assoc J.1992;14(4):18-21.[Google Scholar]

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# ROLE OF PHYSICAL ACTIVITY, EXERCISES AND NUTRITION FOR HEALTHY LIFE IN MODERN LIFESTYLE – A STUDY

**Dr. K. Sridhar Reddy**
**Department of Physical Education,**
**St. Joseph's Degree & PG College (SJC),**
**King Koti, Hyderabad,**
**sridharsportssjc@gmail.com**

**Mrs. G. Seetha Lakshmi**
**Department of Physical Education,**
**St. Joseph's Degree & PG College (SJC),**
**King Koti, Hyderabad,**
**sita2101@gmail.com**

## ABSTRACT

Physical activity, fitness, and exercise are critically important for the health and well being of people of all ages. The purpose of the study is to promote a sense of health and fitness, personal responsibility in being fit, and an appreciation of individual and group achievement. It provides them the opportunity to participate in activities that may be of ongoing interest to them throughout their health life. The Role of Physical activity on Health and Wellness**:** Engaging in sport and physical activities, including physical fitness activities, plays a significant role in promoting health and wellness among children and adolescents. Not only does such activity help improve the physical fitness and health of children and youth, but also it is an integral strategy for stemming childhood obesity. Physical activity simply means movement of the body that uses energy. Physical exercise is the performance of some activity in order to develop or maintain physical fitness and overall health. Health is a basic human right health is mans natural condition his birth right. It is the result of living in accordance with the natural laws pertaining to the body, mind and environment. Components of Food for Good Health**:** Food provides us provides us with the energy we need for growth, physical activity and for basic body functions such as breathing, thinking, temperature control, blood circulation and digestion etc. food also supplies us with the materials. In conclusion physical activity is only one of many everyday behaviors that affect health. In particular, nutritional habits are linked to some of the same aspects of health as physical activity & exercises,

and the three may be related lifestyle characteristics. This study deals solely with physical activity & sports to enhance the healthy life style in promoting the modern life style. Key Words: Physical Activity, Exercises, Nutrition and Health

## INTRODUCTION

Physical activity, fitness, and exercise are critically important for the health and well being of people of all ages. Research has demonstrated that virtually all individuals can benefit from regular physical activity, whether they participate in vigorous exercise or some type of moderate health-enhancing physical activity. Even among frail and very old adults, mobility and functioning can be improved through physical activity. Therefore, physical fitness should be a priority for people of all ages in modern life. Physical activity has been shown to reduce the morbidity and mortality from many chronic diseases. Millions suffer from chronic illnesses that can be prevented or improved through regular physical activity:

## SIGNIFICANCE OF THE STUDY

The purpose of the study is to promote a sense of health and fitness, personal responsibility in being fit, and an appreciation of individual and group achievement. It provides them the opportunity to participate in activities that may be of ongoing interest to them throughout their health life.

## PHYSICAL ACTIVITY IN HEALTH AND DISEASE

Physical inactivity is recognized as a significant common and preventable risk factor for non communicable diseases, which account for almost 60% of global deaths and 43% of global burden of chronic disease. Maintaining regular physical activity helps avoid positive energy balance and obesity. Physical activity reduces the risk of developing heart disease, type II diabetes, osteoporosis, colon cancer, and may also play a protective role against breast cancer. Physical activity also plays a role in a person's well being by reducing stress, anxiety and feelings of depression in the individuals.

## THE ROLE OF PHYSICAL ACTIVITY ON HEALTH AND WELLNESS

Engaging in sport and physical activities, including physical fitness activities, plays a significant role in promoting health and wellness among children and adolescents. Not only does such activity help improve the physical fitness and health of children and youth, but also it is an integral strategy for stemming childhood

obesity—a critical health priority for our nation. Physical fitness is not only one of the most important keys to a healthy body; it is the basis of dynamic and creative intellectual activity. John F. Kennedy, 35th President of the United States. Health benefits that result from regular participation in physical activity include reducing the risk of developing type 2 diabetes and metabolic syndrome and improving metabolic health in youth. Such activity also benefits musculoskeletal health. "Compared to those who are inactive, physically active youth have higher levels of cardio-respiratory fitness and stronger muscles. They also typically have lower body fatness and their bones are stronger. Youth who are regularly active also have a better chance of a healthy adulthood". Physical activity through sport makes it less likely that risk factors for chronic diseases, such as heart disease, hypertension, type 2 diabetes, and osteoporosis, will develop later in life.

## PHYSICAL INACTIVITY

Low levels of physical activity are a major risk factor for ill health and mortality from all causes. People who do not do sufficient physical activity have a greater risk of cardiovascular disease, colon and breast cancers, Type 2 diabetes and osteoporosis. Being physically active improves mental and musculoskeletal health and reduces other risk factors such as overweight, high blood pressure and high blood cholesterol.

## PHYSICAL ACTIVITY

Physical activity simply means movement of the body that uses energy. Walking, gardening, briskly, climbing the stairs, playing soccer, or dancing the night away are all good examples of being active. For health benefits, physical activity should be moderate or vigorous intensity. Important of Physical Activity**:** Regular physical activity can produce long term health benefits. People of all ages, shapes, sizes, and abilities can benefit from being physically active. The more physical activity you do, the greater the health benefits.

## PHYSICAL EXERCISE

Physical exercise is the performance of some activity in order to develop or maintain physical fitness and overall health. It is often directed toward also honing athletic ability or skill. Frequent and regular physical exercise is an important component in the prevention of some diseases such as heart disease, cardiovascular disease, Type 2 diabetes and obesity. Exercises are generally grouped into three types depending on the overall effect they have on the human body: Flexibility exercises such as stretching improve the range of motion of muscles and joints; aerobic exercises such as walking and running focus on increasing cardiovascular

endurance; and anaerobic exercises such as weight training, functional training or sprinting increase short-term muscle strength. Physical exercise is considered important for maintaining physical fitness including healthy weight; building and maintaining healthy bones, muscles, and joints; promoting physiological well-being; reducing surgical risks; and strengthening the immune system.

**HOW MUCH EXERCISE - YOU NEED**

If you don't currently exercise and aren't very active during the day, any increase in exercise or physical activity is good for you. Aerobic physical activity—any activity that causes a noticeable increase in your heart rate—is especially beneficial for disease prevention. Some studies show that walking briskly for even one to two hours a week (15 to 20 minutes a day) starts to decrease the chances of having a heart attack or stroke, developing diabetes, or dying prematurely.

The 2008 Physical Activity Guidelines recommends that healthy adults get a minimum of 2-1/2 hours per week of moderate-intensity aerobic activity or get a minimum of 1-1/4 hours per week of vigorous-intensity aerobic activity, or a combination of the two. To lower your risk of injury, it's best to spread out your activity over a few days in of the week. You can combine moderate and vigorous exercise over the course of the week—say, by doing 20 to 25 minutes of more vigorous intensity activity on two days and then doing 30 minutes of moderate intensity activity on two days. It's fine to break up your activity into smaller bursts, as long as you sustain the activity for at least 10 minutes. Adults should also do muscle-strengthening activities on at least two days for the week. Children should get at least 1 hour or more a day of physical activity in age-appropriate activities. Healthy older adults should follow the guidelines for adults.

**EXERCISE INTENSITY: What's Moderate, What's Vigorous?**

Moderate-intensity aerobic activity is any activity that causes a slight but noticeable increase in breathing and heart rate. One way to gauge moderate activity is with the "talk test"—exercising hard enough to break a sweat but not so hard you can't comfortably carry on a conversation. Vigorous-intensity aerobic activity causes more rapid breathing and a greater increase in heart rate, but you should still be able to carry on a conversation—with shorter sentences.

Keep in mind that what feels like moderate activity for one person may actually be very vigorous activity for another: A typical young marathon runner, for example, could walk at a 4-mile-per-hour pace without breaking a sweat. But this same pace would likely feel very vigorous for the typical 90-year-old person.

## HEALTH

One of the most widely used definitions of health is that of the WHO, which defines health as: **"**A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity**"**. This definition goes well beyond a condition of physical health but includes mental health and general well-being. Sports and physical activity have long been used as a tool to improve mental, physical and social well-being**.** Physical inactivity is a major risk factor associated with many lifestyle diseases such as cardiovascular disease, cancer, diabetes and obesity. Sport projects that specifically focus on health outcomes generally emphasize:

- The promotion of healthy lifestyle choices among children and young people as well as adults to combat inactivity.
- The use of sport as a tool to raise awareness on communicable diseases in developing countries, for example, through district or national health campaigns supported by athletes and sports competitions.
- The use of sport as a didactical tool to communicate vital health-related information to 'at risk' groups.
- The use of sport to mobilise hard-to-reach groups as part of large-scale health campaigns, including for example, communities with low population density.
- Sport is considered to contribute to achieving mental health objectives, including addressing depression and stress-related disorders.

## PHYSICAL ACTIVITY AND PSYCHOSOCIAL HEALTH

The WHO has estimated that "one in four patients visiting a health service has at least one mental, neurological or behavioral disorder, but most of these disorders are neither diagnosed nor treated". Several studies have shown that exercise may play a therapeutic role in addressing a number of psychological disorders**.** Studies also show that exercise has a positive influence on depression. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as physiological, cognitive and affective

benefits, however, that does not exclude the social and inter-personal benefits of sport and physical activity which can also produce positive health effects in individuals and communities.

## PHYSICAL ACTIVITY & EXERCISES AS PART OF A HEALTHY LIFESTYLE

Several factors influence the way in which sport and physical activity impacts on health in different populations. Sport and physical activity may not directly lead to benefits but, in combination with other factors, can promote healthy lifestyles. There is evidence to suggest that changes in the environment can have a significant impact on opportunities for participation and in addition, the conditions under which the activity is taking place can heavily impact on health outcomes**.** Elements that may be determinants on health include nutrition, intensity and type of physical activity, appropriate footwear and clothing, climate, injury, stress levels and sleep patterns.

Sport and physical activity can make a substantial contribution to the well-being of people. Exercise, physical activity and sport have long been used in the treatment and rehabilitation of communicable and non-communicable diseases**.** Physical activity for individuals is a strong means for the prevention of diseases and for nations is a cost-effective method to improve public health across populations. During recent decades, there has been a progressive decline in the level of physical activity in people's daily lives. For a majority of people, little physical effort is involved any more in their work, domestic chores, transportation and leisure. Whilst specific health risks differ between countries and regions, the fact remains that physical inactivity is a major risk factor for most common non-communicable diseases and physical activity can counteract many of the ill effects of inactivity.

## NUTRITION

Health is a basic human right health is mans natural condition his birth right. It is the result of living in accordance with the natural laws pertaining to the body, mind and environment Metabolic processes that occur in the cells of the healthy human body are complex, orderly, and efficient. A great variety of chemical compounds are involved in these reactions of metabolism. Those chemical compounds that come into the body as food and participate in metabolic processes are called nutrients. Nutrients that are essential for life and health include proteins that contain specific amino acids, fats that contain specific fatty acids, carbohydrates, several vitamins, many mineral elements, and water. Proteins, fats carbohydrates, and water are also important in

determining the quality characteristics of prepared foods. A food may be defined as any substance that, when taken into the body, will perform one or more of the following functions.

- Build new tissues and maintain or repair old body tissues.
- Provide energy.
- Regulate body processes.

The principal constituents of foods used for the building and maintenance of tissues are proteins, minerals, and water. Vitamins play an important role, probably regulatory, in growth processes but enter also into the structure of somebody components such as the visual-purple pigment of the eye. Common foods are mixtures of nutrients. Some highly processed foods, such as table sugar, shortenings, and oils provide a single nutrient, and in some foods one or two nutrients predominate. Generally, however, each food may be expected to contribute to the diet in several ways. The nutrients in foods are affected by various practices of handling and preparation.

## COMPONENTS OF FOOD FOR GOOD HEALTH

Food provides us provides us with the energy we need for growth, physical activity and for basic body functions such as breathing, thinking, temperature control, blood circulation and digestion etc. food also supplies us with the materials. To build and maintain the body and to promote resistance to disease. Thus, there different functions are made possible by the nutrients contained in food.

## CARBOHYDRATES:

Carbohydrates, which are composed of the elements carbon, hydrogen, and oxygen, are either sugars or more complex substances, such as starch, which are formed by combining many sugars together. The simplest sugar carbohydrates are called monosaccha-rides, saccharide referring to their sweetness and mono to the fact that they are a single unit. Three simple sugars or monosaccharide's that are of importance in food preparation are glucose, fructose, and galactose.

## PROTEINS:

Proteins are unique because in addition to containing the elements carbon, hydrogen and oxygen, they also contain nitrogen. Sulfur is often present in proteins. Proteins are large molecules made up of a small amino acid molecules joined together in a special linkage called peptide linkage. These linkages produce long chains that then coil or bend into shapes that are characteristic for a particular protein. Some proteins are generally round or

globular in shape whereas others are long and fibrous. Approximately twenty amino acids are commonly included in the structure of proteins.

**FATS:**

Fats are composed of the same elements as are carbohydrates that are carbon, hydrogen, and oxygen. However, fats have much more carbon and hydrogen and much less oxygen than do carbohydrates. Because of this, fats are a more concentrated source of energy. The oxidation of 1 gram of pure fat in the body produces 9 kilocalories whereas the oxidation of 1 gram of pure carbohydrate yields 4 kilocalories when protein is used by the body cells for energy.

**MINERALS:**

Carbon, hydrogen, oxygen and nitrogen make up about 96 percent of the human body composition. The remaining 4 percent is composed of mineral elements or inorganic nutrients. Minerals are needed in the body for hard tissues, such bones and teeth, and for soft tissues and body fluids, not all minerals that have been found in the body are known to be essential, but many have been shown to be necessary. Minerals may act as building materials in both hard and soft tissues of the body and as body regulators.

**VITAMINS:**

Vitamins are organic chemical compounds that are required in the diet in only very small amounts but are vital for normal growth and health. The early differentiation of vitamins was by letters of the alphabet, but as chemical identification has become clear, the tendency is to use the chemical name instead. Vitamins are primarily regulatory substances, as a group they promote growth and the maintenance of health and vigor. They bring about these effects usually by their roles as catalysts in chemical reactions throughout the body.

**THE BENEFITS OF PHYSICAL ACTIVITY & EXERCISES**

Although there are no sure-fire recipes for good health, the mixture of healthy eating and regular exercise comes awfully close. Regular exercise or physical activity helps many of the body's systems function better, keeps heart disease, diabetes, and a host of other diseases at bay, and is a key ingredient for losing weight.

- Improves your chances of living longer and living healthier

- Helps protect you from developing heart disease and stroke or its precursors, high blood pressure and undesirable blood lipid patterns
- Helps protect you from developing certain cancers, including colon and breast cancer, and possibly lung and endometrial (uterine lining) cancer
- Helps prevent type 2 diabetes (what was once called adult-onset diabetes) and metabolic syndrome (a constellation of risk factors that increases the chances of developing heart disease and diabetes; read more about simple steps to prevent diabetes)
- Helps prevent the insidious loss of bone known as osteoporosis
- Reduces the risk of falling and improves cognitive function among older adults
- Relieves symptoms of depression and anxiety and improves mood
- Prevents weight gain, promotes weight loss (when combined with a lower-calorie diet), and helps keep weight off after weight loss
- Improves heart-lung and muscle fitness
- Improves sleep

**CONCLUSIONS:**

Presently as unhealthy lifestyles are the principal causes of modern-day illnesses such as heart disease, cancer, and diabetes, healthy lifestyles can result in an improved feeling of wellness that is critical to optimal health. In recognizing the importance of "years of healthy life," the Public Health Service also recognizes what it calls "measures of well-being." This well-being or wellness is associated with social, mental, spiritual, and physical functioning. Being physically active and eating well are two examples of healthy lifestyles that can improve well-being and add years of quality living.

These are regular physical activity (exercise), eating well, and managing stress. There are several reasons for placing priority on these lifestyles. First, they are behaviors that affect the lives of all people. Second, they are lifestyles in which large numbers of people can make improvement. Finally, modest changes in these behaviors can make dramatic improvements in individual and public health. To be sure, the other healthy lifestyles. Hence the majority of the population can benefit from increasing their activity level, eating a better diet, and managing personal stress. For example, statistics suggest that modest changes in physical activity patterns and nutrition can prevent more than 200,000 premature deaths annually. Similarly, learning to manage stresses that all of us

face daily can result in significant reductions in more than a few health problems. Stress has a major impact on drug, alcohol, and smoking behavior so managing stress can help individuals minimize or avoid these behaviors. The study is focused on the priority healthy lifestyles because virtually all people can achieve positive wellness benefits if they adopt them.

Finally, physical activity is only one of many everyday behaviors that affect health. In particular, nutritional habits are linked to some of the same aspects of health as physical activity & exercises, and the three may be related lifestyle characteristics. This study deals solely with physical activity & sports to enhance the healthy lifestyle in promoting the modern lifestyle.

**REFERENCES:**


- U.S. Dept. of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. 2008.
- Wang G, Pratt M, Macera CA, Zheng ZJ, Heath G. Physical activity, cardiovascular disease, and medical expenditures in U.S. adults. *Ann Behav Med*. 2004; 28:88-94.
- F. Edward Coyle, Mari. K. Hammert and Andrew R. Coggan, Effect of determining of Cardiovascular responses to exercise: "Role of Blood Volume Journal of Applied Physiology" 60, No. 1 (Jan. 1986), P. 95-99.
- George T. Stafford & Ray O. Duncan, Physical conditioning Exercises for Sports and Health living (New York: The Ronald Press Co., 1965) P. 15
- Madanmohan, Kaviraja Udupa, Ananda Balayogi Bhavanani, Chetan Chinmaya Shatapathy and Ajit Sahai, modulation of cardiovascular response to exercise by yoga training, Department of Physiology, Department of Social and Preventive Medicine, Jawaharlal Institute of Post Graduate Medical Education & Research (JIPMER), Pondicherry, India.
- Hamel "Heredity and Muscle Adaption to Endurance Training "Medicine and Science in Sports and Exercise". P. 16
- Pratt M, Macera CA, Wang GJ. Higher direct medical costs associated with physical inactivity. *Physician and Sports medicine*. 2000; 28:63-70.
- Owen N, Healy GN, Matthews CE, Dunstan DW. Too much sitting: the population health science of sedentary behavior. *Exerc Sport Sci Rev*. 2010; 38:105-13.

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# EFFECT OF YOGA ON AUTO IMMUNE DISEASES IN SPECIAL REFERENCE TO OSTEOARTHRITIS

**Sumit Singh,**
**Research Scholar,**
**Physical Education, JJTU Rajasthan**

**Dr, Neeraj Jain,**
**Professor of Eminence**
**Department of Physical Education**
**University of Lucknow**
**NAAC ACCREDITED A++,**
**Visiting Professor JMTU**
**Rampur Kota Rajasthan.**

## ABSTRACT

The purpose of the study was to analyze the effect of Yoga on osteoarthritis patient. 80 subjects randomly selected ranging age group 40 to 60 years for the study

On the basis of the finding within the limitation of the study, the first part of the hypothesis has been accepted and second part of the hypothesis of the study has been rejected.

## INTRODUCTION

According The Bhagavad Gita, "Yoga is the journey of the self, through the self, to the self. In Yoga, the body, breath and mind are seen as a union of these multi-dimensional aspects of each and every human being. The system and various techniques of Yoga cultivate the experience of that union, leading to greater integration of being, internal peacefulness, and clarity of the mind. It is a system that is designed to cultivate health and happiness, and a greater sense of self-awareness and higher consciousness.

Yoga's integrative approach brings deep harmony and unshakable balance to body and mind in order to awaken our latent capacity for a higher consciousness that is the true purpose of human evolution. The many methods of yoga spans a vast range from physical postures to breathing practices and meditation, all based upon a philosophy of consciousness and natural way of life.

The aim of the study was to analyze the effect of Yoga on Osteoarthritis patient. The pre and post test on patient included the Haematological analysis of whole blood ? hemoglobin, T.L.C. (Total Leukocyte Count) Segmented Neutrophils, Lymphocytes, Monocytes, Eosinophils, and

E.S.R. (Wester gran Method and Serology and Immunology-Examination C.R.P. (C Reactive Protein- Latex agglutination Test), OA Factor (Osteoarthritis Factor), and A.S.O. (ASO Titre).

## METHODOLOGY

The study was designed to analyze the effect of Yoga patients who are The study was years of age, are randomly included in the sample with the consideration that they showed their willingness to participate. The subjects is been divided in experimental and control groups. The experimental groups consist of 20 men and 20 women and in the same manner control groups consist of 20 men and 20 women participant. Different Yoga practices is been applied on the experimental group for 2 months while control group was remain untouched.

For this study the following Yoga Practices were chosen:

1. Asana
2. Pranayama
3. Satkarma
4.. Yog Nindra

## RESULT AND DISCUSSION

On the basis of the results, the first part of the hypotheses which hypothesized that yoga has a positive effect on Osteoarthritis patient and there will be a significant difference in experimental group has been accepted. The

part of the hypotheses which that there may be significant difference on Osteoarthritis patients in control group of the study has been rejected.

The aim of the study was to analyze the effect of Yoga on Osteoarthritis patient. The pre and post test on patient included the Haematological analysis of whole blood Hemoglobin, TLC. (Total Leukocyte Count). Segmented Neutrophils, Lymphocytes, Monocytes, Eosinophils, and E.S.R. (Wester gren Method and Serology and Immunology-Examination Latex agglutination Test), OA Factor and A.S.O. ASOTI C.R.P. (C Reactive Protein – Latex agglutination Test), OA Factor (Osteoarthritis Factor), and A.S.O. ASO Title.

The data on Haematological analysis of whole blood examined by 't'test (test of significance). The data on Serology and Immunology-Examination were examined by Chi Square Test ($X^2$). The level of significance was fixed at 0.05 level.

For this present study, it is hypothesized that yoga has a positive effect on Osteoarthritis patients and there will be a significant differences in experimental group. In the second hypothesis, It is hypothesized that there may be significant differences on Osteoarthritis patients in control group of the study.

**Part-A: Haematological Analysis of Whole Blood**

1. The study revealed that there was a significant difference obtained in Hemoglobin for experimental group of male and female participants.

2. The study revealed that there was no significant difference obtained in Hemoglobin for control group of male and female participants.

3. The study revealed that there was a significant difference obtained in Hemoglobin for experimental group of male participants.

4. The study revealed that there was no significant difference obtained in Hemoglobin for control group of male participants.

5. The study revealed that there was a significant difference obtained in Hemoglobin for experimental group of female participants

6. The study revealed that there was no significant difference obtained in Hemoglobin for control group of female participants.

7. The study revealed that there was a significant difference obtained in T.L.C. (Total Leukocyte Count) for experimental group of male and female participants

8. The study revealed that there was no significant difference obtained in T.L.C. (Total Leukocyte Count) for control group of male and female participants.

9. The study revealed that there was a significant difference obtained in T.L.C. (Total Leukocyte Count) for experimental group of male participants.

10. The study revealed that there was no significant difference obtained in T.L.C. (Total Leukocyte Count) for control group of male participants.

11. The study revealed that there was a significant difference obtained in T.L.C. (Total Leukocyte Count) for experimental group of female participants.

12. The study revealed that there was no significant difference obtained in T.L.C. (Total Leukocyte Count) for control group of female participants.

13. The study revealed that there was a significant difference obtained in Segmented Neutrophils for experimental group of male and female participants.

14. The study revealed that there was no significant difference obtained in Segmented Neutrophils for control group of male and female participants.

15. The study revealed that there was a significant difference obtained in Segmented Neutrophils for experimental group of male participants.

16. The study revealed that there was no significant difference obtained in Segmented Neutrophils for control group of male participants.

17. The study revealed that there was a significant difference obtained in Segmented Neutrophils for experimental group of female participants.

18. The study revealed that there was no significant difference obtained in Segmented Neutrophils for control group of female participants.

19. The study revealed that there was a significant-difference obtained in Lymphocytes for experimental group of male and female participants.

20. The study revealed that there was no significant difference obtained in Lymphocytes for control group of male and fernale participants.

21. The study revealed that there was a significant difference obtained in Lymphocytes for experimental group of male participants.

22. The study revealed that there was no significant difference obtained in Lymphocytes for control group of male participants.

23. The study revealed that there was a significant difference obtained in Lymphocytes for experimental group of female participants.

24. The study revealed that there was no significant difference obtained in Lymphocytes for control group of female participants.

25. The study revealed that there was a significant difference obtained in Monocytes for experimental group of male and female participants.

26. The study revealed that there was no significant difference obtained Monocytes for control group of male and female participants.

27. The study revealed that there was a significant difference obtained in Monocytes for experimental group of male participants.

28. The study revealed that there was no significant difference obtained in 40. The Monocytes for control group of male participants.

29. The study revealed that there was a significant difference obtained in Monocytes for experimental group of female participants.

30. The study revealed that there was no significant difference obtained Monocytes for control group of female participants. In

31. The study revealed that there was a significant difference obtained in Eosinophils for experimental group of male and female participants.

32. The study revealed that there was no significant difference obtained in Eosinophils for control group of male and female participants.

33. The study revealed that there was a significant difference obtained in Eosinophils for experimental group of male participants.

34. The study revealed that there was no significant difference obtained in Eosinophils for control group of male participants.

35. The study revealed that there was a significant difference obtained in Eosinophils for experimental group of female participants.

36. The study revealed that there was no significant difference obtained in Eosinophils for control group of female participants.

37. The study revealed that there was a significant difference obtained in E.S.R. (Westergren) for experimental group of male and female participants.

38. The study revealed that there was no significant difference obtained in E.S.R. (Westergren) for control group of male and female participants.
39. The study revealed that there was a significant difference obtained in E.S.R. (Westergren) for experimental group of male participants.

40. The study revealed that there was no significant difference obtained in E.S.R. (Westergren) for control group of male participants.

41. The study revealed that there was a significant difference obtained in E.S.R. (Westergren) for experimental group of female participants.

42. The study revealed that there was no significant difference obtained in E.S.R. (Westergren) for control group of female participants.

**Part-B: Serology and Immunology-Examination**

1. The study revealed that there was a significant difference obtained in C.R.P. (C Reactive Protein) for experimental group of male and female participants.

2. The study revealed that there was no significant difference obtained in C.R.P. (C Reactive Protein) for control group of male and female participants.

3. The study revealed that there was a significant difference obtained in C.R.P. (C Reactive Protein) for experimental group of male participants.

4. The study revealed that there was no significant difference obtained in C.R.P. (C Reactive Protein) for control group of male participants.

5. The study revealed that there was a significant difference obtained i C.R.P. (C Reactive Protein) for experimental group of female participants.

6. The study revealed that there was no significant difference obtained C.R.P. (C Reactive Protein) for control group of female participants.

7. The study revealed that there was a significant difference obtained OA Factor (Osteoarthritis Arthritis Factor) for experimental group of male and female participants.

8. The study revealed that there was no significant difference obtained in DA Factor (Osteoarthritis Arthritis Factor) for control group of male and female participants.

9. The study revealed that there was a significant difference obtained in OA Factor (Osteoarthritis Arthritis Factor) for experimental group of male participants.

10. The study revealed that there was no significant difference obtained in OA Factor (Osteoarthritis Arthritis Factor) for control group of male participants.

11. The study revealed that there was a significant difference obtained in OA Factor (Osteoarthritis Arthritis Factor) for experimental group of female participants.

12. The study revealed that there was no significant difference obtained in OA Factor (Osteoarthritis Arthritis Factor) for control group of female participants.

13. The study revealed that there was a significant difference obtained in A.S.O. (ASO Titre) for experimental group of male and female participants.

14. The study revealed that there was no significant difference obtained A.S.O. (ASO Titre) for control group of male and female participants.

15. The study revealed that there was a significant difference obtained in A.S.O. (ASO Titre) for experimental group of male participants.

16. The study revealed that there was no significant difference obtained in A.S.O. (ASO Titre) for control group of male participants.

17. The study revealed that there was a significant difference obtained in A.S.O. (ASO Titre) for experimental group of female participants.

18. The study revealed that there was no significant difference obtained in A.S.O. (ASO Titre) for control group of female participants.

## CONCLUSIONS

On the basis of the findings and within the limitations of the study, the following conclusions are drawn:

On the basis of the results, the first part of the hypotheses has been accepted. The second part of the hypotheses of the study has been rejected. The conclusion of study showed that Yoga has a positive impact on the treatment of Osteoarthritis.

## REFERENCES

1. Allaire S. LiW, La Valley M. (2003). Reduction of job loss in persons with rhematic diseases receiving vocational rehabilitation. Arthritis and Rheumatism. 48 (11):3212-3218.

2. Annoni and Arosio, B (2000). Psychoimmunological Research Foundation Association Rserach on schizoprenia, Milan, Italy.

3. Bahru, H.K. (2002). A complete handbook of nature cure JAICO Publication House, P-205.

4. Barlow and Durand (1999). Abnormal Psychology. Page No. 274-279.

5. Bonadonna R. (2003). Meditation's Impact on Chronic Illness. Holist nurs Pract. 17:309-19.

6. Branemark, P.I. and Goldie, I (1969. Physiologic aspects on the timing of synovectomy in R.A, Early synovectomy in R.A. Exerpta Medical foundation.

7. Brenneman EC, Kuntz AB, Wiebenga EG and Maly MR (Thomas Bandholm, Editor) (2015). A Yoga Strengthening Program Designed to Minimize the Knee Adduction Moment for Women with Knee

Osteoarthritis: A Proof-Of-Principle Cohort Study. PLos One, 10(9): e0136854.

8. Bukowski EL, Conway A. Glentz LA. Kurland K, Galantino ML. (2006) The effect of lyengar Yoga and strengthening exercises for people living with osteoarthritis of the knee: a case series Int Q Community Health Educ. 26:287-305. doi: 10.2190/IQ.26.3.1.

9. Bussing A, Ostermann T, Ludtke R. Michalsen A. (2012). Effects of yoga interventions of pain and pain-associated disability: a meta-analysis J Pain. 13(1):1-9.

10. Calder KM, Acker SM, Arora N, Beattie KA, Callaghan JP, Adachi JD, and Maly MR. (2014). Knee power is an important parameter in understanding medial knee joint load in knee osteoarthritis. Arthritis Care Res (Hoboken). 2014 May; 66(5): 687-94. doi: 10.1002/acr.22223.

11. Carson and Mineka (2000). Abnormal Psychology and Modern Life. Page No. 314-315.

12. Catherine Woodyard (2011), Exploring the therapeutic effects of yoga and its ability to increase quality of life. Department of Health, Exercise Science and Recreation Management, The University of

Mississippi, The Center for Health Behavior Research, 215 Turner Center, University, MS, USA, 2011, V-4, Issue-2, P-4954.

13. CDC, National arthritis plan. (1999), A public health strategy. Atlanta, GA; Arthritis foundation. Association of state and tradition health officials, and CDC.

14. Cheung C, Justice C. Peden-McAlpine C. (2015). Yoga adherence in older women six months post-osteoarthritis intervention. Glob Adv Health Med. May; 4(3); 16-23. doi: 10.7453/gahmj;041.

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# "INNOVATIVE TEACHING METHODS IN PHYSICAL EDUCATION FOR BETTER LEARNING"

**Dr. E.B. Srikanth**
**Sports Coordinator**
**Birla Open Minds International School, Kollur**

**Mr. Anthony Johnson**
**Football Coach,**
**Birla Open Minds International School, Kollur**

**Mr. Nagendram Lakavath**
**Volleyball Coach,**
**Birla Open Minds International School, Kollur**

**Mr. Ravulapati Saibaba**
**Cricket Coach,**
**Birla Open Minds International School, Kollur**

## 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-appropriateequipment'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.

## REFERENCES

1. Sallis, J.F., and McKenzie, T.L. Physical education's role in public health. Res Q Exerc Sport, 1991, 62, 124-137.

2. Trost, S.G., and Mars, H.V. Why we should not cut PE. Health Learn, 2009, 67, 60-65.

3. SPARK. How SPARK Aligns with NASPE's National Standards for Physical Education. Available from: http:// www.sparkpe.org/standardsNASPE.pdf. [Last accessed on 2017 Feb 15].

4. India Today (PTI). Grukul Trust Launches School Sports Promotion Foundation. http://www.indiatoday. intoday.in/story/grukul-trust-launches-school-sportspromotion-foundation/1/469116.html. [Last accessed on 2017 Feb 15].

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# A COMPARATIVE STUDY ON LEG STRENGTH OF RURAL AND URBAN SCHOOL GIRLS AND BOYS

**Dr. Loveleen Bala**

**Assistant Professor in Physical Education**

**Prof. Gursewak Singh Govt. College of Physical Education, Patiala**

**The Maharaja Bhupinder Singh Punjab Sports University, Patiala.**

**Dr. Sneh Lata**

**Assistant Professor in Physical Education**

**The Maharaja Bhupinder Singh Punjab Sports University, Patiala.**

**Ms. Gagandeep Kaur**

**Research Scholar**

**Punjabi University, Patiala, Punjab, India.**

## ABSTRACT

The purpose of the study was to investigate the leg strength between rural and urban school students with the age group of 11 to 14 years. Total 80 subjects were the sample of this study selected through purposive random sampling technique divided into two groups as: Group-I: Urban and Rural school boys (N=40) Urban and Rural school girls (N=40). Leg strength was measured by alpha health-related physical fitness test battery for children (2009). Independent T-test was used as the statistical technique to obtain the results. The findings of the current study revealed that there was significant difference found between rural and urban school boys and no significant difference found between rural and urban school girls on standing broad jump when tested on 0.05 levels of significance. Keynote: Urban, Rural, School Students, Leg Strength.

## INTRODUCTION

Physical activity for the school children is the way for their growth, development and healthy living. "Physical activity is all about body movements known as exercise (Caspersen et. al. 1985). Bates (2006) discovered that physical activity on regular basis will help children for their physiological and psychological aspect of health. Keays and Allison (1995) considered that psychological and academic development can be improved by physically active children along with optimum diet intake. Physical movements are the basic mean of physical fitness. Clarke (1971) found that everyday activities can be easily performed by maintaining the physical fitness. The World Health Organization (1968) explain "Physical Fitness" to carry out day to day activity as per the work performed by an individual without any disturbance either sportsman and normal layman. According to Corbin et. al, (2000) body composition, cardiovascular fitness, flexibility, muscular endurance, and strength are the components of health-related physical fitness and agility, balance, coordination, power, speed and reaction time are the skill related physical fitness. It is the operational ability of the lungs and heart with the skeleton muscles.

## PURPOSE OF THE STUDY

The purpose of the study was to investigate the leg strength between rural and urban school students.

## METHODOLOGY

The study aims to measure the difference between leg strength of Urban and Rural school students of Patiala. Total eighty subjects were selected as the sample of the current study through random sampling technique from the urban and rural schools of Patiala district of Punjab. There were two groups: Group - I 40 subjects from rural and urban schools (20 rural girls & 20 urban girls) and Group -II 40 subjects from urban school (20 rural boys & 20 urban boys). Investigator collect the data through standing broad jump test from Alpha Health-Related Fitness Test battery for Children and Adolescents (Granda, December 2009) to measure leg strength of the subjects. Independent T-Test with descriptive analysis were used for test the hypothesis of the study.

## TOOLS OF THE STUDY:

- Standing Broad Jump

## RESULTS AND DISCUSSIONS:

**Table – 1 Descriptive Statistics and t-Value for Leg Strength Variable of Health-Related Physical Fitness on Rural and Urban School Girls**

**Measure: Leg Strength (Girls)**

| Groups | N | Mean | SD | df | T-Value | *p*-value (Sig.- value) |
|---|---|---|---|---|---|---|
| Rural Girls | 20 | .98 | .27 | | | |
| Urban Girls | 20 | 1.06 | .19 | 38 | 1.07 | .288 |

*Indicate significant at 0.05 levels

Table 1 shows the analysis of Independent T-Test of Group-I of school girls in relation to their leg strength. The values of mean and standard deviation for leg strength, variable of Health-Related Physical Fitness on rural and urban school girls are: .98, .27 and 1.06, .19 respectively. It also shows that the *p*-value = .288, which is less than 0.05 levels of significance, hence it shows no significant difference between rural and urban school girls on leg strength and Hypothesis No.1 "There exists significant difference on leg strength between rural and urban school girls" has been rejected.

**GRAPHICAL PRESENTATION ON MEAN AND SD OF LEG STRENGTH OF RURAL AND URBAN SCHOOL GIRLS**

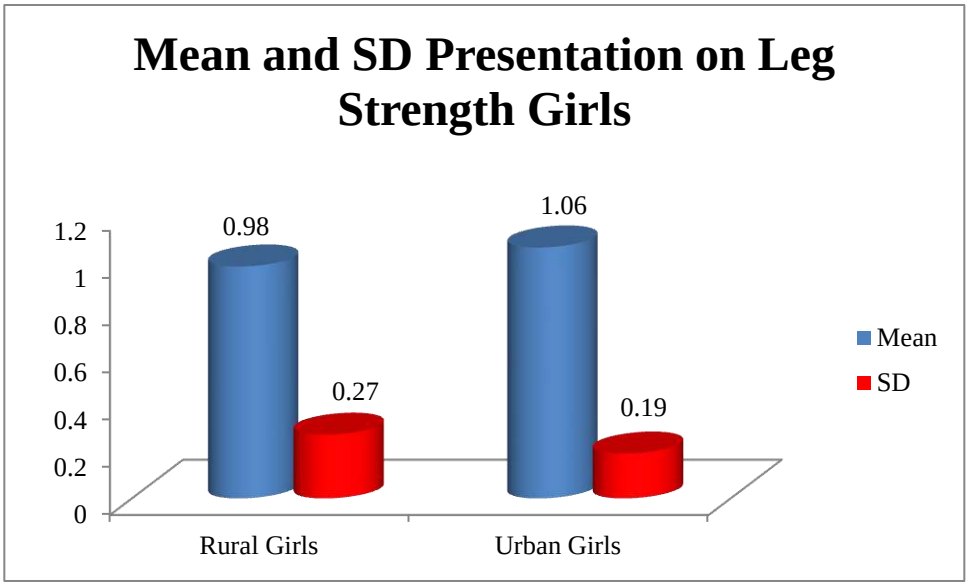


**FIGURE - 1**

**Table – 2**

**Descriptive Statistics and T-Value for Leg Strength Variable of Health-Related Physical Fitness on Rural and Urban School Boys**

**Measure: Leg Strength (Boys)**

| Groups | N | Mean | SD | df | T-Value | *p*-value (Sig.- value) |
|---|---|---|---|---|---|---|
| Rural Boys | 20 | 1.52 | .33 | | | |
| Urban Boys | 20 | 1.09 | .25 | 38 | 4.60 | .000** |

*Indicate significant at 0.05 levels

Table 2 shows the analysis of Independent T-Test of Group-II of school boys in relation to their leg strength. The values of mean and standard deviation for leg strength variable of Health-Related Physical Fitness on rural and urban School Boys are: 1.52, .33 and 1.09, .25 respectively. It also shows that the *p*-value = .000, which is less than 0.05 levels of significance, hence it shows significant difference between rural and urban school boys on leg strength and Hypothesis No.2 “There exists significant difference on leg strength between rural and urban school boys” has been accepted.

**GRAPHICAL PRESENTATION ON MEAN AND SD OF LEG STRENGTH OF RURAL AND URBAN SCHOOL BOYS**

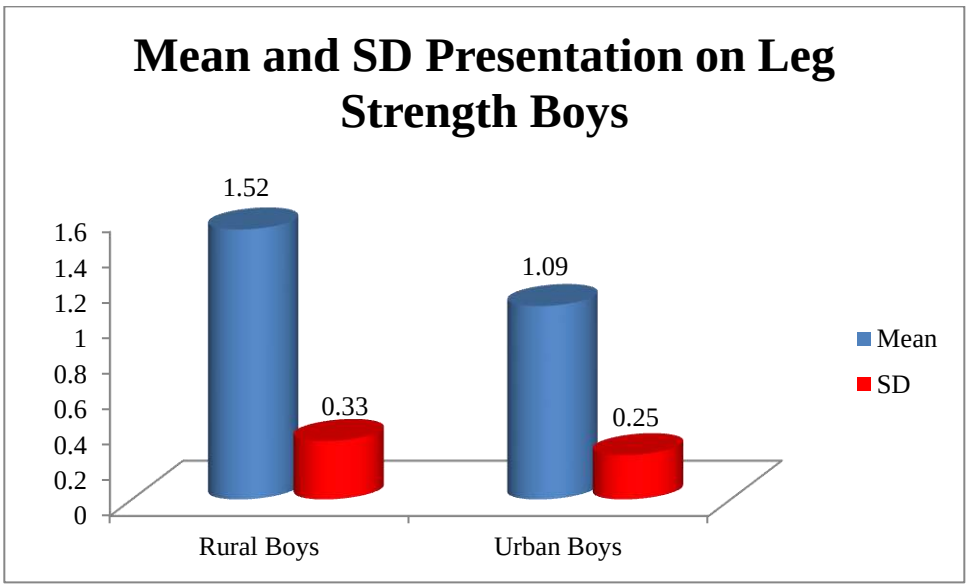


**FIGURE - 2**

## CONCLUSION

On the basis of obtained results following conclusions are made:

- There was no significant difference found between rural and urban school girls on leg strength.
- There was significant difference found between rural and urban school boys on leg strength.

## REFERENCES

Argyriadis. A., Patelarou. E., Paoullis. P, Patelarou, A., Dimitrakopoulos, I., Zisi, K., Northway, R., Gourni, M., Asimakapoulou, E., Katsarou, D. & Argyriadi. (2022). Self-assessment of health professional's culture competence: knowledge, skills & Mental health concepts for optimal health care. *International journal of environmental research & public health*, 19.

Bates, H. (2006). Daily physical activity for children any youth: a review synthesis of literature. *Canada: Alberta education*, pg: 2.

Caspersen, J.C., Powell, E.K., & Christenson, M.G. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Report, 100(2), 126–131.*

Chaeroni. A., Kusmaedi. N., Mamun. A., & Budiana. D. (2021). Physical fitness & Mental health in urban & rural Areas. *Malaysian journal of medical & health sciences*, Pg: 66-71.

Chahal, V., (2014). *Physical fitness of sportsmen and non-sportsmen in government senior secondary school (boys): A comparative study of District karnal,* 3(5).

Dai. J., Sang. X., Menhas. R., Xu. X., Khurshid. S., Mahmood. S., Weng. Y., Huang. J., Cai. Y., Shahzad. B., Iqbal. W., Gul. M., Saqib, Z.A. & Alam. M.N. (2021). The influence of COVID-19 pandemic on physical health-psychological health, physical activity & overall well-being: The mediating role of emotional regulations. *Frontiers in psychology*, 12.

Hawkins, T.G., Chung, S.C., Hertz, F.M. & Antdin, N. (2023). The school environment and physical and social emotional well-being: implications for students and school employees. *Journal of school health,* 93, pg: 799-812.

Karak, P., Gupta, A., Karmakar, P. & Maiti, R. (2022). Comparative study of physical fitness among rural and urban school students of Bankura, west Bengal. *AI Ameen J Med Sci,* 15(3), pg: 203-209.

Keays, J.J., on& Allison, K.R. (1995). The effects of regular moderate to vigorous physical activity student outcomes: a review. *Can journal of Public Health, 86(1), 62-5.*

Kumar. A., Kunwar. V. & Singh. H. (2019). Comparative study of physical fitness parameters of urban & rural school district Jammu & Kashmir. *International Journal of yogic, human movement & sports sciences,* 4(2), pg: 278-281.

Kumar. A., & Salian. P. (2020). A comparative study on physical fitness among rural and urban male students of Kodagu district. *International journal for innovative research in multidisciplinary field*, 6(8).

Kyle, UG., Gerton, L., Gremion, G., Slosman, DO., & Pichard, C. (2001). Physical activity and fat free and fat mass as measured by bioelectrical impdence in 3853 adults. *Med. Sci sports exerc*, 33, pg: 576-584.

Madhu. R., & Roy. M. (2019). A comparative study of selected physical fitness characterstics among rural and urban area secondary school sportsmen of Tamil Naidu. *International journal of physiology, nutrition and physical education*. 4(1), pg: 815-817.

Mushtaq, S.I., & Kumar, A. (2019). Comparative study of selected physical fitness components between rural & urban college students. *International journal of physiology, Nutrition & physical education*. pg no: 2403-2406.

Ojiambo, R., Gibson, A.R., Konstabel, K., Lieberman, D.E., Speakman, J.J., Reilly, J.J., & Pitsiladis, Y.P. (2013). *Free living physical activity and energy expenditure of rural children and adolescent in the Nandi region of Kenya*. 4094, pg no: 318-323.

Pena, R.M.E., Tan, S.K., & Malina, R.M. (2019). Urban-Rural contrast in the physical fitness of school children in Oaxaca. *American Journal of Human Biology*, pg no.800-813.

Rahmah, A.F., Nurlaela, N., Anugrah, R., & Putri, R.A.Y. (2024). Safe food treatment technology: The key to realizing the sustainable development goals (SDGS) zero hunger and optimal health. *ASEAN journal of agriculture and food engineering*, 3(1), pg: 57-66.

Rashid. Z., Tariq. S., Naeem. Y., Jabeen. Z., Tawq. M., & Karman, S.A. (2021). Association of lifestyle factor with sub optimal health status among undergraduate. *Journal of services institute of medical sciences,* 17(01), pg no: 3-6.

Singh, A., Bains, J., Gill, J.S., & Brar, R.S. (2003). *Essential of physical educattion*. India:kalyani publishers.

Singh. K., & Singh. A. (2019). Comparative study of selected physical fitness variables between government & private school students of urban & rural area. 4(1), pg: 2424-2427.

Singh, M.K. (2017). Comparative study of physical fitness parameters among 12 years old rural & urban children. *European journal of physical education & sport science,* 3(10).

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# AI-PRESCRIBED PERSONALIZED TRAINING PROGRAMS FOR BASKETBALL PLAYERS

**M. Pavithra[1]**

**[1*] PhD Research Scholar, Department of Physical Education,**

**Kumaraguru College of Liberal Arts and Science, Coimbatore, Tamilnadu.**

**Dr. S. Kamalakannan[2]**

**[2] Associate Head, Department of Physical Education,**

**Kumaraguru College of Liberal Arts and Science, Coimbatore, Tamilnadu.**

## ABSTRACT

This study explores the effectiveness of Artificial Intelligence (AI)-guided training on the performance metrics of basketball players, with a specific focus on dribbling, passing and shooting skills. Using a randomized controlled trial approach, players were divided into two groups: one undergoing AI-guided training routines and the other following traditional training methods. Data were collected over an 8-week period, with assessments conducted before and after the intervention to measure improvements in performance. A paired t-test was employed to analyse the differences between the two groups. The results indicate that AI-prescribed training significantly enhances various performance metrics among basketball players, demonstrating the potential of AI in optimizing athletic training programmes. **Keywords:** Artificial Intelligence, Dribbling, Passing, Shooting and Basketball Players.

## INTRODUCTION

In recent years, Artificial Intelligence (AI) has gained significant attention in diverse fields, including sports performance enhancement (Hammes et al., 2022). The application of AI in sports training has shown immense promise in improving athletes' physical capabilities and overall performance (Bu, 2023). Basketball, a fast-paced and physically demanding sport, provides an ideal platform to explore the impact of AI-prescribed training on players' performance (Zhang, 2022). This study aims to examine the effectiveness of AI-driven training routines in improving key performance metrics among basketball players. Traditional training methods

often lack personalization and adaptability, whereas AI-powered systems offer the ability to tailor training programs based on individual player characteristics, maximizing training outcomes (Li & Xu, 2021).

## METHODOLOGY

The study recruited twelve women basketball players aged between 18 to 21 years from Kumaraguru College of Liberal Arts and Science, Coimbatore. Participants were selected using a single-group random sampling method and assigned to the experimental group (n = 12), which received AI-prescribed training routines (Yang, 2020).

The experimental group underwent AI-guided training routines generated by an AI algorithm that factored in individual player characteristics, performance data, and training goals (Cheng et al., 2022). Pre-intervention assessments were conducted to establish baseline performance metrics for dribbling, passing, and shooting. Over the course of 8 weeks, participants followed the AI-prescribed training program (Pu, 2021). Post-intervention assessments were conducted to evaluate changes in performance metrics. The paired t-test was used as the statistical method to analyze the data and assess the effectiveness of the training intervention (Li & Li, 2022). Paired t-tests were used to compare pre- and post-intervention performance metrics within each group.

## RESULTS:

**Table II**

**Relationship of Mean, SD and 't'-Values of Dribbling, Passing and Shooting between Pre & Post Test of the AI prescribed training group.**

| | **Variables** | **Test** | **Mean** | **SD** | **'t' values** |
|---|---|---|---|---|---|
| **AI Prescribed Training group** | Dribbling | Pre test | 26.83 | 1.19 | 18.11* |
| | | Post test | 30.08 | 0.99 | |
| | Passing | Pre test | 23.08 | 0.28 | 13.54* |
| | | Post test | 28.03 | 1.24 | |
| | Shooting | Pre test | 23.16 | 1.85 | 29.21* |
| | | Post test | 12.91 | 1.37 | |

*****Significant at 0.05 level of confidence

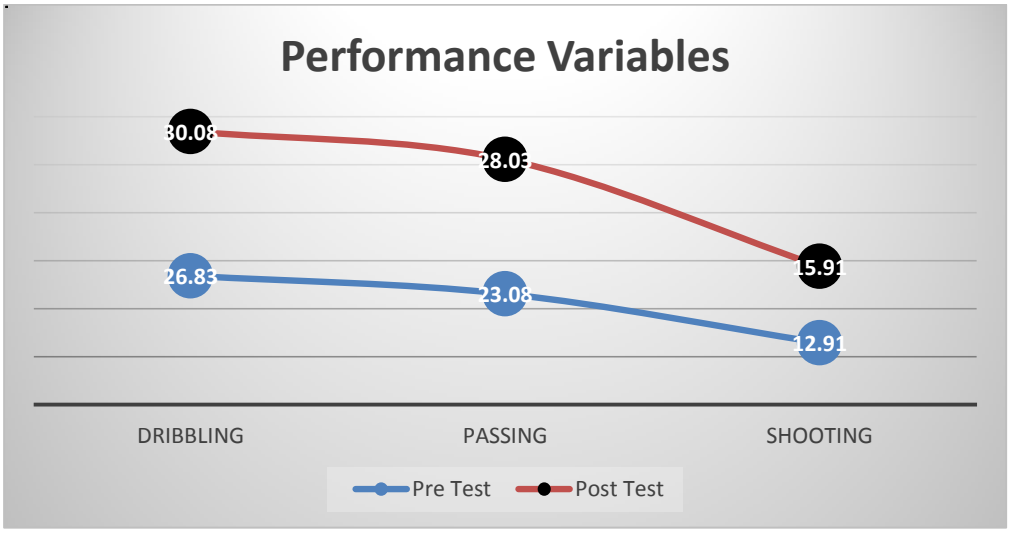
Table-II reveals that the obtained mean values of pre-test and post test scores of AI prescribed training group were 26.83 and 30.08, 23.08 and 28.03, 23.16 and 12.91 respectively, the obtained t ratio was 18.11, 13.54 and 29.21. The required table value is 2.20 at 0.05, level of confidence for the degree of freedom 11. The obtained t ratio was greater than the table value. It is found to be significant changes in dribbling, passing and shooting of the basketball players. The mean values on AI prescribed training group are graphically represented in figure I.

## DISCUSSION ON FINDINGS

The study's findings highlight the significant impact of AI-guided training on the performance of basketball players (Li & Xu, 2021). Notable improvements in dribbling, passing, and shooting skills, supported by statistical analyses, demonstrate the effectiveness of this innovative approach (Pu, 2021). By incorporating AI algorithms for personalized training modules and real-time feedback, coaching methods have undergone a transformation (Hammes et al., 2022). These findings underscore the importance of evidence-based training methods in sports development and showcase the potential of AI to deliver measurable improvements in player performance (Bu, 2023).

Figure I

The mean values on AI prescribed training group are graphically represented.



## CONCLUSION

This study highlights the significant role of AI-guided training in improving dribbling, passing and shooting skills among basketball players. The personalised and adaptive nature of AI-based training has shown to be more effective than traditional methods, demonstrating its potential to enhance athletic performance. These findings suggest that the integration of AI in sports training can transform player development and help athletes achieve their full potential. Further studies can explore its wider applications in the Indian sports context.

## REFERENCES

1. Li, B., & Xu, X. (2021). Application of artificial intelligence in basketball sport. Journal of Education, Health and Sport, 11(7), 54-67.
2. Pu, Q. (2021). The Effects of Artificial Intelligence on Competitive Sports.
3. Hammes, F., Hagg, A., Asteroth, A., & Link, D. (2022). Artificial intelligence in elite sports—A narrative review of success stories and challenges. Frontiers in Sports and Active Living, 4, 861466.
4. Cheng Y, Liang X, Xu Y, Kuang X. Artificial Intelligence Technology in Basketball Training Action Recognition. Front Neurorobot. 2022 Jun 27;16:819784. doi: 10.3389/fnbot.2022.819784. PMID: 35832349; PMCID: PMC9272734.
5. Yan, W., Jiang, X., & Liu, P. (2023). A Review of Basketball Shooting Analysis Based on Artificial Intelligence. IEEE Access.
6. Bu, X. (2023). Exploration of intelligent coaching systems: The application of Artificial intelligence in basketball training. Saudi Journal of Humanities and Social Sciences, 8(09), 290-295.
7. Zhang, R. (2022). Impact analysis of basketball exercise strength based on machine learning in the mental health of college students. Computational Intelligence and Neuroscience, 2022.
8. Yang, Z. (2020, October). Research on basketball players' training strategy based on artificial intelligence technology. In Journal of Physics: Conference Series (Vol. 1648, No. 4, p. 042057). IOP Publishing.
9. Li, Y., & Li, X. (2022). The Artificial Intelligence System for the Generation of Sports Education Guidance Model and Physical Fitness Evaluation Under Deep Learning. Frontiers in Public Health, 10, 917053.
10. Chen, H. K., Chen, F. H., & Lin, S. F. (2021). An AI-based exercise prescription recommendation system. Applied Sciences, 11(6), 2661.

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# NEED OF KEY PERFORMANCE INDICATORS FOR PHYSICAL EDUCATION TRAINEE TEACHERS

**Dr. Shiva Kumar**
**Physical Education Director**
**Kottureshwara College, Kotturu, Vijayanagara Karnataka**

**Dr Krishna**
**Physical Education Director**
**Nutan Vidyalaya Degree College Kalaburagi Karnataka**

**ABSTRACT:**
The purpose of the study is to discuss the role and need of key performance indicators (KPI's) for physical education trainee teachers. The key performance indicator will help to trainee teachers to assess their own learning outcomes before engaged to be a professional. Simultaneously it provides opportunity to assessment the learning outcomes to other beneficiary or stakeholders. KPI's also helps to industry expert for identify most eligible candidate for their organization to full-filled the demand. This study is lead focus on the importance of KPI's system for physical education trainee teachers. **Key words:** Trainee Teachers, Stakeholders, Key Performance Indicators.

## INTRODUCTION

Higher education system is a dynamic process around the globe. Since higher education system cross the borders and go beyond the boundaries it becomes prestigious issue for nation. A higher education system is growing under the shadow of independently support of strong political and financial supports; it leads to prestige for a nation.

KPI leads as the most important goals of any organization which guide the policy makers's activities more productive and result oriented. They are very important and they are considered of significance in quality improvement and objective attainment. Postulated that without a general conception of past events, no constant change or improvement will happen, there will be no constant change and improvement in the growing of the university's quality. Of course without performance evaluation based on key factors and indicators, because the

major mission or the main job of management is evaluating the performance is to apply and gain the main strategies of the organization, it is found that evaluating performance is a necessary need for universities. The admission of KPIS is a major step to performance evaluation. Moreover, for choosing the key indicators, one has to consider the organization and benefit maker's demands and needs. Physical education field is not separate from this total education process so far. KPI's also essential for this area also. Physical education is also a dynamic field and growing day by day. For the betterment of the field good professional needs to lead this from front. Student of undergraduate program and post graduate program had many things to learn during their course(Wu & Cheng, 2012). But when they trying to engage themselves in field as professional their skill challenged daily by different manner according to professional demand. Industry expert also require talented and eligible candidate for their organization. This process leads towards a good demand and supply chain system (ISO 2014, 2017).

## ESSENTIAL FEATURES OF USEFUL KEY PERFORMANCE INDICATORS

Measuring performances of the organization means qualitative and quantitative expression of some results by chosen indicators. Performance measurement enable to effective organizations to express their success by numbers. Selection of appropriate indicators that will be used for measurement and appraisal of the performances is a very important activity. Among all information that can be get it is necessary to choose some critical quantity that on the best way represent the whole business.

Beside control function indicators of performances also have two next functions:

- Developing and guiding function – because they present a base for formulating and implementation of the strategy of the organization.
- Motivation function – induce management to fulfill goals and motivate all stakeholders to realize those goals and on even higher level (Pesalj, 2006; Stamatović & Zakić, 2010 )(Velimirovi et al., 2011).

A useful key performance indicator (KPI) is one that informs the processes of strategic decision- making and taking – resulting in measurable improvements to desired outcomes following implementation. Similarly, the quality of a key performance indicators (KPI) is comprised of many components including (Rowe & Lievesley, 2002):

- Validity;
- Reliability;
- Relevance to policy;

- Potential for disaggregation (e.g., by gender, socioeconomic and ethnic groupings, education administrations, etc.);
- Timeliness (i.e., currency and punctuality);
- Coherence across different sources;
- Clarity and transparency with respect to known limitations;
- Accessibility and affordability (i.e., cost effectiveness);
- Comparability through adherence to internationally agreed standards;
- Consistency over time and location;
- Efficiency in the use of resources.

## PROCESS APPROACH

As it was previously said constitution of process organizations is a necessary base for constitution of measurement system via KPI. Such statement could also be finding in the literature: „Business processes are base for organization functioning because companies are constituted basically of processes, not products or services. On the other words, business management of some organizations means process management“ (Skrinjar et al., 2007; Stefanovic et al., 2010) (Velimirovi et al., 2011).

## ROLE AND IMPORTANCE OF KEY PERFORMANCE INDICATORS FOR TRAINEE TEACHERS OF PHYSICAL EDUCATION:

A good teaching and learning process leads to more eligible professionals for field. Regarding this total physical education process needs to assess frequently and upgraded. Educational policies in advanced nations emphasize performance accountability, educational quality of schools and student achievement, and improvements were made in assessment policies to effectively evaluate educational performance (Wu & Cheng, 2012). KPI's provide accountability to actions of planning since their existence. The example of performance indicator system or assessment model are available since four decades in various other fields. Similarly physical education field also require the same kind of assessment model to assess the learning outcomes of students.

KPI's also known as primary performance indicators, critical performance indicators and performance assessment indicators, are important of assessing outcomes of action (Wu & Cheng, 2012).

## THE RELATIONSHIP BETWEEN TRAINEE TEACHERS, INSTITUTE & STAKEHOLDERS

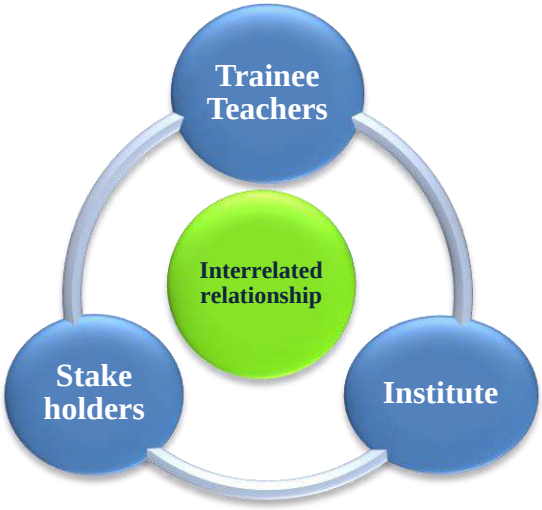


**Figure -1: Interrelated relationship between student, institution & stakeholders** (Sivaraman et al., 2013)

## RESEARCH METHODOLOGY

The research was design through identification of parameters which had been laid emphasis of existing studies (Rowe & Lievesley, 2002); (Sivaraman et al., 2013); (Tremblay et al., 2012); (Chan, 2015); (AFT & CIO, 2010); (Wu & Cheng, 2012); (Behzadirad & Stenfors, 2015); (Liu & Jiang, n.d.); (Kang et al., 2016)]. Four major parameters are selected after reviewing the literature i.e. academics, sports, industry experiences and social responsibility.

## KEY PERFORMANCE INDICATOR MODEL

The key performance indicators are identified from various existing studies, literature, generals, and as per demand of interested parties. The first essential thing to make key performance indicators is that they should full fill with the existing demand and Key performance indicators are identified in three ways in higher education physical education as per their importance.

## PROCESS OF DEVELOPING A KEY PERFORMANCE INDICATOR TOOL

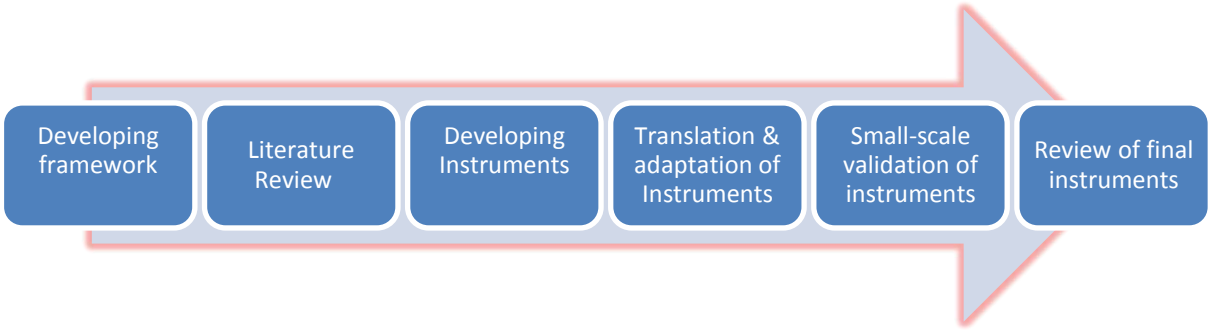


**Figure-2 : Process of developing key performance indicator model (Tremblay et al., 2012)**

The process of to formulate the key performance indicator is review the present situation. Collected information and predicted the futuristic demand of the respective fields. Key performance indicators are separated for all fields and need to be developed accordingly (Tremblay et al., 2012).

The admission of KPI's is a major step to performance evaluation. Moreover, for choosing the key indicators, one has to consider the organization and benefit maker's demands and needs. Then, the key indicators and goals are going to be settled and recognized. Finally, they must be used in a convenient model of performance evaluation (Badawy et al., 2018)

## CONCLUSION:

Key performance indicators areoverall a much demanding assessment system for any organization. It is providing opportunity to all stakeholders as per their desire and accepted world widely. In the field of physical education it is provide organize; accountable KPI's to assess the learning outcomes of trainee teachers, which leads to eligible candidates for profession.

## REFERENCES


- 2014, I. (2017). INTERNATIONAL STANDARD Automation systems and indicators ( KPIs ) for manufacturing (Vol. 2017).
- AFT, & CIO. (2010). A Continuous Improvement Model for Teacher Development and Evaluation (Vol. 01).
- Badawy, M., Abd El-Aziz, A., & Hefny, H. (2018). Exploring and Measuring the Key Performance Indicators in Higher Education Institutions. International Journal of Intelligent Computing and Information Sciences, 18(1), 37–47. https://doi.org/10.21608/ijicis.2018.15914
- Behzadirad, A., & Stenfors, F. (2015). Key Performance Indicators A study of key performance indicators.
- Da Costa Marques, M. C. (2003). Key performance indicators in Portuguese public universities. Jano, 84. http://www.aabri.com/manuscripts/09240.pdf
- DNV-GL AS. (2015). ISO 9001:2015 QUALITY MANAGEMENT SYSTEMS – REQUIREMENTS (Guidance Document). 15. https://www.dnvgl.be/publications/the-new-iso-9001-2015-63171
- Chan, V. (2015). The Efficacy of Key Performance Indicators in Ontario Universities as Perceived by Key Informants. Canadian Journal of Higher Education, 45(4), 440–456.

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# RELATIVE AGE IMPACT IN THE SPORT ENVIRONMENT OF ACTUAL WELLNESS AND MENTAL CAPABILITY OF FOOTBALL PLAYERS

**Dr. Manik Rathod**
**Associate Professor in Physical Education**
**MSM's College of Physical Education, Chhatrapati Sambhjinagar**
**Maharashtra**

**ABSTRACT:**

The need to achieve short-term competitive outcomes in sports may influence the emergence of talent selection strategies, which could bias individuals' opportunities. The present study aimed to further explore the relative age effect (RAE), a phenomenon that strongly influences youth sport development. The RAE refers to a disproportionately high percentage in sport teams of athletes born early in the selection year. Our primary focus was to explore whether the RAE is supported by behavioral evidence in favor of better fitness—and especially cognitive-attentional functioning—of early as compared to late-born players. A cross-sectional study was conducted on 105 young athletes (u10, n = 52; 9.8 ± 0.3 years old, and u12, n = 53; 11.8 ± 0.2 years old) attending two youth elite soccer academies. Attentional functioning, anthropometrics, physical fitness, and game intelligence were compared across two Age Groups (u10 vs. u12) and four Birth Quarters (BQ1–BQ4). The RAE was statistically significant ($p < 0.001$), showing that about 50% of participants were born in the first quarter and 75% were born in the first half of the year. **Keywords:** RAE; Youth Sport Talent Selection, Maturation, Attention

## INTRODUCTION:

After the abundant literature that followed the description of "nature vs. nurture" by Francis Galton, further research is needed to an gain understanding of the relative contribution to human performance of inherited and environmental conditions. In sport, as in other contexts, the performance of athletes is the result of a complex interaction between genetic and environmental factors. To excel in their sport disciplines, athletes experience a continuous adaptation process that impacts their physical and cognitive attributes. In fact, various studies have highlighted that the potential benefits of physical activity (PA) on cognitive functioning are modulated by the environmental characteristics of their sport context. Expert athletes have shown better performance than non-

experts in sport-specific tests that assess memory, attention, information pick-up, anticipation, and decision-making skills. The perceptual-cognitive adaptations that athletes may experience as a result of sport training might be constrained by their individual characteristics. In youth sport, one of the most influencing individual constraints is chronological age, while considering that athletes are mainly grouped by their date of birth in a selection year.

## MATERIALS AND METHODS:

### Study Design and Participants

A cross-sectional study was conducted. The sample included one hundred and five (105) young male soccer players aged 9.2–12.2 years (10.8 ± 1.0 years old) that were enrolled in two youth elite academies of ADRA Football Club in the Chhatrapati Sambhajinagar District of Maharashtra State. The best two u10 teams (n = 52; 9.8 ± 0.3 years old) and two u12 teams (n = 53; 11.8 ± 0.2 years old) in each club participated in the study. The cut-off date that was fixed by Chhatrapati Sambhajinagar District Football Association and the Maharashtra Football Association from January 1st to December 31st was followed. Nevertheless, the analyses of attentional performance were performed on data from 87 participants, after excluding participants who could not perform the task appropriately. A sensitivity analysis was conducted while using G* power. It showed that with our sample size (n = 87) divided into eight groups (i.e., four birth-date quarters in each Age Group), the minimum effect size that could be detected for $\alpha = 0.05$ and $1 - \beta = 0.80$ was $f = 0.30$ (i.e., minimum detectable effect).
Participation in the study was voluntary and all of the participants and their parents or legal guardians were properly informed regarding the risks and benefits of the study prior to any data collection and signed an institutionally approved informed consent document. All of the participants were informed about their right to leave the experiment at any time. The managers of the clubs were debriefed in regards to the purposes of the study and given an explanation of the main results with easily understandable data.

### The Attentional Networks Test for Interactions 2.2. Apparatus, Materials and Procedure

The participants were evaluated in three different sessions (Attentional Assessment Session, Anthropometrical Assessment, and Physical Fitness Assessment Session) in a counterbalanced order. Testing was performed in the first training session of the microcycle, scheduled at least 48 h later than the previous training session or competition match. All the data were collected under standard conditions of time (from 4 pm to 7 pm) and temperature (ranging from 13 °C to 23 °C) from February to May 2018. The participants were cited 60 min.

before the training session and were assessed in the media room (Attentional Assessment Session), medical room (Anthropometrical Assessment) and soccer pitches (Physical Fitness Assessment Session) of their club's training facilities.

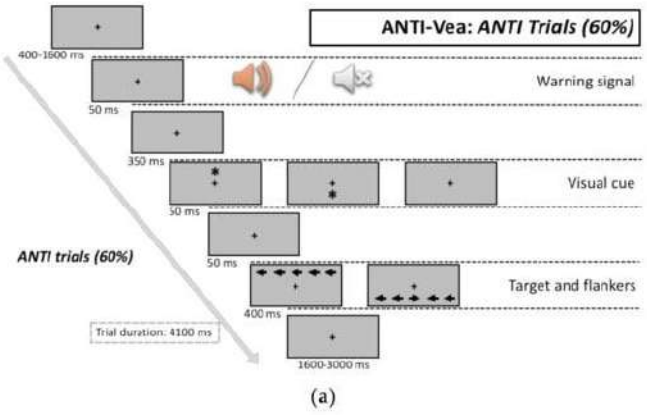


**Figure 1.**

**Experimental procedure and stimuli sequence in the Attentional Networks Test for Interactions and Vigilance—executive and arousal components (ANTI-vea) task: ANTI trials (a), executive vigilance (EV) trials (b), and arousal vigilance (AV) trials (c)**

In the EV trials (20% of the trials), the same procedure was followed, except that the target was vertically displaced from the central position. The participants had to detect the vertical displacement by pressing the spacebar, while ignoring the direction of the target (See Figure 1b). Data from the various conditions of the warning signal, visual cue, and congruency variables were collapsed and not taken into account in the analyses. HITs were calculated as the percentage of displaced targets that were identified correctly. False alarms (FAs) were defined as the proportion of space bar responses (i.e., the response for infrequent stimuli) given to non-displaced targets. Finally, the mean RT and SD of RT were calculated.

In AV trials (20% of the trials), no tone, visual cues, or arrows were presented. These trials started in the same way as the ANTI and EV trials, and then the fixation point remained fixed in the screen for 500 ms (i.e., the same duration as the tone plus the visual cue signals in the ANTI and EV trials). Next, a red millisecond counter appeared in the center of the screen, starting at 1000 and going down to zero. The participants were asked to stop the counter as fast as they could by pressing any key of the keyboard (see Figure 1c). The mean and SD of RT were considered. Before the experimental task, participants completed several practice blocks with visual

feedback. First, they were given instructions to perform the ANTI trials, with a practice block of 16 such trials. Next, they received instructions to complete the EV trials, with a practice block of 32 randomized trials (16 ANTI and 16 EV trials). After that, they received instructions to complete the AV trials, followed by a practice block of 48 randomized trials (16 ANTI, 16 EV, and 16 AV trials). Finally, the participants performed a last practice block of 40 randomized trials (24 ANTI, 8 EV, and 8 AV trials) without visual feedback. At this point, if the participants still had any doubts, they could ask questions or perform the last practice block again. Otherwise, they continued with the experimental section of the task, which included three blocks of 80 randomized trials each (48 ANTI, 16 EV, and 16 AV trials per block), with no pause and no visual feedback.

2.2.3. Physical Fitness Assessment

All of the physical fitness tests were performed between 5 and 8 pm during the first training session of the week (at least 48 h later than the previous training session or competition match). Ambient temperature was 17.3 ± 3.2 °C and humidity was 75 ± 4%. Prior to the testing, the participants followed the same supervised warm-up procedure with 10 min. of jogging, change of direction, and sprint drills. Finally, the participants performed a modified version of the agility T-test, a 24-m speed test, and the Leger Multi-stage fitness test. Agility: Modified T-test. The T-test is a useful agility test for the assessment of multidirectional movement (i.e., forward, lateral, and backward) and leg power, leg speed, and agility. A marked course on the soccer field using four cones was set up, as depicted in Figure 2. A photocell gate system (Sports Metrics, Chhatrapati Sambhajinagar, Maharashtra) that was connected to an electronic chronograph with 1 ms accuracy (i.e., 1000 Hz sampling frequency) (Sports Metrics, Chhatrapati Sambhajinagar, Maharashtra) was used to record the time. The infrared beam of each photocell was placed 0.9 to 1.0 m from the ground, depending on the player's height, so that the photocell beam cut at the hip level.

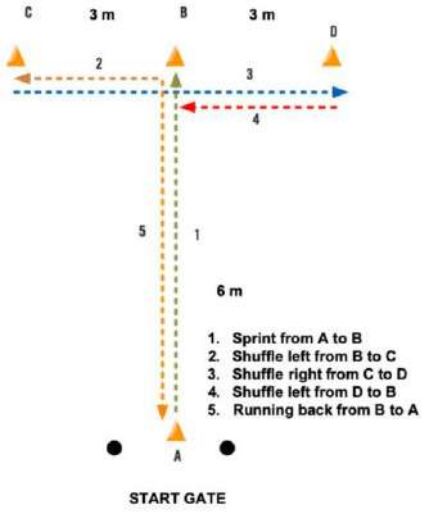

**Figure 2.**

**Set Up of the Modified T-Test for Agility Measurement**

Following previous recommendations, the athletes completed a modified agility T-test. At the starting position, the player placed his foot just behind the start line, with the knee of the advanced limb in semi-flexion and the arms flexed to avoid cutting the infrared beam. The forward body movement cutting the infrared beam started the stopwatch. After explaining the purpose of the T-test, the experimenter described and demonstrated the proper route and technique. Athletes had to keep their body facing forward at all times and physically touch each cone with the correct hand. On the experimenter's command, the participants sprinted forward from the start at cone A to cone B and touched the top of the cone with their right hand. Subsequently, they shuffled left to cone C and touched it with their left hand. After that, they shuffled right to cone D and touched it with their right hand. They shuffled back to cone B and touched it with their right hand before running backward to pass the start gate (cone A). All of the participants underwent three practice trials before performing the test. The goal of the test was to complete the course as quickly as possible. Two maximal trials were completed with three minutes of recovery between them. The time of both trials was recorded, but only the fastest time was considered for later statistical analyses.

**CONCLUSIONS:**

Although the age group differences (u10–u12) that were observed in all of the anthropometric, physical fitness and sustained attention variables were restricted to sample size and characteristics (i.e., elite club academies) of our study, they were not modulated by BQ. Similarly, the correlation between chronological age and anthropometrics, physical fitness, and sustained attention variables that were observed in the overall sample completely disappeared within each age group. Similarly, no BQ effects were found on the functioning of the attentional networks. Bayesian analyses supported the absence of BQ effects, corroborating that relative age was an inconsistent predictor of performance in the physical and perceptual-cognitive variables that were evaluated in the present study. Another crucial variable that may modulate the pattern of interrelations between the main variables of the present study is maturation. The present findings suggest that the selection process of soccer players may mitigate the age-related (i.e., BQ) differences that could be expected in some variables if the scouting process that lead to the birth asymmetries were not driven by short-term performance. The individual maturational state of players is likely to be one of the main variables that modulate this effect.

**REFERENCES:**


- Brutsaert, T.D.; Parra, E.J. Nature versus nurture in determining athletic ability. Med. Sport Sci. 2009, 54, 11–27. [Google Scholar] [PubMed]
- Grant, S.G.N. Michael Rutter: Genes and behavior: Nature-nurture interplay explained. Genes Brain Behav. 2006, 5, 303. [Google Scholar] [CrossRef]
- Mann, D.T.Y.; Williams, A.M.; Ward, P.; Janelle, C.M. Perceptual-cognitive expertise in sport: A meta-analysis. J. Sport Exerc. Psychol. 2007, 29, 457–478. [Google Scholar] [CrossRef] [PubMed]
- Layton, T.J.; Barnett, M.L.; Hicks, T.R.; Jena, A.B. Attention Deficit–Hyperactivity Disorder and month of school enrollment. N. Engl. J. Med. 2018, 379, 2122–2130. [Google Scholar] [CrossRef]
- Wattie, N.; Schorer, J.; Baker, J. The relative age effect in sport: A developmental systems model. Sports Med. 2015, 45, 83–94. [Google Scholar] [CrossRef] [PubMed]
- Edgar, S.; O'Donoghue, P. Season of birth distribution of elite tennis players. J. Sports Sci. 2005, 23, 1013–1020. [Google Scholar] [CrossRef]
- Leite, N.; Santos, S.; Gonçalves, B.; Silva, A.; Sampaio, J. Examining the birthdates distribution of Beijing olympic games. J. Sport Psychol. 2018, 27, 31–42. [Google Scholar]
- Arrieta, H.; Torres-Unda, J.; Gil, S.M.; Irazusta, J. Relative age effect and performance in the U16, U18 and U20 European Basketball Championships. J. Sports Sci. 2016, 34, 1530–1534. [Google Scholar] [CrossRef]
- Doyle, J.R.; Bottomley, P.A. Relative age effect in elite soccer: More early-born players, but no better valued, and no paragon clubs or countries. PLoS ONE 2018, 13, e0192209.

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# "SUPERBRAIN YOGA FOR LEVERAGING STRENGTH, BALANCE, FLEXIBILITY AND WELL-BEING IN SPORTS"

**Ande Jeevan Rao**

**District Vocational Education Officer, (F.A.C.) (Rtd.)**

**O/o Dist. Intermediate Education Officer, Nizamabad-503001, Telangana state, India.**

**Mail.Id: g12rao@gmail.com**

**ABSTRACT:**

Superbrain Yoga (SBY), is aimed to increase the intelligence of the people based on the principle of ear acupuncture and the science of energy movement through various chakras. SBY is a trending yoga which has attained international status. SBY is a fitness yoga and practised as brain stimulating scientific exercise.

The technique of SBY was first formulated by the Grand Master Choa Kok Sui, the founder of Modern Pranic Healing. According to Sui, SBY increases brain power by harnessing the body`s primordial energies. SBY combines physical movement, breathing and acupressure to purportedly enhance brain function and energy levels. It enhances the qualitative and quantitative pranic energy in the brain. SBY improves memory, creativity, confidence, alertness, selective attention, psychological balance, cognitive performance and brain functions which are essential for athletes.

SBY exercise as part of warm-up routines prepares the brain and body for physical activity. SBY helps to relax the nervous system, reducing muscle tension and increasing flexibility. SBY enhances neural processing speed, allowing athletes to react faster and more effectively to changing situations. SBY helps athletes to manage stress, anxiety, and emotions, leading to improved overall well-being. It improves strategic thinking and quick decision-making capacity for peak performance. **Key Words**: Well-being, athletes, yoga, concentration, cognitive function, artificial intelligence.

## INTRODUCTION:

Superbrain Yoga is a distilled version of Dhorbikaranam or Uthak Baithak (sit-ups). The technique of Superbrain Yoga was first formulated by the Grand Master Choa Kok Sui, Filipino esotericist, the founder of Modern Pranic Healing and Arhatic Yoga. According to Sui, SBY increases mental energy, concentration and decision-making skills.

Superbrain Yoga- A Research Study by Dr. Ramesh, MDS revealed that all the benefits of Superbrain Yoga are temporary in nature if it is not practiced regularly. It must be practised almost every day to energize and activate the brain cells. The research of Dr. Joie P. Jones, Department of Radiology, University of California revealed that, after performing SBY, an EEG scan exhibited the right and left hemispheres of the brain were synchronized. According to Dr. Paul Nogier, French Neurologist, the pineal and pituitary glands are energized and activated after performing SBY. Recent studies shows that regular practice of Superbrain Yoga increases alpha wave activity of the brain. When the alpha wave activity is improved, the left and right hemispheres of the brain become synchronized and enter into a deeper relaxation state. It induces creativity, alertness, strengthens immune system, relieve anxiety and reduce stress related disorders. SBY can be justified with Kundalini Yoga, an Indian practice of Yoga. During Kundalini yoga, when the air is blocked inside the body with inhalation and exhalation, it moves towards the brain with upward pressure. Once Kundalini reaches the Pineal gland, the gland secrets Melatonin hormone which is also called as Amrita.

Superbrain Yoga improves neural processing speed, allowing athletes to react faster and more effectively to changing situations. By balancing the brain hemispheres, SBY can improve coordination and motor skills, which are vital for many sports. It improves spatial awareness, helping athletes better understand their surroundings and make more effective decisions. It enhances cognitive function, allowing athletes to make more informed decisions during competition. By improving physical, mental, and emotional abilities, SBY can help athletes achieve greater overall performance and success.

**PURPOSE OF THE STUDY:**

Superbrain Yoga stimulates the brain's cognitive functions, leading to improved intellectual abilities and overall well-being in athletes. Superbrain Yoga enables the Athletes:

- To improve focus, problem solving and learning.
- To make correct decisions when they lack clarity of thought.
- To excel in sports with peak performance.
- to improve intellectual abilities and overall well-being.

## Methodology:

Review of literature pertaining to Superbrain Yoga is done and analysed. I have been working on Superbrain Yoga for the last 6 years with research and organizing workshops/presentations simultaneously. I have organized workshops on Super Brain Yoga in educational Institutions in different districts of Telangana State (Hyderabad, Nirmal, Sanga Reddy, Medak, Gadwal, Nagar Kurnool, Wanaparthi), in different states (A, P., U.P., Assam, Meghalaya, Tripura, Delhi, Uttarakhand-Haridwar, Rishikesh, Dehradun, Mussoorie etc.) of India. One of which worth mentioning is Telangana Tribal Welfare Residential Junior College for Girls, Thirmanpally (v), Indalwai Mandal, Nizamabad district.

I have organized workshop on Superbrain Yoga on 19-11-2024 at TTWRJC for Girls, Thirmanpally. Since then, the athletes are performing 14 rounds of SBY regularly following the procedure as specified by Sui, as part of warmup under the supervision of Sruthi, Physical Director.

Workshop on SBY at TTWRJC for Girls, Tirmanpally, Nizamabad Dist. Demonstration Of SBY by PD, Botany Lecturer and athlete.

Peak performance of Kabaddi player of TTWRJC for Girls, Tirmanpally, Nizamabad Dist. in district level CM's Cup-2025 competitions.

## RESULTS:

After regular practice of SBY for one month, the Kabaddi players of TTWRJC for Girls, Thirmanpally participated in CM's Cup-2025 tournaments and stood in FIRST place at Indalwai Mandal level. All the twelve Kabaddi team members from TTWRJC, Thirmanpally participated in Nizamabad district level CM's Cup-2025 competitions and bagged FIRST place and four players of TTWRJC, Thirmanpally were selected for participation in state level CM's Cup-2025 tournaments.

**DISCUSSION**:

The players of TTWRJC for Girls, Thirmanpally claimed that the regular practice of SBY helped for their success. Sruthi, Physical Director of TTWRJC for Girls, Thirmanpally said that there was increase in mental energy, concentration and decision-making skills among the players who regularly practiced SBY. She also added that prolonged practice of SBY will make the players smarter and more psychologically balanced.

The integration of Superbrain Yoga into sports training programs has the potential to revolutionize the way athletes prepare for competition. Superbrain Yoga offers a unique and powerful advantage that can help athletes stand out from the crowd and achieve their goals.

To use artificial intelligence (AI) for identifying and optimizing the gestures and breathing involved in SBY, we can leverage several technologies, including computer vision, deep learning, and wearable sensors. By leveraging AI in this way, practitioners of SBY can receive guided assistance and improve their technique, potentially enhancing the benefits of their practice. Professional athletes can use AI-Powered Superbrain Yoga for peak performance.

**CONCLUSION:**

Superbrain Yoga is a powerful tool that can help athletes leverage their strength, balance, flexibility, and overall well-being to achieve greater success in sports. By harnessing the power of the brain and nervous system, athletes can tap into their full potential and perform at their best. Superbrain Yoga is a game-changer for anyone looking to take their athletic performance to the next level.

Srikanth N Jois and Lancy D` Souza of Mysore University suggested for the implementation of Superbrain Yoga in schools to improve academic performance of the students. Hence it is suggested that, a topic on SBY is to be included in the curriculum of school education and physical education as co-curricular activity. Necessary steps should be taken for the implementation of SBY in educational institutions as mandatory during morning assembly. The Physical Education Teachers are to be trained with the procedure, who will in turn monitor the fitness exercise (SBY) in the morning assembly.

**ACKNOWLEDGEMENTS:**

I sincerely thank the Principal, Telangana Tribal welfare Residential Jr. College for Girls, Thirmanpally, Nizamabad district for permitting to conduct workshop on SBY, to perform SBY regularly by the players in the campus and the Physical Director for regularly monitoring SBY.

**REFERENCES:**

1. Jeevan Rao Ande, Paper on title: "Improved Memory through Superbrain Yoga (sit-ups)" presented in the State Level Science Seminar-2022 organized by SCERT, Telangana, Hyderabad on 28-02-2022 and was published in the SCERT compendium pp. 145-150.

2. Jeevan Rao Ande, Paper on title: "Superbrain Yoga-Leveraging Artificial Intelligence for Superior Intellect & Well-being" presented in the Bodoland International Knowledge Festival-2023, organized by Bodoland University, Assam, India, & abstract was published pp.102-103.

3. Ramesh D. Superbrain Yoga- A research study: In Prana World, 2007, 18.

4. Srikanth & Lancy, The effectiveness of Superbrain Yoga on Concentration, memory & confidence in school students, Indian Journal of Traditional Knowledge, vol. 17(4) Oct 2018, pp. 741-744.

5. Sui Choa Kok, Superbrain Yoga, Institute for Inner Studies Publication Foundation (India Pvt. Ltd., Bengaluru, India), 2013.

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# EFFECT OF YOGA PRACTICES ON SELECTED NEUROPSYCHOLOGICAL VARIABLES OF VOLLEYBALL PLAYERS

**Dr. Namdev Vishnu Phatangare**
**Director of Physical Education & Sports**
**Vishwakarma Institute of Technology, Pune (Maharashtra)**
**Email Id - Namdev.Phatangare@Vit.Edu**

**ABSTRACT:**

The main objectives of the study are to measure the level of some selected neuropsychological variable. To prepare yoga considering its impact towards improvement of the selected variables. To evaluate the effect of Yoga intervention. Researcher hypothesized that $H_1$ – In case of Short Term Memory, there would be positively significant effect of yoga interventions on male Volleyball players. $H_2$ – There would be positively significant effect of yoga interventions on Reaction Time among the male Volleyball players. $H_3$ – Yoga training intervention may contribute to improve Balancing ability of the male Volleyball player. The delimitation of the study was 60 male Volleyball players from Pune city and there age ranged between 12 to 16 years. For the study, selected variables are short-term memory, reaction time and balance. Pre-test was applied on the experimental and control group. A yoga training-intervention was imparted for a period of six weeks on experimental group and then again, post test was applied on both groups. T-test was employed to see the effect of yoga. The result of the study is insignificance difference observed in short term memory, reaction time and balance. **Keywords:** Yoga, Short Term Memory, Reaction Time, Balance.

## INTRODUCTION:

Yoga, being an ancient traditional science, has multiple benefits in human. Earlier literature revealed that yoga training helps to improve various factors of health and fitness. Although such improvement in health and fitness depends upon one's neuropsychological bondage, the impact of yoga on such neuropsychological complex is not recorded amply. It is, therefore, thought desirable to undertake this research entitled, **"Effect of yoga practices on selected neuropsychological variables of Volleyball players**".

## OBJECTIVES

To measure the level of selected neuropsychological variable of male school level Volleyball players. To prepare Yoga training programme considering its impact towards improvement of the selected neuropsychological ability of the subjects. To evaluate the effect of Yoga intervention on the selected neuropsychological attributes viz., short term memory, reaction time and balancing ability of the male Volleyball players.

## SIGNIFICANCE

Study highlighted the current status of short term memory, reaction time and balance of male Volleyball players. This also may help to design the yoga training schedule. The results of the study might be helpful to players to know their status of short term memory, reaction time and balancing abilities. The result may suggest that Yoga training be included in the training schedule of Volleyball players.

## HYPOTHESIS

$H_1$ – Researcher hypothesized that, there would be positively significant effect of yoga interventions on Short Term Memory of male Volleyball players.

$H_2$ – Researcher hypothesized that There would be positively significant effect of yoga interventions on Reaction Time among the male Volleyball players.

$H_3$ – Researcher hypothesized that Yoga training intervention would contribute to improve Balancing ability of **the** male Volleyball player

## DELIMITATION

The present research 60 male Volleyball players from Pune city were selected and there age ranged between 12 to 16 years. The variables for the study are short-term memory, reaction time and balance.

## METHODOLOGY

School level 60 Volleyball male players were selected as subjects by using simple random method. Based on pre-test, researcher formed two homogeneous groups' namely experimental group and Control group. Yoga training was given to the experimental group only and no training was given to control group. Again, data was collected after six weeks training on both the groups' i.e. post-test data on short term memory, reaction time and

balance. Short term memory was measured by using 24 CVC (Consonant Vowel Consonant) test and recorded in numbers. Reaction time was measured by adopting Ruler Drop Test and recorded in seconds and Balance was measured by adopting Y Balance test kit Test and recorded in centimeters.

## ANALYSIS OF DATA

The data were analyzed by applying't'-test in order to determine the significant difference among the tests score of both the groups for each variable. Level of significance was set at 0.05 levels. Findings of the statistical analysis have been shown in the following table.

**Table 1**

**Summary of Mean, Standard Deviation and t-ratio for the Pre-test and Post-test Data of Experimental Group of Volleyball Players**

| Variable | Test | Mean | Standard Deviation | t-value |
|---|---|---|---|---|
| Short Term Memory | Pre | 64.66 | 1.33 | 0.74@ |
| | Post | 64.90 | 1.49 | |
| Reaction Time | Pre | 21.23 | 0.93 | 1.59@ |
| | Post | 20.70 | 1.33 | |
| Balance (Right Side) | Pre | 66.96 | 0.43 | 0.72@ |
| | Post | 67.04 | 0.50 | |
| Balance (Left Side) | Pre | 67.34 | 0.35 | 1.07@ |
| | Post | 67.63 | 1.46 | |

@ Not Significant at 0.05 level  Tab $t_{0.05\,(29)} = 2.045$

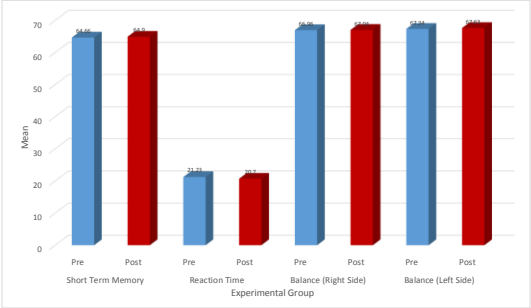

**Figure 1: Showing Means of Pre-test and Post-test Data of Experimental Group of Volleyball Players**

**Table 2**

**Summary of Mean, Standard Deviation and t-ratio for the Post-test Data of Control and Experimental Groups of Volleyball Players.**

| Variable | Group | Mean | Standard Deviation | t-value |
|---|---|---|---|---|
| Short Term Memory | Experimental | 64.90 | 1.49 | 1.97@ |
| | Control | 52.90 | 1.33 | |
| Reaction Time | Experimental | 20.70 | 1.33 | 1.78@ |
| | Control | 24.70 | 1.17 | |
| Balance (Right Side) | Experimental | 67.04 | 0.50 | 1.72@ |
| | Control | 61.09 | 0.40 | |
| Balance (Left Side) | Experimental | 67.03 | 1.46 | 1.98@ |
| | Control | 62.00 | 1.33 | |

@ Not Significant at 0.05 level Tab $t_{0.05\,(58)} = 2.001$

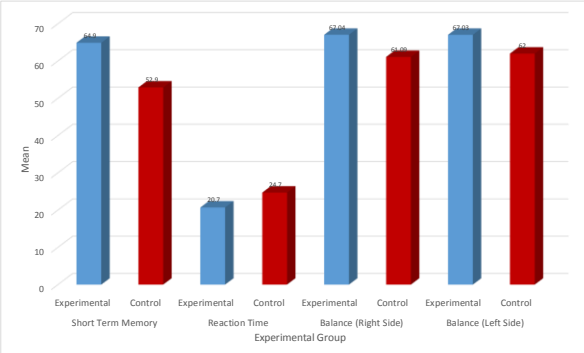


**Figure 2: Summary of Means of Post-test Data of Control and Experimental Groups of Volleyball Players.**

## DISCUSSION OF THE FINDINGS

- From table-1 it reveal that, the six week yoga training showed insignificant difference in short term memory (t = 0.74), reaction time (t = 1.59), balance right side (t = 0.72) and balance left side (t = 1.07) in experimental group because the obtained t-values are less than the tabulated t-value 2.045 at 0.05 level and 29 degree of freedom.
- From table-2 it reveal that, the six week yoga training showed insignificant difference in short term memory (t = 1.97), reaction time (t = 1.78), balance right side (t = 1.72) and balance left side (t = 1.98) in experimental group because the obtained t-values are less than the tabulated t-value 2.001 at 0.05 level and 58
  degree of freedom.

## JUSTIFICATION OF HYPOTHESIS

From the statistical analysis there is no significance difference found in selected variables. Researcher hypothesized earlier was not accepted.

## CONCLUSION-

- Insignificant effect of yoga interventions on Short Term Memory of male Volleyball players in experimental group.
- Insignificant effect of yoga interventions on Reaction Time of male Volleyball players in experimental group.
- Insignificant effect of yoga interventions on Balance (right and left) of male Volleyball players in experimental group.
- Insignificant difference found in posttest of control and experimental groups in Short Term Memory of male Volleyball players.
- Insignificant difference found in post test of control and experimental groups in Reaction Time of male Volleyball players
- Insignificant difference found in post test of control and experimental groups in Balance (right and left) of male Volleyball players

## REFERENCES:


- Brandon M Eggleston, and Roch J Lockyer.(2016). Impact of 10-weeks of yoga practice on flexibility and balance of college athletes. International journal of yoga, 9(1), 27-34.
- Erick Tadeu Prado, Vagner Raso, Renata Coelho Scharlach, and Cristiane Akemi Kasse.(2014). Hatha yoga on body balance.Int J Yoga, 7(2), 133–137.
- Madanmohan, Thombre DP, Balakumar B, Nambinarayanan TK, Thakur S, Krishnamurthy N, Chandrabose A. (1992). Effect of yoga training on reaction time, respiratory endurance and muscle strength. Indian J Physiol Pharmacol, 36(4), 229-33.
- McDougall, G.J., Vance D.E., Wayde E., Ford K. and Ross J. (2015). Memory training plus yoga for older adults. *J Neurosci Nurs*, 47(3),178-88.
- Manjunath, N.K.,and S. Telles. (2004). Spatial and verbal memory test scores following yoga and fine arts camps for school children. *Indian J Physiology Pharmacology*, 48(3), 353-6.
- Naveen, K.V., Nagarathna R., Nagendra H.R. and Telles S. (1997). Yoga breathing through a particular nostril increases spatial memory scores without lateralized effects. *Psychol Rep*, 81(2), 555-61.
- Astana, B.B. (2010). Manual for human memory and experimental procedure on long term and short term memory, Agra: National Psychological Corporation.
- Saadati, H., Babri, S., Ahmadiasl, N., Mashhadi, M. (2010). Effects of exercise on memory consolidation and retrieval of passive avoidance learning in young male rats. Asian J Sports Med, 1(3):137-42.

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# AN EXPERIMENTAL STUDY ON REDUCTION OF INJURIES AMONG SELECTED GAMES' PLAYERS THROUGH TRAINING IN FALL BREAKING TECHNIQUES

**T. Hanumanthu**

**Assistant Professor,**

**Anurag University, Hyderabad**

## ABSTRACT

Injuries are common amongst the athletic population. After an injury, there are various factors to consider prior to an athlete returning to sport. These injuries have a significant negative impact, not only on individual players, but also on team success and long-term health. When a player is sidelined due to injury, his performance is obviously compromised, potentially creating gaps in the team's strategy and overall success. Furthermore, recurrent injuries can lead to long-term health problems for players, potentially forcing them into early retirement or reducing their quality of life even after their playing days are over. **Keywords:** injury prevention programs; warm-up; multicomponent; strength.

## INTRODUCTION

Injuries in Sports and games have been prevailing since ages. Injuries may occur due to various reasons where most of them occur due to falling off in the action of running in the game. Hence it is felt that fall breaking techniques are crucial for any human being to stay unaffected by any unexpected falls or incidents. Players are severely and seriously injured in games like Football, Hockey, Kho-Kho etc. where they are in running motion for most of the time in game.

Our objective was to find studies with an exercise-based training program, thus projects that used mechanical interventions were excluded. A structured, generalized warm-up has been shown to be effective at preventing common injuries in football, reducing injuries by about one-third. The huge participation numbers in the worldwide family of football would suggest that any reduction in injury should have a public health impact.

A **breakfall** is a movement preformed to prevent one from injuring themselves when landing. The most commonly used breakfall in parkour is the roll. A roll is very useful in that it dissipates energy but allows the traceur to quickly get back up on their feet; however, rolls require forward momentum, making them useless

when falling straight down. If a roll cannot be used, the best way to land is to make use of the martial arts "slap" (commonly seen in Judo, Aikido and Hairdo) to absorb the impact. Breakfalls (both rolling and otherwise) were designed by martial artists in China and Japan so that they could practice their techniques without hurting each other. The Japanese term for the practice of falling is called *Ukemi*.

**Types of Break Fall:**

**Rolls:** Rolls dissipate force by switching the traceur's momentum into rotational energy. This provides the advantage of quickly getting the traceur back on their feet but can only be performed with significant forward momentum (in some cases, this momentum can be created upon landing by diving into a roll, even from a vertical drop).

- **Forward roll** Rolls over the shoulder, across the back, and to the opposite hip.
- **Side roll** Rolls over one arm, across the shoulders, and over the other arm.
- **Backwards roll** Exactly the same as the forwards roll but in reverse, rolling from one hip, across the back, and to the opposite shoulder.
- **Dive roll** Similar to a forwards roll except the feet are in the air when the shoulder makes contact.

**Slapping Breakfall:** These type of breakfalls are rarely used or even known about by most traceurs, but can literally save lives. Most commonly seen in Judo, Aikido, Hapkido, and other martial arts that utilize grappling, this form of break falling can be used to redirect the energy of a straight drop. They are most commonly utilized in the event of uncontrolled falling. These type of breakfalls absorb the impact by "slapping" the ground and spreading the impact over as wide of an area as possible.

- **Front breakfall** The forearms are placed in front of the head with the palms facing away from the head in a triangle shape, with hands close together and elbows wider apart. The feet should preferably be spread apart. The head is turned to the side as to avoid striking the face. Contact with the ground is only made with the hands, forearms, and feet. For some low-impact applications, landing in a pushup position can also be used, but this is hard on the wrists and takes significant arm strength.
- **Side breakfall** The chin is tucked in and the entire side of the body including the leg contacts the ground. The arm on the striking side of the body is held out at a downwards angle and used to absorb the impact.

- **Back breakfall** This breakfall is performed with the chin tucked in tight and falling onto the upper back, with both arms striking the ground off to the side to absorb the impact.

**STATEMENT OF THE PROBLEM:**

The purpose of the study is to give the fall breaking technique training to the children in the age group of 10 to 15 years playing Hockey, Football and Kho Kho and hence examine the reduction of injuries during their game with the help of this training.

**OBJECTIVES OF THE STUDY:**

1. To give the training of fall breaking techniques to the children in the age group of 10 to 15 years playing Hockey, Football and Kho Kho.
2. To compare the chances of injuries among the trained players and untrained players with respect to fall breaking techniques.
3. To study the effect and use of fall breaking technique training among players in prevention of injuries occurring during the play.

**HYPOTHESIS:**

The following hypotheses were drawn for the present study

1) The players who are trained in fall breaking techniques will be less prone to injuries when compared to other players.
2) The performance of trained players will be enhanced when compared to the control group.
3) The continuity of trained players with respect to professional gaming will be more successful when compared to others due to less injuries.

**SIGNIFICANCE OF THE STUDY:**

This study may help to understand the following:

1) This will help in understanding the importance of fall breaking techniques in prevention of injuries in sports and games.
2) This can be valuable information for sports coaching and training process.
3) This will be very much useful in the field of sports training and Biomechanics.
4) The variation in injuries and their severity among trained and untrained players can be understood.

**Delimitations:** The following are the delimitations set for the present study

1) The subjects selected for this study are all boys in the age group of 10 -15 years.

2) The players of 3 team games i.e. Football, Kho-Kho and Hockey were studied.

3) All the four types of fall breaking techniques were taught.

**Limitations:**

1) The training age of the subjects is not taken into consideration.

2) The food habits, health and hygienic conditions of the subjects are not taken into consideration.

3) The changes in climatic condition during the testing period cannot be controlled and the influence on the results of the study is recognized as a limitation.

## METHODOLOGY:

### Sample of the Study:

30 players from each game namely Football, Hockey and Kho Kho will be selected in the age group of 10 to 15 years from the district of Mahbubnagar as the experimental group. Another 30 players will be taken as the control group.

### Method to be employed:

The experimental group players will be trained under the supervision of the researcher in all the fall breaking techniques for duration of 6 months along with their routine game training. The control group on the other side will be undergoing only their respective game training. After six months of training, there on the players of experimental and control group will be allowed to participate in all major tournaments within the district and the state.

### Analysis:

During the period of tournaments, the players of experimental group and control group are closely watched and the number of times the players fall during the game and the number of times they get injured along with the severity of injury will be noted down. This process of examination will be carried out for a period of two years during all the tournaments played. As a result of examination for two years of tournaments, statistical methods will be utilized to study the effect of fall breaking technique training for players in reduction of injuries in Hockey, Football and Kho Kho.

**In this study, Independent sample 'T' test was applied as statistical technique. The alpha level was set as 0.05.**

## CONCLUSION:

This result might be because of regular training of university players to participate in the inter university tournament that's why their performance in reaction time, sustained attention and determination ability have been developed. Most of these studies included multiple preventive training proposals and showed that they were generally effective in reducing this injury risk, whereas the role of the proprioceptive training remains controversial.

## REFERENCES:

11. Moore, R.; Bullough, S.; Goldsmith, S.; Edmondson, L. A Systematic Review of Futsal Literature. *Am. J. Sports Sci. Med.* **2014**, *2*, 108–116. Spyrou, K.; Freitas, T.T.; Marín-Cascales, E.; Alcaraz, P.E. Physical and Physiological Match-Play Demands and Player Characteristics in Futsal: A Systematic Review. *Front. Psychol.* **2020**, *11*, 569897.
12. Weber, L.; Westaway, M. Comparison between Indoor and Outdoor Soccer: Related Injuries. *Pulse* **1994**, *8*, 3–5. Lindenfeld, T.N.; Schmitt, D.J.; Hendy, M.P.; Mangine, R.E.; Noyes, F.R. Incidence of Injury in Indoor Soccer. *Am. J. Sports Med.* **1994**, *22*, 364–371.
13. Junge, A.; Dvorak, J.; Graf-Baumann, T.; Peterson, L. Football Injuries during FIFA Tournaments and the Olympic Games, 1998–2001: Development and Implementation of an Injury-Reporting System. *Am. J. Sports Med.* **2004**, *32*, 80–89. Hoff, G.L.; Martin, T.A. Outdoor and Indoor Soccer: Injuries among Youth Players. *Am. J. Sports Med.* **1986**, *14*, 231–233.
14. Ribeiro, R.N.; Costa, L.O.P. Epidemiologic Analysis of Injuries Occurred during the 15th Brazilian Indoor Soccer (Futsal) Sub20 Team Selection Championship. *Rev. Bras. Med. Esporte* **2006**, *12*, 1–5. Ekstrand, J.; Gillquist, J.; Möller, M.; Oberg, B.; Liljedahl, S.-O. Incidence of Soccer Injuries and Their Relation to Training and Team Success. *Am. J. Sports Med.* **1983**, *11*, 63–67.
15. Hermans, V.; Engler, R. *Futsal: Technique, Tactics, Training*; Meyer & Meyer Verlag: Berkshire, UK, 2010; ISBN 1-84126-304-4Kaul, N. Involuntary Retirement Due to Injury in Elite Athletes from Competitive Sport: A Qualitative Approach. *J. Indian Acad. Appl. Psychol.* **2017**, *43*, 315–325.

16. Gene-Morales, J.; Saez-Berlanga, A.; Bermudez, M.; Flandez, J.; Fritz, N.; Colado, J.C. Incidence and Prevalence of Injuries in Futsal: A Systematic Review of the Literature. *J. Hum. Sport Exerc.* **2021**, *16*, S1467–S1480.
17. Lopes, M.; Martins, F.; Brito, J.; Figueiredo, P.; Tomás, R.; Ribeiro, F.; Travassos, B. Epidemiology of Injuries in Elite Male Futsal Players. *Clin. J. Sport Med.* **2023**, *33*, 527–532.
18. Lago-Fuentes, C.; Jiménez-Loaisa, A.; Padrón-Cabo, A.; Calvo, M.M.; García-Pinillos, F.; Rey, E. Epidemiology of Injuries in Elite Female Futsal Players: A Prospective Cohort Study. *Int. J. Sports Med.* **2020**, *41*, 885–890.
19. Junge, A.; Dvorak, J. Injury Risk of Playing Football in Futsal World Cups. *Br. J. Sports Med.* **2010**, *44*, 1089–1092.
20. Pérez-Gómez, J.; Adsuar, J.C.; Alcaraz, P.E.; Carlos-Vivas, J. Physical Exercises for Preventing Injuries among Adult Male Football Players: A Systematic Review. *J. Sport Health Sci.* **2022**, *11*, 115–122.

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# "COMPARATIVE STUDY ON ANXIETY AND AGGRESSION IN BETWEEN NETBALL PLAYERS OF DEGREE AND PROFESSIONAL COLLEGES IN TELANGANA"

**Mr. Sunil Damera,**
**Physical Director (S.A),**
**Zilla Parishad High School Badguna,**
**Mandal: Nandipet, Dist: Nizamabad, Telangana.**
**Email: sunildamera@gmail.com**

**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. **Keywords:** Psychology, Athletes, Coaches, Trainees, Anxiety, Aggression, and Net 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 Net 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 Net ball players of degree and professional colleges.

**METHODOLOGY:**

The main purpose of the study was to compare the anxiety and aggression among Net ball players of degree and professional colleges for the purpose of the study nearly 130 university Net 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 net 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 degree and professional college net 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 degree and professional college net 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 degree and professional college net 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 degree and professional college net ball players.

**DISCUSSION ON HYPOTHESIS:**

It was hypothesized that there might not be any significant difference in Anxiety and Aggression among net ball players of degree and professional colleges 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 degree and professional college players was comparatively insignificant at 0.05 levels. It was also concluded that the difference in level of Aggression among degree and professional college players was insignificant at 0.05 levels.

**REFERENCES:**

- Athletic Personality: A Psychological Pride, Delhi Surfeit Publication, 2020.
- Bhatra: HR; Abnormal Psychology, Oxford and ISH Publishing Company Pvt. Ltd., New Delhi, 2014.
- Crow. Educational Psychology, New Delhi: Eurasia Publishing House, 2008.
- Kamlesh M.L. Psychology of Physical Education and Sports. Delhi: Metropolitan Book Company Private Limited, 1995.
- Zillam D, Hostility and Aggression, New York. Willey and Sons, 18(3), 1987.

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# THE PHYSICAL LITERACY

**Dr. Mantripragada. Rambabu**

**Physical Education Teacher**

**Navy Children School Visakhapatnam**

**rambabumantripragada@gmail.com**

## ABSTRACT

Physical literacy is a multifaceted concept that encompasses the ability to move with competence with confidence. Physical Literacy is essential for promoting lifelong physical activity reducing risk of chronic diseases. The physical activity is a vital component of human development and also essential to provide with skills, knowledge and different attitudes to participate in physical activity throughout their life. Individuals can improve physical health, confidence, cognitive function, social skills and also self-esteem. Promoting physical literacy in individuals of all ages and abilities. Key words. Physical literacy, Game based skills, movement skills, physical fitness, health and wellness, chronic disease.

## INTRODUCTION

Physical Literacy is a critical concept that recognizes the importance of physical activity in promoting overall wellbeing and health. Taking part in Physical literacy individual can improve their physical health, confidence and self esteem. It is also increases the cognitive function and social skills.

### A. The elements of Physical Literacy.

1.Motivation and Confidence (Affective)

2.Physical Competence (Physical)

3.Knowledge and Understanding (Cognitive)

4.Engagement in Physical Activities for Life (Behavioural)

### B. **Importance of physical literacy for overall well-being:**

Social, Aesthetic, Competition and Survival

C**. Components Physical Literacy**.

Physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.

D. **Fundamental Movements.**

E. Physical Health Benefits improve your ability to do everyday activities improve cardiovascular ability.

F. Cognitive Benefits reduce your risk of cognitive decline, including dementia

Social and Emotional Benefits decreases stress, anxiety, and fatigue Improves confidence and well-being.

Long Term Implications improve muscular and cardiorespiratory fitness, improve bone functional health, reduce risk of hypertension, coronary heart disease, stroke, diabetes, cancer, reduce the risk of falls and hip fractures, help maintain body weight d with Process.

## CONCLUSION

Physical literacy is a vital and a critical concept that has the potential to transforms the way we approach physical activity and health. By promoting physical literacy, we can empower individuals to take control of their health and wellbeing.

## RECOMMENDATIONS

Integrate physical literacy in Education, Provide opportunities for physical activity. Promoting Physical Literacy in Community and by support Physical literacy research**.**

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# "A RELATIVE STUDY OF CHEST GIRTH AND ABDOMINAL STRENGTH AMONG ELITE ATHLETES IN HYDERABAD"

**1. T Vijaya Sagar,**

**Email:tvsagar75@gmail.com**

**2. Dr. Md Imran O.U.**

**Lecturer in GCPE.**

## ABSTRACT

**Objective:** To examine the relative study of anthropometric measurements (Chest Girth) and selected motor fitness variables (Abdominal Strength) among elite athletes in Hyderabad.

**Method:** A sample of (N=90) subjects were selected for this study total 90 Male Elite Athletes i.e. 30 Male Sprinters, 30 jumpers and 30 Male Throwers and The selected 90 subjects were 20±2years of age. And the anthropometric measurements (Chest Girth) and conducted the motor fitness tests (straddle Chins for Abdominal Strength) of those subjects were taken. after collection of data to compare sprinters, jumpers and throwers with respective of motor fitness variable i.e Abdominal Strength of those subjests statistical analysis done by one-way anova.to check the mean differences banferroni post hoc tests were done of those subjects.

**RESULTS:** The results of the study indicate that there will be a significance difference among sprinters, jumpers, and throwers with respective of anthropometric measurements (Chest Girth) and motor fitness variables (Abdominal Strength). Keywords: Anthropometric measurements, motor fitness variables.

## INTRODUCTION

Sports serve vital social and cultural functions the importance of which can hardly be exaggerated. The contribution of sports towards the overall welfare of the human society and Sports help in the all round development of human personality. Provide ample and healthy means for recreation and relaxation of human mind and body.

## ANTHROPOMETRIC VARIABLES

Anthropometry is the measurement of body size and proportions. The measurements include body weight, height, circumference, skin fold thickness and bony widths and lengths (Heyward, 2006). Anthropometry is a branch of science concerned with comparative measurement of the human body, its part, and its proportions and compositions. It is the study of measurement of the human body in terms of the dimensions of bone, muscle and adipose tissue.

## ANTHROPOMETRY AS A SELECTIVE DIAGNOSTIC PARAMETER IN SPORTS

Anthropometry, the science of human physical measurement, has wide application as one of the essential parameters consisting the selective diagnostic of any game or sport. Selective diagnostic includes the various sport medical parameters, facilitating the assessment of the comprehensive functional fitness of the sports participant. The study of "Body types" has a significant place in the field of sport. The majority opinion was that certain correlation existed between body build, physical characteristics and motor capacity. In modern sports the anthropometric measurements and their relationship with physical fitness will be the important guide for the coaches and athletes themselves for making training schedule and for classification of students into different groups according to their age, ability etc.

## ANTHROPOMETRIC ADVANTAGE IN SPORTS AND GAMES

The physical structure, especially the height, has definite and decisive advantage in game or sport. Similarly, segmental length of individual body parts, the leg length especially, is of considerable advantage in selected events in athletics and certain games jumping ability and sprinting.

## SIGNIFICANCE OF THE STUDY

The research" A study on anthropometric measurements and selected motor fitness variables among elite athletes in Hyderabad" useful as fallow

1. The result of this study is useful to teachers, coaches, trainers, sports students and those who are involved in competitive sports.

2. The unique aspect of this work is included recommendation for the practical use of research findings.

3. This study is add to the knowledge in the area of sports training and sports coaching.

4. This study may help the future scholars to select problem related to this study.

5. The findings may be helpful in identifying the strength and weakness of the subjects.

## AIM OF THE STUDY

To compare the anthropometric measurements among and motor fitness variables sprinters, jumpers, throwers of elite athletes of Hyderabad.

## METHODOLOGY

### SELECTION OF THE SUBJECTS

A sample of (N=90) subjects were selected for this study total 90 Male Elite Athletes i.e. 30 Male Sprinters, 30 jumpers and 30 Male Throwers and The selected 90 subjects were 20±2years of age. And the anthropometric measurement (Chest Girth) and conducted the motor fitness test (straddle Chins for Abdominal Strength) of those subjects were taken. after collection of data to compare sprinters, jumpers and throwers with respective of motor fitness variable i.e Abdominal Strength.

### 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 Fitness variable is – Abdominal Strength by administering straddle chins test.

### COLLECTION OF DATA

In order to collect the data test were administrated the score were recorded in the observed readings for the group.

### STATISTICAL TECHNIQUE

After all the data procured the researcher used one way Anova test for statistical analysis to find comparison among the sprinters, jumpers, throwers with respective of Anthropometric measurements and motor fitness

variables. Then to check the mean differences of anthropometric measurement and motor fitness variables among sprinters, jumpers, throwers Banferroni post hoc test was performed and significant relations and insignificant relations were found.

## RESULTS

The results of the study indicate that there was a significance difference between anthropometric measurements and selected motor fitness variables among sprinters, jumpers, throwers. It was hypothesized that there was significance difference between anthropometric measurements and selected motor fitness variables among sprinters, jumpers, throwers . Hence the hypothesized was accepted.

**TABLE – 1**

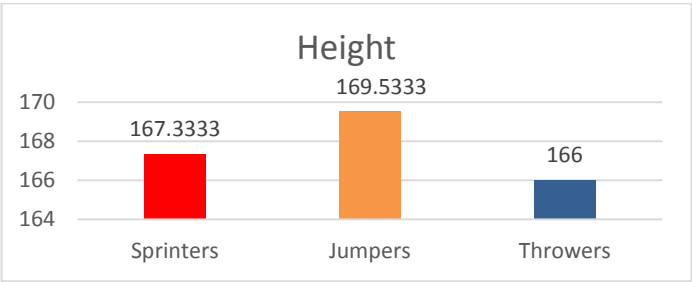
**One-way ANOVA table of Chest girth in sprinters, jumpers. Throwers**

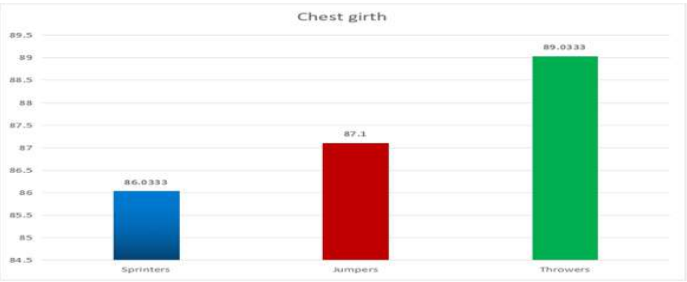
Units in centimeters

| S. No | APM | N-90 | Groups | Mean | S.D | SV | SS | df | MS | F | Sig. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Chest girth | 30 | Sprinters | 86.03 | .99 | BG | 138.75 | 2 | 69.37 | 8.64 | .000 |
| | | 30 | Jumpers | 87.10 | 3.96 | | | | | | |
| | | 30 | Throwers | 89.03 | 2.70 | WG | 698.63 | 87 | 8.03 | | |

*The table value required at df2 and df 87 is 3.10 at 0.05 significant level.

**Graph represent the difference of Chest Girth between Sprinters, Jumpers and Throwers**



## DISCUSSION

Researcher conducted the Oneway ANOVA of the Chest girth among sprinters, jumpers and throwers and get the statistics of Mean and Standard deviation and F-ratio. Mean of the Chest girth in sprinters, jumpers and throwers respectively 86.03, 87.10, 89.03 and standard deviations. 99, 3.96, 2.70 respectively and researcher did the ANOVA and result was between groups sum of squares was 138.75 with in groups 698.63 and degrees of freedom was between groups 2 and with in groups 87 and Mean square was 69.37, 8.03 respectively and the F-ratio was 8.64 and significance is. 000 is less than the table value 3.10 so there is difference among subjects to see the how much difference researcher did the post hoc test for differences there was significant relation betwixt sprinters and throwers, and Jumpers and throwers

**TABLE**-2

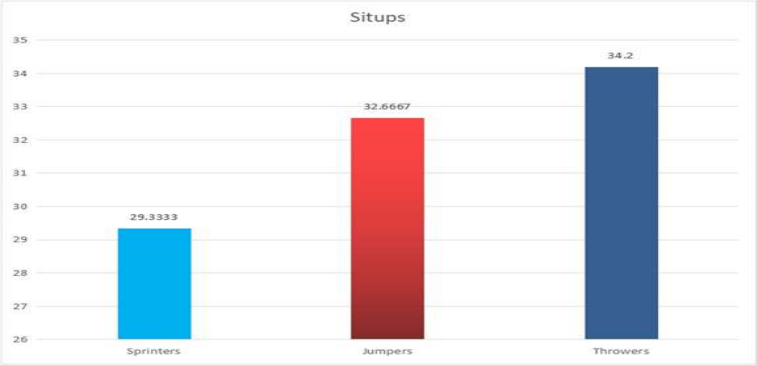
**One-way ANOVA table of straddle Chinups in sprinters, jumpers. throwers**

| S. No | MFC | N-90 | Groups | Mean | S.D | SV | SS | df | MS | F | Sig. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | straddle Chinups | 30 | Sprinters | 29.33 | 6.40 | BG | 371.46 | 2 | 185.73 | 6.72 | .002 |
| | | 30 | Jumpers | 32.66 | 5.45 | | | | | | |
| | | 30 | Throwers | 34.20 | 3.48 | WG | 371.46 | 87 | 27.63 | | |

*The table value required at df2 and df 87 is 3.10 at 0.05 significant level.

**Figure – 2**

**Graph represent the difference of straddle chin-ups between Sprinters, Jumpers and Throwers**




## DISCUSSION

Researcher conducted the Oneway ANOVA of the straddle Chinups among sprinters, jumpers and throwers and get the statistics of Mean and Standard deviation and F-ratio.Mean of the straddle Chinups in sprinters, jumpers and throwers respectively 29.33, 32.66, 34.20 and standard deviations 6.40, 5.45, 3.48 respectively and researcher did the ANOVA and result was between groups sum of squares was 371.46 with in groups 371.46 and degrees of freedom was between groups 2 and with in groups 87 and Mean square was 185.73, 27.63 respectively And the F-ratio was 6.72 and significance is. 002 is less than the table value 3.10 so there is difference among subjects to see the how much difference researcher did the post hoc test for differences there was significant relation betwixt sprinters and throwers, and Jumpers and throwers

## 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 for Chest girth there was significant relations betwixt sprinters and throwers, Jumpers and throwers, sprinters and jumpers.

- It was concluded that for Abdominal Strength there was significant relations betwixt sprinters and jumper's sprinters and throwers, Jumpers and throwers.

## BIBLIOGRAPHY

Norjali Wazir, M. R. W., Samsu, R., Yaacob, A., Martuan, S. Z. & Ishkandar, C. D. M. Comparison of Anthropometric and Physical Fitness among Sprinters, Jumpers and Throwers in Male Student-Athletes. International Journal of Education and Training (InjET) 8(1): June: (2022) P 1-6.

Nikola RADULOVIC, Dıfferences ın anthropometrıc characterıstıcs between athletes, sprınters and jumpers, an educatıonal-sports study, RPGE– Revista on line de Política e Gestão Educacional, Araraquara, v. 26, n. 00, e022016, Jan./Dec. 2022. e-ISSN: 1519-9029 DOI: https://doi.org/10.22633/rpge.v26i00.16466,P1-13

Uday N. Manjre, Relationship of Selected Anthropometric Measurement and Cardio Respiratory Endurance of District Level School Male Athletes, Aayushi International Interdisciplinary Research Journal (AIIRJ), Vol - VI Issue - V MAY 2019 Peer Review e-Journal Impact Factor 5.707 ISSN 2349-638x,P106-108.

Dr. Baiju Abraham, RELATIONSHIP OF 100MT SPRINT PERFORMANCE OF SPRINTERS ON SELECTED MOTOR FITNESS COMPONENTS, ANTHROPOMETRIC MEASUREMENTS AND PHYSIOLOGICAL VARIABLES, Indian Streams Research Journal, ISSN: 2230-7850 Impact Factor : 4.1625(UIF) Volume - 6 | Issue - 7 | August – 2016.P 1-5.

DIRK AERENHOUTS, Comparison of anthropometric characteristics and sprint start performance between elite adolescent and adult sprint athletes, European Journal of Sport Science, January 2012; 12(1):P 9-15.

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# A RELATIVE STUDY OF CALF GIRTH AND SPEED AMONG ELITE ATHLETES IN HYDERABAD"

**Dr Md Imran,**
**Lecturer in GCPE.**
**imran2812@gmail.com**

**Dr. A Siddhartha,**
**Lecturer in GCPE**
**Email: sis2sid@gmail.com**

## ABSTRACT

**Objective:** To examine the relationship of anthropometric measurements (calf girth) and selected motor fitness variables(Speed) among athletes in GCPE.

**Method:** A sample of (N=90) subjects of GCPE were selected for this study total 90 Male Athletes i.e. 30 Male Sprinters, 30 jumpers and 30 Male Throwers and The selected 90 subjects were 20±2years of age. And the anthropometric measurements (Calf girth) and conducted the motor fitness tests (50M Dash for Speed) of those subjects were taken. after collection of data to compare sprinters, jumpers and throwers with respective of motor fitness variables i.e Speed of those subjests statistical analysis done by Correlation of those subjects.

**RESULTS:** The results of the study indicate that there was a significant and insignificant difference among sprinters, jumpers, and throwers with respective of anthropometric measurements (Calf girth) and motor fitness variables(Speed). Keywords: Anthropometric measurements, motor fitness variables, correlation.

## INTRODUCTION

Athletics is a group of sporting events that involves competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and racewalking.Athletics is collective name for physical exercise and game requiring skill and activity .The history of athletics actually starts in the days of pre-history or of mythology. The story of athletics from before the Olympic games of 776B.C to those of today, however is not a continuous one. The reveal of the Olympic

Games in 1896 has stimulated athletics throughout the world to perfect their bodies in size, strength symmetry and agility.

## ANTHROPOMETRY

The word anthropometry is a Greek word and is a combination of two Greek words "Anthropos" means Man and "Metric" means Measure. Measurement of body size and composition should always be accompanied by the measurement of working capacity, physical fitness and energy expenditure. There is no single equipment through which we can measure the size and composition of human body together. Therefore, measuring the human size and composition, there are specific anthropometric equipment's for example: weighing machine for weight, anthropometric rod for height etc.

## IMPORTANCE OF ANTHROPOMETRIC MEASUREMENTS

Anthropometric measurement has discovered correlation between body structure physical appearances and sport capabilities. Anthropometry provides a valuable assessment of nutritional status in children and adults. The core elements of anthropometry are height, weight, body circumferences, body mass index, leg length and skin fold thickness etc., Anthropometric measurements can also evaluate body configuration in athletes this has been shown to enhance the competitive performance of athletes and to help identify fundamental therapeutic problems, such as eating disorders. The maximum athlete's potential, several things need to be bone.

## SIGNIFICANCE OF THE STUDY

The research" A study on anthropometric measurements and selected motor fitness variables among athletes of GCPE Hyderabad" useful as fallow

1. The result of this study is useful to teachers, coaches, trainers, sports students and those who are involved in competitive sports.

2. The unique aspect of this work is included recommendation for the practical use of research findings.

3. This study is add to the knowledge in the area of sports training and sports coaching.

4. This study may help the future scholars to select problem related to this study.

## AIM OF THE STUDY

To compare the anthropometric measurements among and motor fitness variables i.e calf girth and speed among sprinters, jumpers, throwers of GCPE Hyderabad.

## METHODOLOGY

## SELECTION OF THE SUBJECTS

A sample of (N=90) subjects of GCPE were selected for this study total 90 Male Athletes i.e. Male 30 Sprinters, 30 jumpers and 30 Throwers and The selected 90 subjects were 20±2years of age. And the anthropometric measurements (calf girth) and conducted the motor fitness tests (50M Dash for Speed) of those subjects were taken. after collection of data to compare sprinters, jumpers and throwers with respective of motor fitness variables i.e Speed.

## 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 Fitness variables are – Speed by administering 50M Dash.

## COLLECTION OF DATA

In order to collect the data test were administrated the score were recorded in the observed readings for the group.

## STATISTICAL TECHNIQUE

After all the data procured the researcher used Correlation for statistical analysis to find comparison among the sprinters, jumper's and throwers with respective of Anthropometric measurements and motor fitness variables(Speed). Then to check the relationship of anthropometric measurement and motor fitness variables among sprinters, and significant relations and insignificant relations were found.

## RESULTS

The results of the study indicate that there was a significanct relationship between anthropometric measurements and selected motor fitness variables among sprinters, jumpers, throwers. It was hypothesized that there was

significance relationship between anthropometric measurements and selected motor fitness variables among sprinters, jumpers, throwers. Hence the hypothesized was accepted.

## DETECTIONS OF CALF GIRTH

### Correlation of Calf girth and Motor fitness variables among Sprinters, Jumpers, and Throwers

The Data Procured from the sprinters, jumpers and throwers on Calf girth and motor fitness variables scores.

The fallowing table demonstrate the Pearson Correlation analysis of Calf girth and motor fitness variables among sprinters, jumpers, and throwers

**TABLE-11**

| **sprinters** | | **Speed** | **Sbj** | **Agility** | **straddle_chinups** | **Pushups** | **Pullups** | **Vertical_jump** |
|---|---|---|---|---|---|---|---|---|
| Calf_girth | Pearson Correlation | -.425* | .102 | .005 | .235 | -.099 | .024 | -.213 |
| | Sig. (2-tailed) | .019 | .592 | .978 | .211 | .601 | .900 | .259 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

**TABLE-2**

| **Jumpers** | | **Speed** | **Sbj** | **Agility** | **straddle_Chins** | **Pushups** | **Pullups** | **Vertical_jump** |
|---|---|---|---|---|---|---|---|---|
| Calf_girth | Pearson Correlation | .092 | -.147 | .269 | .219 | .286 | .092 | .183 |
| | Sig. (2-tailed) | .630 | .439 | .151 | .245 | .126 | .630 | .334 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

**TABLE-3**

| Throwers | | Speed | Sbj | Agility | straddle_chins | Pushups | Pullups | Vertical_jump |
|---|---|---|---|---|---|---|---|---|
| Calf_girth | Pearson Correlation | -.097 | .058 | -.210 | .180 | -.102 | .179 | .139 |
| | Sig. (2-tailed) | .611 | .760 | .266 | .341 | .592 | .344 | .507 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 25 |

**4.7.1.1 Results of Calf girth and Motor fitness variables**

**DISCUSSION**

Researchers conducted the Correlation of the calf girth among sprinters, jumpers and throwers

**CALF GIRTH AND SPEED:**

In Sprinters pearsons correlation value was-.428 so between Calf Girth and speed there was moderate and negative relation and p -value was.019 which is less than 0.05 so in significant.

In Jumpers pearsons correlation value was.092 so between Calf Girth and speed there was weak and positive relation and p -value was.630 which is greater th Relation an 0.05 so in significant.

In Throwers pearsons correlation value was-.097 so between Calf Girth and speed there was weak and negative relation and p -value was.611 which is greater than 0.05 so in significant.

**CONCLUSION:**

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

- Relationship Between Calf Girth and speed in Sprinters moderate, negative and significant.
- Relation between Calf Girth and speed in Jumpers weak, positive and insignificant.
- Relation between Calf Girth and speed in Throwers weak, negative and insignificant.

## BIBLIOGRAPHY

Norjali Wazir, M. R. W., Samsu, R., Yaacob, A., Martuan, S. Z. & Ishkandar, C. D. M. Comparison of Anthropometric and Physical Fitness among Sprinters, Jumpers and Throwers in Male Student-Athletes. International Journal of Education and Training (InjET) 8(1): June: (2022) P 1-6.

Nikola RADULOVIC, Dıfferences ın anthropometrıc characterıstıcs between athletes, sprınters and jumpers, an educatıonal-sports study, RPGE– Revista on line de Política e Gestão Educacional, Araraquara, v. 26, n. 00, e022016, Jan./Dec. 2022. e-ISSN: 1519-9029 DOI: https://doi.org/10.22633/rpge.v26i00.16466,P1-13

Uday N. Manjre, Relationship of Selected Anthropometric Measurement and Cardio Respiratory Endurance of District Level School Male Athletes, Aayushi International Interdisciplinary Research Journal (AIIRJ), Vol - VI Issue - V MAY 2019 Peer Review e-Journal Impact Factor 5.707 ISSN 2349-638x,P106-108.

Dr. Baiju Abraham, RELATIONSHIP OF 100MT SPRINT PERFORMANCE OF SPRINTERS ON SELECTED MOTOR FITNESS COMPONENTS, ANTHROPOMETRIC MEASUREMENTS AND PHYSIOLOGICAL VARIABLES, Indian Streams Research Journal, ISSN: 2230-7850 Impact Factor : 4.1625(UIF) Volume - 6 | Issue - 7 | August – 2016.P 1-5.

DIRK AERENHOUTS, Comparison of anthropometric characteristics and sprint start performance between elite adolescent and adult sprint athletes, European Journal of Sport Science, January 2012; 12(1):P 9-15.

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# "A STUDY ON PHYSICAL AND MOTOR FITNESS AMONG VOLLEY BALL, HAND BALL AND KABADDI PLAYERS OF NALGONDA IN TELANGANA"

**Mr. Ramprasad Kuntigorla, Ph. D Scholar,**
**University College of Physical Education,**
**Osmania University, Hyderabad, Telangana.**
**Email: krmpou@gmail.com**

**Sr. Professor. L.B. Laxmikanth Rathod,**
**DEAN Faculty of Physical Education,**
**Osmania University, Hyderabad, Telangana.**

**ABSTRACT:**

Motor fitness is regarded as the preparedness for performance with special regard for big muscles activity, in a more general phase of physical fitness. Fundamental and success of all games and sports is higher level of physical and motor fitness. Under any hypothesis, a secured and fit body is a re-requisite to become a top-level performer in any of the games and sports. Ramprasad (2020) conducted a research programme on comparison of selected physiological and physical factors of handball, kabaddi and volleyball. **Keywords:** Physical and Motor Fitness, Volley Ball, Hand Ball and Kabaddi Players.

## INTRODUCTION:

Volleyball is the game which is not having physical contact with opposite teams' player. Comparing to other two games in the study volleyball need less vital capacity because when every point was scored they will have the breathing time while net service. But vital capacity is needed while playing the rally. Endurance is needed to play whole five sets of math which is having 25 points in each set. Speed is needed to the ground and spike the ball while moving. Handball is a fast moving vigorous combative game so lot of oxygen is needed to play for an hour. So handball needs to be good oxygen uptake capacity (vital capacity). While handball has to play 60 minutes in a same energy level so lot of endurance is needed to play the game. While on the move of task break and while coming to difference speed will be needed to gain the position. Kabaddi is an also vigorous agility game with lot of body contact.

In this game vital capacity holds an important role while doing can't skill. Rider has to hold his breath while riding in opponent's court. If he loses his breath he will be called out. So more vital capacity need than any

other sport in the study. Kabaddi players need endurance for play a 40 minutes and speed is needed for antiriders to catch the riders while riders need speed to escape from antiriders and to touch the enter line to gain the point. To study the significant difference between Volley ball players, Hand ball players and Kabaddi players with respect to diastolic blood pressure. To study the significant difference between Volley Ball players, Hand Ball Players and Kabaddi players with respect to 50 meters speed.

The limitation of the present study is as follows the food habits; other regular habits and life style are no controlled. The regular activities of the students will not be controlled. Family background of the subject will not be considerer. Environmental factors, which contribute to the mental ability of the players, were not taken into consideration. The response of the subject to the questionnaire might not be honest in all cases and this was recognized as a limitation. The present study was delighted in the following aspects. The study will be restricted to 30 Volley Ball, 30 Hand Ball and 30 Kabaddi players. The age limit of the subject will be limited to the range of 18 to 25 years. The study was restricted to two physiological variables namely blood pressure and heart rate, Motor Fitness variables are Speed and Endurance.

## METHODOLOGY:

In this chapter the selection of subjects, selection of variables, reliability of the data, instrumental reliability, testers competence, subjects, collection of the data and statistical techniques employed for anglicizing the date have been described.

## SELECTION OF SUBJECTS:

A total of 90 inter collegiate level consist of volley ball, hand ball and kabaddi players were randomly selected.

**SELECTION OF VARIABLES:**

The research scholar reviewed the available scientific literature, books, journals, periodicals, and magazine and research papers pertaining to the study. Taking into confederation of the importance of these variables and the feasibility criteria for these following variables were selected for the investigator. Physiological Variables, Blood Pressure, Vital Capacity, Motor and Fitness Variables, Speed, Endurance Reliability of Data. The reliability of data was ensured by establishing the instrument reliability and subject reliability.

**SUBJECT RELIABILITY:**

As the same subjects were used t measure for self-confidence and achievement motivation of ability with questionnaires by the same investigator were considered reliable.

**COLLECTION OF DATA:**

The administration of the test and the method of the collection data were explained while collecting the data.

**PHYSIOLOGICAL VARIABLES:**

Blood Pressure and Vital Capacity was measured by using Standard Instrument.

**MOTOR VARIABLES:**

Speed and Endurance was measured in Track.

**STATISTICAL TECHNIQUES:**

The data that were collected from the subjects were treated statistically. To find out the significance difference among the volley ball, hand ball and kabaddi players for the main purpose of the study was “A Study on Physical and Motor Fitness among Volley ball, Hand ball and Kabaddi players.” Then the data were analysed with reference to the objectives and hypothesis by using student unpaired ‘t’ test and Karl Perason’s correlation coefficient by using SPSS 11.0 statistical software and results were obtained thereby have been interpreted.

**DATA ANALYSIS:**

After the data had been collected, it was processed and tabulated using Microsoft Excel – 2000 Software. The data collected on Vital capacity, Diastolic blood pleasure, 50 meters Speed and Endurance of 1000 meters of Volley ball, Hand ball and Kabaddi players. The main purpose of the study was " A study on physical and motor fitness among Volley ball, Hand ball and Kabaddi players ".

Then the data were analyzed with reference to the objectives and hypothesis by using students unpaired t-test and Karl Pearson's correlations coefficient by using SPSS 11.0 statistical software and the results obtained there by have been interpreted. It is also the intention of the investigator to find the out whether differences in the independent variable namely group of players (Volleyball, Handball and Kabaddi players) with respect to Vital capacity, Diastolic blood pressure, 50 meters Speed and Endurance of 1000 meters and consequently others. The results are presented in the following section. To achieve this hypothesis, the Karl Pearson's correlation coefficient technique has been applied and results are presented in the following table.

**TABLE-1:**

**Results of correlation coefficient between vital capacity, diastolic blood pressure, speed 50 meters and endurance 1000 meters of all the three types of players:**

| **Variables** | **Vital capacity** | **Diastolic blood pressure** | **50 meters speed** | **Endurance of 1000 meters** |
|---|---|---|---|---|
| **Vital capacity** | 1.0000 | | | |
| **Diastolic blood pressure** | 0.2596* | 1.0000 | | |
| **50 meters Speed** | 0.1223 | -0.0602 | 1.0000 | |
| **Endurance of 1000 meters** | 0.1099 | -0.0057 | 0.2062 | 1.0000 |

**Significant at 5% level of significance 9p<0.05. The relationship between vital capacity and diastolic blood pressure of all players (Volley ball, Hand ball & Kabaddi) players (r =0.2596, p<0.05) is found to positive and statistically significant at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, vital capacity increases with increase in diastolic blood pressure of all players. The relationship between vital capacity and 50 meters speed of all players (r=o.1223, p>0.05) is found

to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis rejected. (r=0.1099, p>0.05) is found to positive and statistically not significant at 5% level of significance.

Hence, the null hypothesis is accepted and alternative hypothesis is rejected. The relationship between diastolic blood pressure and 50 meters speed of all players (r=-0.0602, p>0.05) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative is rejected. The relationship between diastolic blood pressure and endurance of 1000 meters of all players (r=-0.0057, p>0.05) is found to negative and statistically not significant at 5% level of significance.

## CONCLUSION:

The Volley ball players and Hand ball players have similar speed. The Volley ball players and Kabaddi players have similar speed. The Hand ball players and Kabaddi players have similar speed. The Volley ball players and Hand ball players have similar endurance. The Volley ball players and Kabaddi players have similar endurance. The Hand ball players and Kabaddi players have similar endurance. Vital capacity increases with increase in diastolic blood pressure of Hand ball player's Vital capacity increases with increase in diastolic blood pressure of all players (Volley ball, Hand ball & Kabaddi) players.

## REFERENCES:


- Clarke H. Harrison, Application of Measurment of Health and Physical Education ($5^{th}$ Ed.) (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1996).
- Barrow Harold. M and rose Maiy McGee, A Practical Approach to Measurement in Physical Education (Philadelphia: Lea and Fibiger Publication, 2005).
- Cooper John. M, Mavlene Adrin and Ruth B. Glassow, Kinesiology**,** ($5^{th}$ Edition), (St. Louis: The C.V. Mospy Company, 2013).
- Bucher Charles .A and William E. Prentice, Fitness for college and Life (Saint Louis: Times Mirror Mosby College Press, 2018).

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# EFFECT OF SERIES AND PARALLEL METHODS OF GENERAL AND SPECIFIC BASKETBALL TRAINING ON SELECTED MOTOR FITNESS AND SKILL RELATED VARIABLES AMONG COLLEGE MEN BASKETBALL PLAYERS"

**M Govardhan Reddy[1]**

**1 Ph. D. Scholar, Annamalai University,**

**Annamalai Nagar, Tamilanadu, India**

**Dr. P. Anandhan**

**AssistantProfessor,**

**Department of Physical Education, Annamalai University,**

**Annamalai Nagar, Tamilanadu, India**

**Email:reddygovardhan0000@gmail.com**

**ABSTRACT:**

**Objective:** To examine the impact of general and specific basketball training on selected motor fitness i.e Speed and skill related variables among college men basketball players

**Method:** A sample of (N=45) subjects were selected by random sampling method. The Age ranges from 18 to 24 years The selected subjects will be randomly divided into three equal groups of fifteen each (n = 15). Group I undergo general and specific basketball training in series, Group II undergo general and specific basketball training in parallel and Group III will be acted as control.

Initially pre-test data will have collected before the start of training and after the Training Period Post test data will collected for three groups. Specific basketball training will be given to experimental group. Pre-test and post-test will be conducted on speed variable by administering 50M dash test. Obtained data will be analysed with ANACOVAStatistical technique. Keywords: Basketball Training, speed

## INTRODUCTION:

Basketball Training: Basketball is a dynamic sport that requires a blend of physical fitness, technical skill, tactical understanding, and mental toughness. General basketball training focuses on developing these attributes through a combination of drills, exercises, and game play. The training is designed to improve an athlete's performance by

enhancing their endurance, strength, agility, speed, and flexibility, as well as refining their basketball-specific skills like shooting, passing, dribbling, and defensive techniques.

Motor fitness refers to the ability to perform physical activities efficiently and effectively. It encompasses several key components, including strength, speed, agility, coordination, balance, and power. In basketball, motor fitness is crucial as it enables players to move quickly, change direction, maintain balance during complex movements, and apply force during actions like jumping and shooting.

In basketball, the integration of general training and the development of motor fitness and skill-related variables is essential for optimal performance. A well-rounded training program that addresses these aspects not only enhances individual abilities but also contributes to the overall success of the team. Through consistent practice and focused training, players can improve their physical capabilities and technical skills, enabling them to excel in the highly competitive environment of basketball.

Basketball is a highly dynamic and physically demanding sport that requires a combination of motor fitness and specific skill related variables to excel. The sport's fast pace and diverse skill set, ranging from shooting and dribbling to passing and defending, make it essential for players to develop a comprehensive training regimen that targets both general physical fitness and sport-specific skills.

Motor Fitness in Basketball: Motor fitness refers to the physiological capabilities that enable an athlete to perform physical tasks effectively. In basketball, motor fitness encompasses several key components.

**STATEMENT OF THE PROBLEM**:

The purpose of the study is to find out the effects of general and specific basketball training in series and parallel on selected motor fitness and skill related variables such as speed, agility, strength endurance, explosive power in terms of vertical distance, dribbling ability and shooting ability among men basketball players.

**SIGNIFICANCE OF THE STUDY:**

The present investigation has the following significant contribution.

1. The results of the study would reveal the effects of general and specific basketball training in series and parallel on selected motor fitness and skill related variables among basketball players after twelve weeks of training period.
2. The results of the study would provide an additional knowledge in the area of research.

## AIM OF THE STUDY:

This study aims to investigate the impact of general and specific basketball training on selected motor fitness and skill related variables among college men basketball players.

## HYPOTHESIS

The following will be drawn as hypotheses of this study.

1. It will be hypothesized that there may be significant differences among general and specific basketball training in series group, general and specific basketball training in parallel group and control group on selected motor fitness and skill related variables after twelve weeks of training period.
2. It will be hypothesized that there may be significant changes on selected motor fitness and skill related variables due to general and specific basketball training in series and general and specific basketball training in parallel after twelve weeks of training period.

## METHODOLOGY

## SELECTION OF THE SUBJECTS

The purpose of the study is to find out the effects of general and specific basketball training in series and parallel on selected motor fitness and skill related variables such as speed, agility, strength endurance, explosive power in terms of vertical distance, dribbling ability and shooting ability among men basketball players. To achieve this purpose of the study, forty-five men basketball players studying in and around the colleges in Hyderabad, Telangana State India will be selected as subjects. The age of the subjects will be ranged from 18 to 24 years. The selected subjects will be randomly divided into three equal groups of fifteen each (n = 15). Group I undergo general and specific basketball training in series, Group II undergo general and specific basketball training in parallel and Group III will be acted as control.

**TABLE SHOWING THE SAMPLE OF THE STUDY**

| S. No | BASKETBALL Players | No of Subjects |
|---|---|---|
| 1. | Experimental Group1 | 15 |
| 2. | Experimental Group2 | 15 |
| 3. | Control Group | 15 |
| | Total : | 45 |

## SELECTION OF VARIABLES

The Researcher reviewed the related scientific literature pertaining to this study on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present study variable. Selected motor Fitness variables is –speed. By 50M Dash test.

## EXPERIMENTAL DESIGN

The pre and post test random group design will be used as experimental design. The selected subjects will be randomly divided into three equal groups of fifteen each (n = 15) Group I will undergo general and specific basketball training in series, Group II will undergo general and specific basketball training in parallel and Group III will be acted as control. The subjects will be tested on selected criterion variables at prior and immediately after the twelve weeks of training programme as pre and post tests respectively.

## STATISTICAL TECHNIQUE

The collected data will be analyzed statistically by using ANCOVA (analysis of covariance) to find out the effects of general and specific basketball training in series and parallel on selected motor fitness and skill related variables such as speed, agility, strength endurance, explosive power in terms of vertical distance, dribbling ability and shooting ability among the groups for each variable separately. Whenever, the obtained 'F' ratio is found to be significant, the Scheffe's test will be applied as post hoc test to determine the paired mean differences, if any.

## CONCLUSION:

Within the limitation of the study it will be concluded that the by participating in 12 weeks of series and parallel Specific basket ball training program may significantly will improve the Speed in Experimental groups.

## BIBLIOGRAPHY:

Worobel, Mateusz. (2020). Stability Training and Effectiveness of Playing Basketball. Central European Journal of Sport Sciences and Medicine. 30. 85-95. 10.18276/cej.2020.2-08.

Brini, Seifeddine & Boullosa, Daniel & Calleja Gonzalez, Julio & van den Hoek, Daniel & Nobari, Hadi & Clemente, Filipe. (2022). Impact of combined versus single-mode training programs based on drop jump and specific multidirectional repeated sprint on bio-motor ability adaptations: a parallel study design in professional basketball players. BMC Sports Science Medicine and Rehabilitation.

K.S, Dr.Ramakrishnan. (2016). A Research Article Basketball Basketball. Wiki. 1. 1-7.

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# EFFECT OF ASANA AND PRANAYAMA TECHNIQUE ON SPEED AMONG VOLLEYBALL PLAYERS IN GUNTUR DISTRICT

**Rajani Naick Kethavathu**
**Research Scholar, Mohan Babu University,**
**Tirupati Andhra Pradesh, India.**

**Dr A Suman Kumar**
**Physical Education Director, Mohan Babu University,**
**Tirupati Andhra Pradesh, India.**

## ABSTRACT

This study investigated the effect of asana (yoga postures) and Pranayama (breathing techniques) on the speed of volleyball players in the Guntur district. Ninety high school volleyball players aged 11-15 years were randomly assigned to three groups: Asana group, Pranayama group, and a Control group. Pre-tests on speed were conducted, followed by 12 weeks of intervention with the respective techniques for the experimental groups, while the control group received no special treatment. Post-test measurements of speed were taken after the 12-week period. The analysis revealed that both the Asana and Pranayama groups showed significant improvements in speed, as indicated by the higher calculated t-values (2.5273 and 2.9846) compared to the required values at the 0.01 level. The Control group did not show any significant change in speed. Analysis of Covariance (ANCOVA) further confirmed the significant differences between the groups, with post-test mean speeds of 10.12 seconds for the Control group, 9.50 seconds for the Asana group, and 9.44 seconds for the Pranayama group. The adjusted post-test mean speeds were 9.94 seconds for the Control group, 9.63 seconds for the Asana group, and 9.476 seconds for the Pranayama group. The findings suggest that both Asana and Pranayama techniques can effectively improve the speed of volleyball players, highlighting the potential benefits of incorporating yoga practices into athletic training regimens. **Keywords:** Asana, Pranayama, Speed and Volleyball

## INTRODUCTION

Volleyball is a high-intensity sport that demands a combination of strength, endurance, speed, and agility. Among these, speed is one of the most critical attributes that determines a player's performance, especially in situations like spiking, blocking, and quick reactions. Speed, in this context, refers to both physical quickness and the ability to make split-second decisions during the game. In recent years, there has been increasing interest in incorporating mind-body techniques, such as yoga, to enhance athletic performance, particularly in sports that require rapid movements and mental clarity.

Yoga, an ancient Indian practice, comprises various physical postures (Asana) and breathing exercises (Pranayama) designed to promote physical health and mental well-being. It has been shown to improve flexibility, strength, concentration, and respiratory function. This makes yoga an ideal complementary training method for athletes, including volleyball players, to improve their speed and overall athleticism. Asana are specific postures that stretch and strengthen muscles, while Pranayama focuses on controlled breathing techniques that increase lung capacity and control the body's energy. Together, these techniques can potentially enhance an athlete's physical abilities and mental focus.

In the context of volleyball, speed is essential for reaction time and performance in both offensive and defensive scenarios. While conventional training methods focus primarily on physical conditioning, there is growing evidence suggesting that integrating yoga practices like Asana and Pranayama could provide additional benefits. By improving flexibility, reducing stress, enhancing cardiovascular fitness, and increasing mental focus, these practices may play a pivotal role in enhancing speed and agility on the court.

This study focuses on the effect of Asana and Pranayama on the speed of volleyball players in the Guntur district, exploring the potential benefits these techniques may offer in improving athletic performance.

## EXPERIMENTAL DESIGN

Random group design was followed in this study. Randomly selected (N=90) High School Volleyball Players in Guntur District and their age ranged between 11-15 years. The subjects were divided into three groups, experimental group I, experimental group II and control group. Experimental group I underwent Asana, experimental group II underwent Pranayama techniques and control group was not given any special treatment. Pre tests were conducted for all the subjects on Speed. The experimental groups participated in their respective exercises, namely Asana for twelve weeks and Pranayama techniques for twelve weeks. The post tests were

conducted on the above said 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.

**RESULT ON SPEED**

**Table -I**

**COMPUTATION OF 't' VALUE OF SPEED**

| S,No | Group | Post-Test Mean | Post Test Standard Devtion | Obtained"t" | Required "t" Value at 0.01 Level |
|---|---|---|---|---|---|
| 1 | Asana | 9.943 | 0.616 | 2.5273 | 2.567 |
| 2 | Pranayama | 9.93 | 0.615 | 2.9846 | |
| 3 | Control group | 10.220.590 | 0.601 | 0.5702 | |

From the Table -I it is observed that the pre-test mean values of Control, Asana and Pranayama groups were 10.22, 9.94 and 9.93 respectively. Post-test mean values of Control, Asana and Pranayama groups were 10.12, 9.5 and 9.44 respectively. Since the calculated values for Asana and Pranayama groups are more than the required value, there is significant difference between the mean values of the pre and post training for the Asana and Pranayama groups at 0.05 and 0.01 levels respectively. There is no significant difference between the mean values of the pre and post training for the control group as calculated 't' value is less than the required 't' value. Hence the effect of training is visible on Sprint of the Asana and Pranayama.

The analysis of co-variance on Sprint between pre and post-test mean values of Control, Asana and Pranayama groups have been presented in Table -II The data pertaining to pre and post-test results of Sprint were presented in Seconds.

**Table -II**

**ANALYSIS OF COVARIANCE OF SPEED**

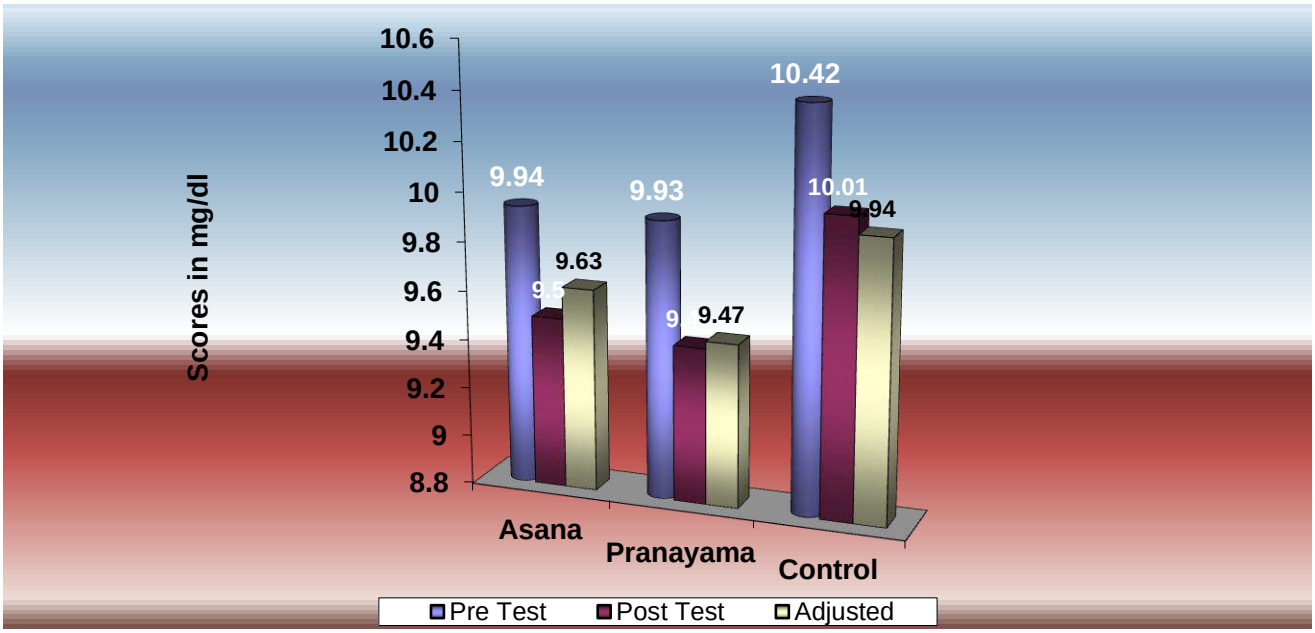
| Group | Mean | | | Sum of Squres | Degree of freedom | Mean Squre | F-Ratio |
|---|---|---|---|---|---|---|---|
| | Control | Asana | Pranayama | | | | |
| Pret-test | 10.22 | 9.94 | 9.93 | B:1.4012 | 2 | 0.7321 | 1.9352 |
| | | | | W:26.738 | 87 | 0.3725 | |
| Post-Test | 10.1 | 9.5 | 9.446 | B:7.021 | 2 | 3.6815 | 9.7432 |
| | | | | W:26.875 | 87 | 0.3795 | |
| Adjusted Post Test | 9.94 | 9.63 | 9.476 | B:2.89 | 2 | 1.35 | 18.39 |
| | | | | W:5.73 | 87 | 0.08 | |

From the Table -II, it is observed that the pre-test mean values of Control, Yogasana and Aerobic dance groups were 10.22, 9.94 and 9.93 respectively. There is no significant difference of the pre-test mean values between the groups at 0.01 level of confidence, as the obtained F-ratio 1.928 is for the degree of freedom 2 and 87.

The post-test mean values of the Control, Asana and Pranayama groups were 10.12, 9.5 and 9.44 respectively. There is significant difference of post-test mean values between the groups at 0.01 level of confidence, as the obtained F-ratio 11.018 is for the degree of freedom 2 and 87.

**Figure I**

**BAR DIAGRAM SHOWING PRE TEST, POST TEST AND ORDERED ADJUSTED MEANS ON SPEED**




**DISCUSSION AND FINDINGS ON SPEED:**

The primary objective of this study was to evaluate the effect of Asana (yoga postures) and Pranayama (breathing techniques) on the speed of volleyball players in the Guntur district. Speed, a critical attribute for volleyball players, influences both offensive and defensive actions, including quick reactions, movement agility, and overall performance on the court. The data collected from the pre-test and post-test assessments helped determine whether the incorporation of yoga practices could effectively improve the speed of players.

The results of the pre- and post-test measurements of speed indicate significant improvements in the experimental groups (Asana and Pranayama) compared to the control group. The pre-test means for the Control, Asana, and Pranayama groups were 10.22, 9.94, and 9.93 seconds, respectively. After 12 weeks of targeted interventions, the post-test means for these groups were 10.12, 9.50, and 9.44 seconds, respectively. These findings suggest that both Asana and Pranayama contributed to improvements in speed, as evidenced by the reduction in post-test times.

The statistical significance of these results was confirmed by the **t-test** analysis. The calculated t-values for the Asana and Pranayama groups were higher than the required value at the 0.01 level, indicating a significant difference between the pre- and post-test scores. Specifically:

- The Asana group showed a t-value of 2.5273, which is greater than the required t-value of 2.567, indicating a significant improvement in speed after the training period.
- The Pranayama group demonstrated an even higher t-value of 2.9846, further supporting the effectiveness of Pranayama in improving speed.

Conversely, the Control group showed no significant change, with a t-value of 0.5702, which is lower than the required t-value at both the 0.05 and 0.01 levels. This suggests that the lack of any special intervention for the control group resulted in no significant improvement in speed.

**ANCOVA Results:**

Further analysis using Analysis of Covariance (ANCOVA) on the pre- and post-test speed data provided more robust evidence of the differences between the groups. The pre-test data indicated no significant differences between the groups, with an F-ratio of 1.928, which is below the critical value. However, after the 12 weeks of intervention, the post-test results showed a significant difference, with an F-ratio of 11.018 at the 0.01 level, indicating that both Asana and Pranayama had a substantial effect on improving speed compared to the control group.

**Adjusted Post-Test Results:**

The adjusted post-test means further emphasized the significant impact of the interventions. The adjusted scores were 9.94 for the Control group, 9.63 for the Asana group, and 9.476 for the Pranayama group. The significant F-ratio of 18.39 for the adjusted post-test confirms that both Asana and Pranayama techniques were effective in enhancing the speed of the volleyball players. The differences between the groups remained statistically significant even after adjusting for pre-test scores, indicating that the effects observed were not due to initial group differences but rather to the interventions.

**CONCLUSION**

Based on the statistical analysis and findings, it can be concluded that both Asana and Pranayama techniques are effective in improving the speed of volleyball players.

## REFERENCES

1. Choudhury, B. (2012). *Yoga for the modern age: A guide to its benefits for body and mind*. New York: HarperCollins.
2. Gupta, S., & Sharma, N. (2019). Effects of Yoga on Flexibility and Muscular Strength among Volleyball Players. *Journal of Sports Sciences*, 36(1), 35-42.
3. Saraswati, S. (2017). *Pranayama: The Science of Breathing*. Yoga Publications Trust.
4. Ramaswami, S. (2013). *The Yoga of the Eight Limbs: A holistic approach to health and well-being*. New York: TarcherPerigee.
5. Patanjali, (2002). *Yoga Sutras of Patanjali*. Yoga International.
6. Khanna, A., & Sharma, P. (2018). The Impact of Pranayama on the Cardiovascular and Muscular Endurance of Athletes. *International Journal of Yoga*, 11(3), 200-205.
7. Singh, N. P., & Meena, A. (2016). Effects of Yoga and Pranayama on Mental Health and Performance. *Indian Journal of Sports Psychology*, 19(2), 113-120.
8. Singh, D., & Suresh, K. (2017). The Effect of Asana on Flexibility and Speed of Volleyball Players. *Sports Science and Technology Review*, 24(4), 104-112.
9. Bhattacharyya, S., & Bose, S. (2015). Yoga and its benefits for athletic performance. *Journal of Physical Education and Sports Management*, 6(1), 45-50.
10. Vatsyayan, K. (2011). *The Yoga of the Bhagavad Gita: Its Role in Personal Development*. Delhi: Orient Paperbacks.
11. Sherwood, D. (2010). Yoga in Athletics: Performance and Rehabilitation. *Journal of Sports Rehabilitation*, 19(1), 36-42.
12. Desai, A. (2014). Effects of Yoga Practices on Muscular Endurance and Flexibility of Volleyball Players. *International Journal of Physical Education and Sports Science*, 8(3), 75-80.
13. Solanki, S. (2019). Role of Breathing Exercises in Improving Speed and Reaction Time. *Asian Journal of Sports Science and Medicine*, 20(2), 112-118.
14. Grover, A., & Kumar, R. (2016). Impact of Yoga on Cardiovascular Fitness and Agility in Athletes. *Journal of Fitness Studies*, 15(3), 78-83.
15. Nanda, R., & Sharma, V. (2015). Yoga and Pranayama as a Supplementary Training Tool for Athletes. *Journal of Sports and Physical Education*, 12(4), 32-40.

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# THE IMPACT OF LOCUS OF CONTROL AND AGGRESSION ON ATHLETIC PERFORMANCE

**Dr. Battu Venkanna & Dr. Donavan Arun Kumar**

**SR Govt Arts & Science College.**

**Kothagudem Telangana**

## INTRODUCTION

Athletic performance is a product of both physical and psychological elements. Two major psychological factors that contribute to the development of an athlete's success are locus of control and aggression. Locus of control refers to an individual's belief about whether his or her achievements are self-determined internal forces (internal locus) or influenced by external forces (external locus). Athletes with an internal locus of control are more likely to be motivated, confident, and resilient; whereas those with an external locus may have difficulty taking responsibility and handling pressure. Similarly, aggression may either facilitate or debilitate performance, depending on the manner of channelling. Controlled aggression may enhance competitiveness and drive, while uncontrolled aggression may lead to emotional instability and rule violation. This study relates locus of control, aggression, and athletic performance to their effects on motivation, focus, and behavioural outcomes. Coaches and athletes need to understand these psychological factors to optimize performance and be successful in sports over the long term**. Key Words:** Stress management, sports performance, locus of control, aggression

## OBJECTIVES

- To explore the role of locus of control in athletic performance.
- To investigate the effect of aggression on sports performance.
- To determine the effect of locus of control on decision-making and stress management.
- To assess the positive and negative consequences of aggression in competitive sports.
- To investigate psychological interventions for balancing locus of control and aggression.
- To provide consultation to athletes, coaches, and sport psychologists

## SAMPLES

The study is conducted on the sample of 200 sports persons taken randomly from khammam division. The persons selected have participated at least at intercollegiate level. The sample is categorized in different

subgroups equally for comparison. The factors like locus of control and aggression are taken into consideration to assess their role of the sports performance of persons belonging to two groups of sex and age.

The sample distribution is given under:

| AGE | MEN | WOMEN | TOTAL |
|---|---|---|---|
| 15-20 | 50 | 50 | 100 |
| 21 and above | 50 | 50 | 100 |
| TOTAL | 100 | 100 | 200 |

**TOOLS USED**

Locus of control scale and Aggression scale is used.

**RESULTS**

**TABLE-1:** MEAN, S.D AND T-VALUES OF SPORTS ATHLETIC PERFORMANCE IN AGGRESSION (N=200)

| Aggression | | 100 mts | 200 mts | 400 mts |
|---|---|---|---|---|
| | M | 9.89 | 19.03 | 42.28 |
| Low | S.D | 7.14 | 1.12 | 2.36 |
| | N | 92 | 94 | 95 |
| | M | 9.41 | 16.76 | 39.36 |
| High | S.D | 0.06 | 1.06 | 2.18 |
| | N | 106 | 106 | 108 |
| t-value | | 1.84** | 5.122** | 4.82** |

*Significant at 0.05 level

**Significant at 0.01 level

The mean scores time taken of low aggression group is significantly high.

The T-values are significant

The performance of high aggression group in all the three events is significantly high.

**TABLE-2:** MEAN, S.D AND T-VALUES OF SPORTS PERFORMANCE IN LOCUS OF CONTROL (N=200)

| Control | | 100 mts | 200 mts | 400 mts |
|---|---|---|---|---|
| | M | 9.28 | 18.21 | 36.71 |
| Low | S.D | 5.62 | 1.02 | 1.86 |
| | N | 105 | 105 | 105 |
| | M | 9.81 | 19.61 | 48.02 |
| High | S.D | 0.08 | 1.35 | 3.05 |
| | N | 98 | 98 | 98 |
| t-value | | 2.02** | 6.53** | 5.206** |

*Significant at 0.01 level

The mean scores time taken of internal LOC subgroups are lower than external LOC.

The t-value are significant

The sports performance of internal LOC is high in all three events i.e,100, 200 and 400 meters run

## CONCLUSION

There is an impact of the locus of control on performance of a sports event. These having the internal locus of control have displayed significantly higher performance than their external LOC counterparts. There is a significant influence of aggression on the performance. The persons with lower aggression have displayed significant lower performance than those with higher aggression. The respondents belonging to the age groups 15-20 age have shown better performance in athletic events compared to the sample group of 21-25 age. There exists sex difference in sports performance wherein male players scored better than the female players.

## REFERENCES

**Gill, D. L., & Williams, L. (2008).** Psychological Dynamics of Sport and Exercise (3rd Ed.). Human Kinetics.

***Rotter, J. B. (1966).*** Generalized Expectancies for Internal versus External Control of Reinforcement. Psychological Monographs: General and Applied.

***Cox, R. H. (2011).*** Sport Psychology: Concepts and Applications (7th Ed.). McGraw-Hill.

**Klieber , DA and Hemmer,J.D .(1981),** Sex differences in the relationship of locus of control and recreational sports participations, sex, roles

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# STUDY THE IMPACT OF BEFORE OR AFTER SCHOOL SPORTS PRACTICES ON PARTICIPATION AND ACHIEVEMENT IN VARIOUS SPORTS COMPETITION IN PUNE CITY SCHOOLS.

**Omkar Bagi**

**Researcher**

**Sumit Tambe**

**Research Guide**

## ABSTRACT

This study investigates the influence of before and after-school sports practices on student participation and achievement in sports competitions across schools in Pune City. In this study, a stratified sampling method was used, in which schools from different boards in Pune City were selected.

The study investigated the impact of before and after-school sports practices on participation and achievements in schools across Pune City. Data was collected from a selected sample of schools by administering a questionnaire to physical education teachers and analysing the schools' sports participation and achievement records. The data was collected in quantitative form and analysed using descriptive statistics. The results showed that (89.6%) of the schools reported a significant increase in student participation in sports after introducing before and after-school sports practices. Additionally, (90.3%) of the schools reported an improvement in their sports achievements, including wins in inter-school competitions. The data also revealed that schools with before and after-school sports practices had higher student enrolment in sports programs (average participation rate of 68%) compared to schools without such practices (average participation rate of 42%). Overall, the study suggests that before and after-school sports practices have a positive impact on student participation and sports achievements in schools in Pune City. **Keywords -** Before or After School Sports Practices, Participation and Achievement of sports.

## INTRODUCTION

Participation in school sports practices is a vital aspect of a student's educational journey, offering numerous benefits that extend beyond the playing field. Research has consistently shown that involvement in sports can improve academic performance, enhance physical and mental health, develop social skills, and foster a sense of community and belonging. However, the timing of sports practices can significantly impact student participation and achievements.

The traditional after-school sports practice schedule has been the norm for decades, but with increasingly demanding academic schedules and extracurricular activities, many schools are now exploring alternative timing options, including before-school sports practices. Proponents of before-school sports practices argue that it improves time management, increases energy levels, and enhances focus throughout the day. On the other hand, critics argue that it may lead to fatigue, decreased academic performance, and reduced participation.

Pune city, with its growing emphasis on education and sports development, provides an ideal setting to investigate the impact of before or after school sports practices on participation and achievements of schools. This study aims to explore the effects of timing on student participation, academic achievements, physical fitness, and social skills, ultimately informing schools and policymakers about the most effective strategies to promote holistic student development.

Participation in school sports practices has been linked to various benefits, including improved academic performance, enhanced physical and mental health, and developed social skills. However, the timing of sports practices, whether before or after school, may influence student participation and achievements. This study aims to investigate the impact of before or after school sports practices on participation and achievements of schools in Pune city.

Factors that influence elementary school students' participation in sports. The article reviews empirical research, but the specific sample size and demographics are not provided. Various methods, including surveys, interviews, and observations, were used to collect data. The findings suggest that students' motivation to participate in sports is influenced by their selfperceived ability, coach feedback, and the athletic environment. Additionally, athletic participation was found to have positive effects on morals, academic achievement, and personal growth. The study recommends that coaches and educators provide supportive feedback, encourage autonomous growth, and create enjoyable challenges to promote students' participation in sports. Ultimately, the study concludes that understanding the factors that influence students' participation in sports can help educators

and coaches create positive athletic experiences that promote personal growth, academic achievement, and moral development. **Chambers (1991)**

## RESEARCH METHODOLOGY

A descriptive survey research design was employed to investigate the impact of before/after school sports practices on participation and achievements in schools, representing various school boards (SSC, CBSE, ICSE, and state boards). Stratified random sampling was used to select the sample, ensuring representation from different school types and age groups. Questionnaires were then sent to the physical education teachers of the selected schools.

Data Collection Procedure: The research procedure involved preparing a questionnaire to study the impact of before/after school sports practices on participation and achievement. The questionnaire was reviewed by an expert. Data was collected through the questionnaire and analysed to examine the correlation between sports participation, achievements, and ongoing extra sports practices.

## ANALYSIS AND INTERPRETATION OF DATA

The descriptive statistical summary of the data provides key insights into the participation and achievements of students in sports practices across Pune city schools. In the academic year 2023-24, the total number of students participating in sports showed 25 unique values, with 50 students being the most common participation figure, appearing twice.

Regarding categorical data, the study included schools from various educational boards, with SSC schools comprising 45.16% of the sample, followed by CBSE, ICSE, and other state boards. The medium of instruction was predominantly English (87.09%), while some schools also had Marathi and Hindi as mediums. When examining the personnel conducting extra sports practices, 74.1% of schools reported that P.E. teachers were responsible, whereas the remaining schools employed external coaches. The study also analysed financial aspects of sports participation, revealing that 48.38% of schools did not charge any fees for extra sports practices, while others charged varying amounts. In terms of practice frequency, the most common schedule was twice a week (20% of schools), while other schools held sessions either daily or thrice a week. Transportation was another crucial factor, with most students relying on private vehicles to attend sports practices.

The study further examined the impact of extra sports practices on student engagement and performance. 83.8% of schools reported an improvement in student participation due to structured sports practices, while 90% of schools noted an enhancement in sports achievements, including better performance in inter-school competitions. These findings suggest that extra sports sessions significantly contribute to increased student involvement and improved achievements in school sports.

## CONCLUSION

The study confirms that before and after-school sports practices have a substantial positive effect on student participation and achievements in Pune city schools. Schools that implement structured training programs demonstrate higher levels of student engagement and improved sports performance in inter school and district-level competitions. The findings emphasize the importance of qualified coaching, financial accessibility, and transportation support in ensuring greater participation.

## DISCUSSION

To further optimize sports participation, schools should focus on expanding access to free training, increasing professional coaching support, and improving transportation facilities. Additionally, policy interventions from educational boards and government bodies can help integrate structured sports programs into the academic curriculum. By addressing these factors, schools can enhance student participation, promote holistic development, and improve overall sports achievements in Pune city.

## REFERENCES

Bekhechi, A. K., & Khiat, B. (2019). Impact of regular physical activity and sports on school performance among girls and boys aged between 6 and 10 years. *Retos: nuevas tendencias en educación física, deporte y recreación*, (36), 398-402.

Chambers, S. T. (1991). Factors affecting elementary school students' participation in sports. *The Elementary School Journal*, *91*(5), 413-419.

Chuan, C. C., Yusof, A., & Shah, P. M. (2013). Sports Involvement and Academic Achievement: A Study of Malaysian University Athletes. *International Education Studies*, *6*(2), 12-21.

Cohen, D. A., Taylor, S. L., Zonta, M., Vestal, K. D., & Schuster, M. A. (2007). Availability of high school extracurricular sports programs and high- risk behaviors. *Journal of School Health*, *77*(2), 80-86.

De Meester, A., Aelterman, N., Cardon, G., De Bourdeaudhuij, I., & Haerens, L. (2014). Extracurricular school-based sports as a motivating vehicle for sports participation in youth: a cross-sectional study. *International journal of behavioral nutrition and physical activity*, *11*, 1-15.

Jonker, L., Elferink- Gemser, M. T., & Visscher, C. (2009). Talented athletes and academic achievements: A comparison over 14 years. *High Ability Studies*, *20*(1), 55-64.

Jordan, W. J. (1999). Black high school students' participation in school-sponsored sports activities: Effects on school engagement and achievement. *Journal of Negro Education*, 54-71.

Khan, M. Y., Jamil, A., Khan, U. A., & Kareem, U. (2012). Association between participation in sports and academic achievement of college students. *International Journal of Academic Research in Business and Social Sciences*, *2*(8), 419.

Maciel, L. F. P., Farias, G. O., Dallegrave, E. J., Flach, M. C., do Nascimento, J. V., & Folle, A. (2023). Sports and school involvement and performance: a systematic review of literature. *Retos: nuevas tendencias en educación física, deporte y recreación*, (47), 12-24.

Trudeau, F., & Shephard, R. J. (2008). Physical education, school physical activity, school sports and academic performance. *International journal of behavioral nutrition and physical activity*, *5*, 1-12.

Wretman, C. J. (2017). School sports participation and academic achievement in middle and high school. *Journal of the Society for Social Work and Research*, *8*(3), 399-420.

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# ISOLATED AND COMBINED EFFECT OF CIRCUIT TRAINING AND YOGIC PRACTICES ON ANXIETY AMONG COLLEGE MEN CRICKET PLAYERS

**Dr. Ediga Rajagopal**
**Physical Director,**
**Department of Physical Education.**
**Koneru Lakshmaiah University, Borampet,**
**Hyderabad, Telangana 500043,**

**Sydulu Bommakanti**
**Assistant Physical Director,**
**Department of Physical Education.**
**Koneru Lakshmaiah University, Borampet,**
**Hyderabad, Telangana 500043,**

**Raju Munigala**
**Assistant Physical Director,**
**Department of Physical Education.**
**Koneru Lakshmaiah University, Borampet,**
**Hyderabad, Telangana 500043,**

**Dr.K. Mahesh**
**Assistant Professor,**
**Department of Physical Education,**
**Malla Reddy University.Maisammaguda,**
**Dulapally, Hyderabad, Telangana 500100**

**ABSTRACT**

**Context*:*** Benefits of isolated and combined effects of Circuit Training and Yogic practice for college men cricket players**.** The Analysis of isolated and combined effects of Circuit Training and Yogic Practices group have significantly improved the Anxiety among college men cricket players.

**Aim*:*** The purpose of the study was to examine the analysis isolated and combined effects of Circuit Training and Yogic Practices on Anxiety among college men cricket players.

**Materials and Methods***:* To achieve the purpose of this study 60 college men cricket players from various affiliated colleges of Osmania University, Hyderabad District, Telangana State, India., were selected as subjects and their age ranged from 18 to 25 years. The subjects were randomly assigned to four equal groups of fifteen each and named as Circuit training group, yogic practice group, combined group and control group. Experimental group underwent training for four weeks and control group was not given any training. The standardized sports competition anxiety test *(*SCAT*)* was used to measure the anxiety. The test consists of fifteen statements. It is based on Likert*'*s method and each statement has three responses after value.

**Statistical Analysis Used*:*** The analysis of covariance *(*ANACOVA*)* was applied to find out the variance in each criterion variable *(*the process through which pre-test mean difference between the groups can be adjusted post test means*)*. Whenever the *'*F*'* ratio for adjusted post test means was found significant, Schaeffer*'*s post hoc test was applied.

**Results*:*** The pre-test means on Anxiety of Circuit training, yogic practice group, combined group and control group were 24.33, 24.47,24.53, and 23.93 respectively. The post-test means on Anxiety of Circuit training, yogic practice group, combined group, and control group were *21. 27*, 21.47,17. 67, and 23.80 respectively. The *'*F*'* value observed for the post-test on Anxiety was 23.17. It was greater than the critical ratio of 2.76 for degree of freedom 3, 56 at 0.05 level of confidence. Since the observed F-value on post test means among the groups namely circuit training group, yogic practice group, combined group and control group on Anxiety was highly significant.

**Conclusion*:*** The circuit training, yogic practice training and combined training had shown significant improvement in Anxiety among college men Cricket players from various affiliated colleges of Osmania University, Hyderabad District, Telangana State India., after undergoing circuit training, yogic practice training and combined training for a period of one months. **Key words:** Circuit training, Yogic practice training, Cricket, Anxiety, ANACOVA.

## INTRODUCTION

Games and sports promote and propagate peace and international cooperation. Games and sports though played for fun and enjoyment create a good atmosphere in the society. With rapid growth and development in the modern world, the sport has become a highly organized and competitive social phenomenon. Regular participation in sports is now widely accepted as beneficial to healthy and lifestyle in all age groups. Sport is

education. The need for the young and the old to engage in regular physical activity has long been recognized the world over as one of the pre requisites for achieving optimum health and quality of life.

Circuit training is an enduring and evolving training exercise format that was developed by R.E. Morgan and G.T. Anderson in 1953 at the University of Leeds in England. The term "circuit" refers to a 'number of carefully selected exercises arranged consecutively'. In the original format, 9–12 stations are comprised in the circuit; this number may vary according to the circuit's design. Each circuit training participant moves from one station to the next with little (15–30 seconds) or no rest, performing a 15- to 45-second work-out of 8–20 repetitions at each station (using a resistance of about 40%–60% of one-repetition maximum [1RM]). The circuit training workout program may be performed with exercise machines, hand-held weights, elastic resistance, calisthenics or any combination of these. When a 30-second to 3-minute (or longer) aerobics station is added between stations, creating what's known as aerobic circuit training, the method attempts to improve cardio respiratory endurance as well (although this has not been conclusively supported in experimental research) (Gotshalk et al, 2004). "A method of physical conditioning in which one moves from one exercise to another, usually in a series of different stations or pieces of equipment". In circuit Training each of several stations has a designated task. The student moves from station to station, generally in a prescribed order, completing the designated fitness task at each station. Activities should contribute to various components of physical fitness (strength, power, endurance, Agility and flexibility) (Morgan and Anderson (1953).

Circuit training is an efficient and challenging form of conditioning. It works well for developing strength, endurance (both aerobic and anaerobic), flexibility and coordination. Its versatility has made it popular with the general Public right through to elite athletes. For sports men and women, it can be used during the closed season and early pre-season to help develop a solid base of fitness and prepare the body for more stressful subsequent training. A well – designed circuit can help to correct the imbalances that occur in any sports player to a high level. It can also be one of the best types of training for improving strength endurance be it for a sport such as field hockey, soccer or a classic endurance event like the triathlon. Circuit training is an excellent way to improve mobility, Strength and stamina. The circuit-training format utilizes a group of 6 to 10 Strength exercises that are completed by doing one exercise after another. Each exercise is performed for a specified number of repetitions or for a prescribed time before moving on to the next exercise. The exercises within each circuit are separated by brief, timed rest intervals, and each circuit is separate by a longer rest period. The total number of circuits performed during 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.

Yoga is a system of attaining perfect physical and mental health. The body is the temple of soul and to attain harmony of mind, body and spirit, the body must be physically fit. Yoga controls one's senses resulting in an integrated personality. Positive changes in the life style of people can be brought through by yoga. Behaviors can also be moulded properly leading to balanced personalities. It clearly reveals that there will be a sound mind only in a sound body. To keep our body in good condition, it is essential that the various organs and systems of our body must be in good condition. Yogic exercises play an important role in the maintenance of the above systems. The practice of yoga not only develops the body but also enhances the mental faculties. More over, the yogi acquires mastery over the involuntary muscles of his organism.

The Bhagavadgita gives several Meanings of "Yoga" e.g. Evenness of Mind (Samatvam II -48) skill in action (Karmasu Kausalam, II -50) disconnection from union with pain (dukha samyoga viyogam, VI -23) etc. Sridhara, commenting on Gita explains 'Yoga' as 'Oneness with God' 4 (Paramesvaraikaparata), while Dhanapati in his Bhasyotkarsadipika says that oneness with God is nowhere mentioned by samkara as the meaning of 'yoga' and therefore he is in favour of 'Samatvam' as the Meaning of 'Yoga'. Looking at this variety of meaning of the word 'Yoga' in the Gita, Dasgupta says that there is not one definition of 'Yoga' but many and he suggests 'association' as its meaning which he thinks will suit the different contexts in the Gita. Yoga is a system of psycho physical training that has its uncovering of mystical consciousness. The yoga asanas not only to develop the muscles and the body but also regulate the activities of all the internal organs and glands to positively affect the nervous system which controls our well being to a greater degree than we actually suppose. Best of all, yoga is apt for all, regardless of age, color, caste, creed or religion; from the healthiest to the sickest, from the richest to the poorest, from the whitest to the blackest. Here are some of the specific and immense benefits of yoga. Yoga is a method by which one can remove ignorance and attain union with the supreme self (Iyengar 1983).

Cricket is a team sport played using a bat and ball on an oval-shaped outdoor arena. Duringthe course of a cricket game we experience long rest intervals with short bursts of high intensity. As a result, specific components of fitness are essential for a high-level of cricket performance. Cricket is a sport that generates a broad range of reaction from sports fans. Among those who are apart of more action-packed athletic traditions, cricket is variously seen as a boring, tedious game. In the present day the game of cricket has developed to such

an extent that millions of people take part and many more around the world take an interest through the media to watch the game. Teaching, training and coaching in cricket are essentially an educational process. The cricketer is supervised and educated by the coach, trainer or physical education teacher. In cricket, offensive (batting) principles include scoring runs, avoiding getting out or defending the wicket (staying in), and hitting into space to achieve these offensive goals

Anxiety is complex emotional state characterized by a general fear of fore bonding usually accompanied by tension. It often has to do with inter personal relation social situation and feeling of rejection and insecurity and usually a part of anxiety (Abrahamsen, 2008).

## METHODOLOGY

The purpose of the study was to find out whether there would be any significant improvement on selected variables as a result of isolated and combined effect of circuit training and yogic practices performance on Anxiety among college men Cricket players. To achieve the purpose, 60 Men students from age group 18 to 25 years had been randomly selected for as final samples for further data collection process of the study. Subjects for study had been chosen from University Degree and PG Colleges, various affiliated colleges of Osmania University, Hyderabad District, Telangana State India. The subjects were divided into four groups, namely Circuit Training group, Yogic practice group, Combined group, and control group, each group consisting of 15 subjects.

**Rationale for the selection of the subjects** as the study was conducted to investigate the influence of isolated and combined effect of circuit training and yogic practices on Anxiety, the researcher has selected only Cricket players affiliated colleges of Osmania University, Hyderabad District, Telangana State, India. who aim to participate in competitions.

## RESEARCH DESIGN:

Random group design was used as research design with 60 Men Cricket players age group 18 to 25 years have been selected for as final samples for further data collection process of the study. Subjects for study have been chosen from Degree and PG Colleges, various affiliated colleges of Osmania University, Hyderabad District, Telangana State, India. The subjects were divided into four groups, namely Circuit Training group, Yogic

practice group, Combined group, and control group, each group consisting of 15 subjects. Initial data were collected before the treatment by using physical test. Circuit exercise group was treated by Circuit exercise programmes, the yogic group was treated by yogic practices programmes, the combined group treated by both circuit and yogic training programmes, and control group was kept idle for one months**.** None of the subjects was involved in any other treatment or other systematic training programme which might have influenced the results. Immediately after the training period the final test conducted.

**TRAINING PROGRAMME：**

During the training period, the experimental groups underwent their respective training programs three days per week (Alternative days) for four weeks. Group-1 underwent only circuit training, group-2 only yogic practices training, group-3 both circuit and yoga practice training and group-4 acted as control group. Each group consisted of 15 cricket players. During the training days the experimental groups worked out for 45 to 60 minutes approximately including warming up and warming down periods. The subjects underwent their respective programs as per the schedule under the supervision of the investigator. Each group was having training session of ten minutes for warm up and warm down exercise, involving calisthenics and stretching. Circuit trainings such as Squat jump, Plank, Calf raises, Standard push ups, sit-ups, press-ups, and abdominal crunches are given to the subjects. Yogic practice trainings such as Chakrasana, Natarajasana, Halasana, Bakasana, Sarvangasana, Nadi suddhi pranayama, Silent meditation exercises are given to the subjects. Combining both Circuit training and Yoga practices trainings including warm up and warm down training along with Squat jump, Plank, Calf raises, Standard push ups, sit-ups, press-ups, Chakrasana, Natarajasana, Halasana, Bakasana, Sarvangasana, Nadi suddhi pranayama and abdominal exercises were given to the subjects. Group- 4 acted as control group and they were instructed not to participate in any strenuous physical trainings and specific training throughout the training program. However, they performed their regular activities as per the curriculum. All the subjects involved in the training programs were questioned about their stature throughout the training period. None of them reported any injury. However, muscle soreness and fatigue were reported in the early weeks, which subsided later. Attendance was recorded and calculated for the three experimental groups separately by dividing total number of training sessions by the number of sessions present.

## DISCUSSIONS ON FINDINGS

**Table – I COMPUTATION OF ANALYSIS OF COVARIANCE OF ANXIETY (Scores in Seconds)**

| | Circuit Training Group | Yoga Practice Group | Combined Training Group | Control Group | Source of Variance | Sum of Squares | df | Mean Squares | Obtained F |
|---|---|---|---|---|---|---|---|---|---|
| **PreTest Mean** | 24.33 | 24.47 | 24.53 | 23.93 | **Between** | 3.25 | 3 | 1.08 | 0.28 |
| | | | | | **Within** | 213.73 | 56 | 3.82 | |
| **Post Test Mean** | 21.47 | 21.27 | 17.67 | 23.80 | **Between** | 288.45 | 3 | 96.15 | **23.17*** |
| | | | | | **Within** | 232.40 | 56 | 4.15 | |
| **Adjusted Post Test Mean** | 21.46 | 21.18 | 17.54 | 24.03 | **Between** | 317.17 | 3 | 105.72 | **37.13*** |
| | | | | | **Within** | 156.62 | 55 | 2.85 | |

The above table shows that the pre assessment mean values on Anxiety of Circuit Training group, Yogic practice group, Combined group and Control group are 24.33, 24.47,24.53 and 23.93 respectively. The obtained 'F' ratio of 0.28 for pre assessment scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Anxiety. The post assessment mean values on Anxiety of Circuit Training group Yogic practice group, Combined group and Control group are 21.47, 21.27, 17.67 and 23.80 respectively. The obtained 'F' ratio of 23.17 for post- assessment scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Anxiety. The adjusted post-assessment means on Anxiety of circuit Training group, Yogic practice group, Combined Training group and Control group are 21.46, 21.18, 17.54 and 24.03 respectively. The obtained 'F' ratio of 37.13 for adjusted post-assessment scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Anxiety. The results of the study indicate that there are significant differences among the adjusted post assessment means of circuit Training group, Yogic practice group, Combined Training group and Control group in Anxiety performance. To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table – II

**TABLE –II THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON ANXIETY**

**Adjusted Post –test Means**

| Circuit Training group | Yogic practice group | Combined group | Control group | Mean Difference | Confidence Interval |
|---|---|---|---|---|---|
| 21.46 | 21.18 | | | 0.28 | 1.78 |
| | 21.18 | 17.54 | | 3.64* | 1.78 |
| | 21.18 | | 24.03 | 2.85* | 1.78 |
| 21.46 | | 17.54 | | 3.92* | 1.78 |
| 21.46 | | | 24.03 | 2.57* | 1.78 |
| | | 17.54 | 24.03 | 6.49* | 1.78 |

* Significant at 0.05 level of confidence

The above shows that the adjusted post assessment mean differences on Anxiety between circuit training group and Combined group, circuit training group and Control group, yogic practice group and Combined group and Yogic practice group and Control group, Combined group and yogic practice group and Control group are 3.92, 2.57, 2.85, 3.64 and 6.49 respectively, which are greater than the confidence interval value of 1.78 at 0.05 level of confidence. Further the above shows that the adjusted post assessment mean differences on Anxiety between circuit Training group and yogic practice group is 0.28, which is less than the confidence interval value of 1.78 at 0.05 level of confidence. The results of the study showed that there was a significant difference between circuit training group and Combined group, circuit training group and Control group, yogic practice group and Combined group and yogic practice group, yogic practice group and Control group, Combined group and yogic practice group and Control group on Anxiety. Further the results of the study showed that there was no significant difference between circuit training group and yogic practice group on Anxiety. The above data also reveal that Combined group had shown better performance than circuit training group, yogic practice group and Control group in Anxiety.

## RESULTS OF THE STUDY

The results of the study indicate that all the Experimental groups namely circuit training group, Yogic practice group and Combined circuit training and Yogic practice group have significantly improved in the selected dependent components Anxiety. Further the results of the study showed Control group showed there is no significant improvement. The results of Circuit training group and Yogic practice group method indicated that both methods help to improve the Psychological variables like Anxiety of college men cricket ball players. Because both methods proved significantly better on the basis of results obtained before experiment and after experiment of circuit training group and Yogic practice group methods. The finding of present study is in the same line with results reported by The Effect of Yoga on Stress, Anxiety, and Depression.

## REFERENCES

1. Berner Y, Barer Y, Shefer G, Stern N. Circuit resistance training is an effective means to enhance muscle strength in older adults A Systematic Review and Meta-analysis. Ageing Res Rev [Internet]. Elsevier B.V.; 2017; Available from: http://dx.doi.org/10.1016/j.arr.2017.04.00
2. Mahesh K. Dr. Balaji D. Prasanna, (2022) A Study on Impact of Tamil Nadu Premier League Before and After in Tamil Nadu ,International Journal of Physical Education Sports Management and Yogic Sciences Year : 2022, Volume : 12, Issue : 1First page : ( 20) Last page : ( 27)Print ISSN : 2231-1394. Online ISSN : 2278-795X. Article DOI : 10.5958/2278 795X.2022.2 https://www.indianjournals.com/ijor.aspx?target=ijor:ijpesmys&volume=12&issue=1&article=004
3. Bedekar ,Chinmayee & Hande, Deepali (2017). Effect of yoga on health related physical fitness. International Journal of Multidisciplinary Research and Development, 4(3), 105-109.
4. Viero, I, Kruel, LFM(2008), Physiological adaptations to strength and circuit training in postmenopausal women with bone loss, J Strength Cond Res 22(6): 1816-1825.
5. Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise and physical fitness: definitions and distinctions for health-related research. Public health reports (Washington, D.C.: 1974), 100(2), 126-131.
6. Dharmalingam, Yuvaraj (2016). Effects of asana and pranayama practices on selected physical and physiological variables of college men. International Journal of Physical Education, Sports and Health, 3(5), 204-205.

7. Ergene, T. (2017). The relationships among test anxiety, study habits, achievement, motivation, and academic performance among Turkish high school students. Education & Science, 36(160):320-330.
8. Gaurav, Vishaw (2011). Effects of hatha yoga training on the health-related physical fitness. International Journal of Sports Science and Engineering, 5, 169-173.
9. Getty AK, Wisdo TR, Chavis LN, Derella CC, Mclaughlin KC, Perez AN, et al. Effects of circuit exercise training on vascular health and blood pressure. Prev Med Reports [Internet]. Elsevier; 2018;10(February):106–12. Available from: https://doi.org/10.1016/j.pmedr.2018.02.010
10. Romero-arenas S, Blazevich AJ, Martínez-pascual M, Pérez-gómez J, Luque AJ, López-román FJ, et al. Effects of high-resistance circuit training in an elderly population. EXG [Internet]. Elsevier Inc.; 2013;48(3):334–40. Available from: http://dx.doi.
11. org/10.1016/j.exger.2013.01.007
12. Lehnert M, Stastny P, Sigmund M, Xaverova Z, Hubnerova B, Kostrzewa M. The effect of combined machine and body weight circuit training for women on muscle strength and body composition. J Phys Educ Sport. 2015;15(3):561–8
13. Plevková L, Peráčková J, Pačesová P, Kukurová K. The effects of a 6-week strength and endurance circuit training intervention on body image in Slovak primary school girls. 2018;(1):459–64
14. Akhtar P, Yardi S, Akhtar M. Effects of yoga on functional capacity and well-being. *Int J Yoga.* 2013;6:76–9. .
15. Ross A, Thomas S. The health benefits of yoga and exercise: A review of comparison studies. *J Altern Complement Med.* 2010;16:3–12.
16. Coulson M, Archer D. London: A and C Black; 2009. Practical Fitness Testing Analysis in Exercise and Sport. .
17. 17 .Ganguly, S.K. Gharote, M.L. (1974), "Cardio-vascular efficiency before and after yogic training". Yoga Mimamsa, Vol. XVI, No. 1, pp. 89-97.
18. Hofstetter M.C, Mader U, Wyss T.(2011), Effects of a seven-week outdoor circuit training program on Swiss Army recruits, J Strength Cond Res. Dec 20.

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# TRADITIONAL KABADDI VERSUS TECHNO KABADDI

**Dr. Pulla Raghuvaran**

**DL – Physical Director,**

**MJPTBCWR Degree College, Kothagudem.**

## ABSTRACT

Life of every man is ridden by two horses – tradition and technology. The fight in every mind, whether to follow tradition or to enjoy the user-friendliness of technology, is always evident. In the phase of life, the betterment man is mostly driven by technology. Every test on a traditional practice results in a new technology. That was the ultimate cause of western games to reach the peak in recent years. This article has discussed the traditional heritage of India's very own sport kabaddi in line with technology for the game to reach the Olympic podium. Reaching the Olympic podium is possible by winning over the popularity contest. The more the popularity, the more are the fan followers. The recent rule changes and advancement in technology have escalated kabaddi facilitating popularity. Another important avenue is that at least 50 affiliated countries should systematically play the game setting up professional associations. When all these falls in place, the Olympic podium will be at a one-step reach. **Keywords:** Kabaddi, Olympic, Technology, Tradition.

## INTRODUCTION

Oh! What a revolution. The clock has spun too fast this decade. On one-side, advancements in science and technology have made man lead a switch button age. On the other side, the same has made the man run a rat's race. To update the ongoing latest changes that too alongside the rapid growth is still a challenging task. Like now cricket being a fond street-side hobby sport, during the early 19th century, kabaddi was one such [1,2]. Even in the present era, no Pongal festival of rural Tamil Nadu is celebrated without kabaddi. Kabaddi is a test for bravery. A quest for confidence and pride. Kabaddi is still developing from the rural roots. Earlier in the south of Tamil Nadu, especially, it was a pride call for every bridegroom.

## THE PAST TENSE OF KABADDI

The dehydrating temperature, layered skin tan, the bleeding toes and knees, dusty, polluted playfields, sludgy floor, and dirty jerseys were all real signs of popular kabaddi. Although being a popular game in South Asia, it has gained tremendous popularity around the world [3-6]. Kabaddi is also known as Hututu, Do-do, and Ghidugudu. It is an ancient mass-based group game, which is played in most of the tropical countries of tities. It

is popularly known as Hadudu in Bangladesh, Gudu in Sri Lanka, the Chub in Indonesia, and kabaddi in India. The game of kabaddi is one of the oldest games of Indian origin. As you know, the game has been playing for a long time (about 1000 years ago) in India. Circle kabaddi is a 4000 years old game. It was properly invented to be group attacks an individual and vice versa. A dramatized version of the great Indian epic Mahabharata has made an analogy of the game a tight situation faced by Abhimanyu when he was surrounded by the entire team of opponents. Buddhist literature speaks of the Gautama Buddha were also playing circle kabaddi for recreation. Further, in Mahabharata times, different kings such as Jarasandh, Bhim, Balarama, Krishna, Abhimanyu, Kansa, and Daryodhanaetcare few examples, who make the history of great battle by performing rules of the fight. The king Chandragupta, Krishnadevaraya, and Prithviraj Chauhan is further great examples for maintaining the tradition of kabaddi in the form of sport as well as battle. Hence, the origin of kabaddi poses infinite changes in the history of Indian scenario, and the popularity of this game is a rural indigenous origin draw charms and identity for a great performance about the blend of human strength, sound mind, concrete spirit, decision-making ability, and in the last human satisfaction.

## KABADDI HISTORY AND THE OLYMPIC MYSTERY

The origin of the game dates back to prehistoric times, played in different forms. The modern kabaddi game was played all over India and some parts of South Asia from 1930. The first known framework of the rules of kabaddi, as an indigenous sport of India, was prepared in Maharashtra, in 1921, for kabaddi competitions, combining the patterns of Sanjeevani and Gamini. Thereafter, a committee was constituted in 1923, which amended the rules framed in 1921. The amended rules were applied during the All India Kabaddi Tournament in 1923. The All India Kabaddi Federation was formed in 1950 to look after the promotion of the game, and the Senior National Championship started in the year 1952. The new body, Amateur Kabaddi Federation of India, came into existence from the year 1972 affiliated to the Indian Olympic Association with a view to popularize the game in India and neighboring countries of Asia. After the formation of this body, kabaddi took a new shape and national level competitions started for junior and sub-junior boys and girls. A separate competition, the Federation Cup, was introduced for men and women for the elite teams (best eight) of the country. Kabaddi was included as a regular sports discipline in the 11th Beijing Asian Games, 1990, where India won a gold medal for kabaddi – its only gold medal in Beijing. The Indian team continues to create history by winning the gold medal at each succeeding Asian Games held thereafter Hiroshima 1994, Bangkok 1998, Busan 2002, Doha 2006, Guangzhou 2010, and Incheon 2014. For the 1st time in the history of the Asian Games, a separate indoor

stadium was built for kabaddi competitions and training for the 15th Asian games held in Doha (Qatar) 2006. The training/warming up courts and main field of play were equipped with a giant public screen, which displayed replays and the running score. Two Tissot plasma scoreboards, info terminals for the presentation crew, the ceremony crew, and the media were also provided. The 15th Asian games at Doha provided an excellent opportunity to showcase kabaddi to many Europeans and Australians, who were responsible for organizing the games. A large number of spectators belonging to European countries, USA, Australia, Western Asia, and the Mediterranean countries, experiencing the game for the 1st time, were very impressed with the simple rules and the thrill of the sport and desired to introduce the sport in their countries. This had given kabaddi a very good and positive exposure for its future development in the continents of Europe, the USA, Australia, and Africa. Kabaddi has been included as a major discipline in the 2nd Asian Indoor Games that were held in Macau from October 25 to November 3, 2007, and in the Asian Beach Games hosted by Indonesia in 2008, which are major landmarks in the history of the game.

## THE PRESENT TENSE OF KABADDI

It was surprising and astonishing to watch pro kabaddi in television channels. What a tremendous growth. An outdoor fest has now become an indoor feast! R&D has not left any stone unturned. Yes! It has turned stony mud courts to soft and safe mattresses. Mother India, the home of kabaddi, has extended its case, thereby preventing 90% open injuries. Time and tide wait for no one. Now, we, too, need not wait for the sun to spread its light. Midnight or scorching sun kabaddi lovers can play anytime indoors. The love for the game has multiplied. After the pro kabaddi revolution, the viewership increased to 56%, that is, 43.5 crore viewers which were the second highest in India watching matches on television.

## NEW RULE CHANGES

### 1.1. 30 Seconds

A raid begins when a player enters the opponent's half. It lasts for 30 s within which the raider has to try and score a point – either a touchpoint or bonus point – and return back to his half. Failure to return within 30 s rules the raider as out. Each raid is restricted to 30 s (in both the halves). The clocks will be set/reset as the raider crosses the centerline or when the raid is over. The clocks will be stopped when each raid is restricted to 30 s (in both the halves). The clocks will be set/reset as the raider crosses the centerline orwhen the raid is over. Raider crosses center line on returning to his court raider exits the arena after being declared "OUT" or goes out of bounds and is declared out.

### 1.2. Do-or-Die Raid

If a team has two consecutive empty raids, then its raider in the next raid has to score a point. If he does not, then he is ruled as out. Quite aptly, it is called the "do-or-die raid." Hence, a team cannot have three empty raids in a row. A do-or-die raid, thus, often serves as a turning point in the game.

### 1.3. Super Tackle

A super tackle is when a raider is caught by the opponent who has just three or fewer defenders left on the court. In case of a super tackle, the defending team gets an additional point apart from the point from the tackle. However, it only revives one lost member, despite the number of points earned is two. A super tackle serves teams in a spot of bother, giving them a good chance to come back in the encounter, thus keeping the game in the balance.

### 1.4. Weight Category

- Men: Should not be >85 kg
- Junior boys: Should not be >70 kg
- Women: Should not be >75 kg
- Junior girls: Should not be >65 kg
- Sub-junior: Should not be >65 kg (Boys and Girls).

### 1.5. Technical Point

Awarding technical points to the opponent, but the same team shall take up the consecutive raid for late can't, double entry, and late entry.

### 1.6. The Future Tense of Kabaddi

There has been a gradual but significant change in trends of the game over the past 50 years. What was once considered, a game of brawn is not so now. The introduction of mats, shoes, new techniques, and changes in rules has made the sport infinitely more athletic and interesting. The modern, international, competitive avatar of kabaddi have evolved into a spectacular, hugely popular sport in an ever-growing list of countries from around the globe. India's very own sport – kabaddi – has been the talk of the town. Sanjeevani, Gaminee, Amar, Punjabi, or Sadugudu are various forms of kabaddi. With all the new rule changes and technological developments, the game has gained tremendous popularity. However, one thing that kabaddi is not is an Olympic sport. For a sport to be considered to be part of the Olympics, it must be widely practiced around the world – 75 countries across four continents. Kabaddi has seen an exponential growth in popularity and this would be just a formality in the near future. Despite the popularity, there are

plenty of reasons why kabaddi should be part of the biggest multi-sport event in the world. The number of countries and continents has never been in question in kabaddi, but the lack of a professional kabaddi association and league hampers the sport's chances of being part of the Olympics. Hence, if all the countries who play kabaddi invest in making it a professional sport in their country, kabaddi can put forth their name for consideration.

Kabaddi was introduced as a demonstration sport in Berlin Olympics in 1936. However, kabaddi never got recognized as an Olympic competitive sport due to various reasons. It has been recognized as an international sport and is featured in the Asian games format. However, to become an Olympic sport, it has crossed a few more hurdles. The World Kabaddi Federation is working hard to get a game into the Olympics, but they have been told by the International Olympic Committee that their request could only be entertained if the game can be played systematically in 50 affiliated countries. To gain the Olympic berth, the sport needs to be widely adopted in many countries. Countries like Japan have started playing this sport well. We need more countries to adopt this sport for it to be included in the Olympics. Apart from all these, to make the Olympic dream come true, we should work on the vigilant and acceptable technical methods which will make this game much more reliable, entertaining, safe, and interesting.

## CONCLUSION

Reaching the Olympic podium is possible by winning over the popularity contest. The more the popularity, the more are the fan followers. The recent rule changes and advancement in technology have escalated kabaddi facilitating popularity. Another important avenue is that at least 50 affiliated countries should systematically play the game setting up professional associations. When all these falls in place, the Olympic podium will be at a one-step reach.

## REFERENCES

1. Deshmukh, K.U., and Pushpalata, M. A comparative study of socioeconomic status in intercollegiate participation of kabaddi and football players. Indian Streams Res J, 2013, 2,1-4

2. Javeed, Q.S., and Dhonde, S.P. Effect of socioeconomic status and area of residence on aggression and neuroticism of national kabaddi players. Indian Streams Res J, 2012, 2, 1-5.

3. Rao, K.V.S., and Kishore, Y. Effect of yogic practices on cant ability among kabaddi players. Int J Multidiscip Res Dev, 2014, 1, 11-13.

4. Saravanan, C., Mahaboobjan, A. Impact of yogic and mallakhamb practices on selected physiological and performance variables among kabaddi players. Paripex Indian J Res, 2017, 6, 215-217.

5. De, A. K., Dasgupta, P. K., Panda, B. K., and Bhattacharya, A. K. Physical efficiency tests on Indian male "Kabaddi" inter-university players. Br J Sports Med, 1982, 16, 33-36.

6. Sidhu, H. Kabaddi, a vigorous game. J Phys Educ Recreation Dance, 1986, 57, 75-77.

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# ADVANCEMENTS IN SPORTS TECHNOLOGY: ENHANCING PERFORMANCE, SAFETY, AND ANALYTICS

**Dr. C Rama Rao**
**Director of Physical Education and Sports**
**K, L, E'S Lingaraj College(Autonomus)**
**Belagavi, Karnataka**
**Email:ritwikramarao@gmail.com**

**Dr. Richa Rao**
**Director of physical Education and sports**
**K.L.E' B.V.Bellad Law college**
**Belagavi, Karnataka**
**Email:ritwikricharao141@gmail.com**

**ABSTRACT**

This research work aimed to study and evaluate the impact of the sports technology over athlete performance, reducing injury risks, and increasing athlete engagement and commitment. To accomplish these objectives, the research used a survey-based approach with the help of structured questionnaire. The questionnaire comprised of demographic information and statements based on 5-point Likert's scale. A total of 415 responses were collected from the athletes and their coaches across different sports categories. The study constructed 3 hypotheses in accordance of the objectives. Statistical tests such as ANOVA and Pearson correlation test were implied that revealed significant findings across all three areas. The study found that sports technology can significantly improve athlete performance, with advanced tools like wearables and data analytics enabling real-time monitoring and personalized training. Sports technology was also found to significantly effective in reducing the risks associated with sports injuries. Finally, sports technology was found to increase athlete engagement and commitment by motivating consistent training, enhancing communication with coaches, and fostering accountability. **Keywords:** Sports Technology, Athlete Performance, Injury Prevention, Athlete Engagement, Technology Integration

## INTRODUCTION

Sports technology, in last few years, has brought a revolutionary change in sports industry. It has been recognized for its ability in increasing the effectiveness of athletes training, performance and recovery [1]. Innovations like wearable devices, data analytics, and virtual reality have made it easier to monitor athletic performance and identify areas for improvement. Prior to the introduction of sports technology, spots relied on basic tools like stop watches or even manual observations for observation that lacked precision. With the advancement in technology, real-time feedback has made training sessions more efficient and outcomes more measurable. [2] With innovations created to lessen injuries and speed up the recovery process, the emphasis on

athlete safety has also considerably grown. For example, wearable sensors can track vital signs, biomechanics, and physical exertion, offering insights that were previously impossible to gather [3]. These innovations have helped athletes push their limits and also create a safer environment for participation.

## PURPOSE OF THE STUDY

1. To explore the role of sports technology in enhancing athlete performance and decision-making.
2. To examine the effectiveness of sports technology in preventing injuries and aiding recovery.
3. To analyze the impact of sports technology on athlete engagement and commitment.

## RESEARCH METHODOLOGY

This research work used a survey-based approach for examining the impact of sports technology on performance, injury prevention, and athlete engagement. To accomplish these objectives, a questionnaire was designed for data collection. The questionnaire comprised following sections:

**Demographic Information:** Age, gender, experience, etc in sports activities.

**Statements Based on Likert Scale:** Respondents rated their level of agreement with various statements related to sports technology on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

**Data Collection:** A total of 415 responses were collected through an online and offline survey distribution. Respondents included athletes and coaches across various sports disciplines. The sample size ensures a representative and reliable dataset for analysis.

**Data Analysis:** The responses obtained from the respondents were statistically analyzed to test the hypotheses of the study and also to explore the relationships and impact of the sports technology on performance, injury prevention, and athlete engagement. Descriptive and inferential statistics will be employed to derive meaningful insights from the data.

### Data analysis and interpretation

This section exhibits the collected data from the respondents and discusses the results obtained.

**Age Group**

| Age Group | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 16-20 years | 56 | 13.5 | 13.5 | 13.5 |
| | 20-24 years | 194 | 46.7 | 46.7 | 60.2 |
| | 24-28 years | 103 | 24.8 | 24.8 | 85.1 |
| | Above 28 years | 62 | 14.9 | 14.9 | 100.0 |
| | Total | 415 | 100.0 | 100.0 | |

The data indicates that the majority of respondents fall within the 20-24 years age group, accounting for 194 individuals (46.7%), followed by the 24-28 years group with 103 respondents (24.8%). The Above 28 years category comprises 62 participants (14.9%), while the youngest group, 16-20 years, represents 56 respondents (13.5%). Together, these frequencies show that nearly half of the participants are aged between 20-24 years, making it the most represented age group in the study.

**Gender**

| Gender | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 267 | 64.3 | 64.3 | 64.3 |
| | Female | 148 | 35.7 | 35.7 | 100.0 |
| | Total | 415 | 100.0 | 100.0 | |

The data shows that the majority of respondents are male, accounting for 267 individuals (64.3%), while females make up 148 participants (35.7%).

**Profession**

| Profession | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Athlete | 367 | 88.4 | 88.4 | 88.4 |
| | Coach | 48 | 11.6 | 11.6 | 100.0 |
| | Total | 415 | 100.0 | 100.0 | |

The data reveals that the majority of respondents are athletes, comprising 367 individuals (88.4%), while coaches represent a smaller portion with 48 participants (11.6%).

**Years of experience in sports**

| Years of experience in sports | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | less than 2 years | 93 | 22.4 | 22.4 | 22.4 |
| | 2-4 years | 161 | 38.8 | 38.8 | 61.2 |
| | 4-6 years | 70 | 16.9 | 16.9 | 78.1 |
| | Above 6 years | 91 | 21.9 | 21.9 | 100.0 |
| | Total | 415 | 100.0 | 100.0 | |

The data shows that the largest group of respondents has 2-4 years of experience in sports, accounting for 161 individuals (38.8%). This is followed by those with less than 2 years of experience at 93 participants (22.4%), and those with above 6 years of experience, comprising 91 individuals (21.9%). The smallest group includes respondents with 4-6 years of experience, totaling 70 participants (16.9%).

**Primary sport of engagement**

The data indicates that the most common primary sport among respondents is football, with 128 participants (30.8%), followed by basketball/volleyball at 85 respondents (20.5%). Cricket accounts for 63 participants (15.2%), while tennis/badminton is the primary sport for 56 respondents (13.5%). Wrestling/boxing represents 47 individuals (11.3%), and the remaining 36 respondents (8.7%) are engaged in other sports.

**General Perception of Sports Technology:** A substantial number of respondents agreed or strongly agreed that sports technology is accessible and easy to use (**301 respondents**) and enhances their overall sports experience (**325 respondents**). However, opinions on the significance of sports technology for training and management were more divided, with **247 respondents** agreeing but a notable **110 respondents** strongly disagreeing.

**Performance Improvement:** Many respondents found that sports technology boosts their ability to set performance goals through data analytics (**309 respondents**) and contributes to tracking fitness levels with wearable devices (**272 respondents**). However, there was less agreement on its overall impact on measurable performance improvements, with **256 respondents** agreeing, but **106 respondents** strongly disagreeing.

**Injury Prevention:** Respondents generally viewed sports technology as effective in minimizing injuries, with **275 respondents** agreeing on tools like motion sensors and **309 respondents** finding it reduces the risk of overtraining injuries. Devices like smart helmets also received strong agreement (**267 respondents**) for improving safety.

**Engagement and Commitment:** Many respondents acknowledged that sports technology increases their engagement and helps track progress, with **276 respondents** agreeing it keeps them committed to fitness goals. Communication with coaches and teammates through technology platforms also received strong support (**259 respondents**).

## HYPOTHESES TESTING

### Hypothesis 1

**$H_{01}$:** There is no significant impact of sports technology on the improvement of athlete performance.

**$H_{a1}$:** There is a significant impact of sports technology on the improvement of athlete performance.

| **ANOVA** | | | | | |
|---|---|---|---|---|---|
| Improvement of Athlete Performance | | | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 2227.217 | 11 | 202.474 | 87.818 | .000 |
| Within Groups | 929.159 | 403 | 2.306 | | |
| Total | 3156.376 | 414 | | | |

**Hypothesis 1**

**Interpretation:** The results of the ANOVA test for Hypothesis 1 indicate that the p-value (Sig.) is .000, which is less than the significance level of 0.05. This means there is a statistically significant difference between groups regarding the impact of sports technology on the improvement of athlete performance. With an F-value of 87.818 and a large proportion of variation explained by differences between groups (Sum of Squares Between = 2227.217), the null hypothesis (H01) is rejected, and the alternative hypothesis (Ha1) is accepted. Therefore, it can be concluded that sports technology has a significant impact on the improvement of athlete performance.

### Hypothesis 2

**$H_{02}$:** There is no significant relationship between the use of sports technology and the reduction of injury risks.

**$H_{a2}$:** There is a significant relationship between the use of sports technology and the reduction of injury risks.

**Hypothesis 2**

| **Correlations** | | | |
|---|---|---|---|
| | | Sports Technology | Reduction of Injury Risks |
| Sports Technology | Pearson Correlation | 1 | .839** |
| | Sig. (2-tailed) | | .000 |
| | N | 415 | 415 |
| Reduction of Injury Risks | Pearson Correlation | .839** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 415 | 415 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

**Interpretation:** The results of the correlation analysis for Hypothesis 2 show a strong positive relationship between the use of sports technology and the reduction of injury risks, as indicated by the Pearson Correlation coefficient of .839. The significance value (Sig. = .000) is well below the threshold of 0.01, confirming that the correlation is statistically significant. Therefore, the null hypothesis (H02) is rejected, and the alternative hypothesis (Ha2) is accepted. This indicates that there is a significant relationship between the use of sports technology and the reduction of injury risks.

**Hypothesis 3**

**$H_{03}$:** There is no significant impact of sports technology on increasing athlete engagement and commitment.

**$H_{a3}$:** There is a significant impact of sports technology on increasing athlete engagement and commitment.

**Hypothesis 3**

| **ANOVA** | | | | | |
|---|---|---|---|---|---|
| Increasing Athlete Engagement and Commitment | | | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 2071.614 | 11 | 188.329 | 178.781 | .000 |
| Within Groups | 424.521 | 403 | 1.053 | | |
| Total | 2496.135 | 414 | | | |

**INTERPRETATION:**

The results of the ANOVA test for Hypothesis 3 show that the p-value (Sig.) is .000, which is less than the significance level of 0.05. This indicates that there is a statistically significant difference between groups regarding the impact of sports technology on increasing athlete engagement and commitment. With an F-value of 178.781 and a significant Sum of Squares Between = 2071.614, the null hypothesis (H03) is rejected, and the alternative hypothesis (Ha3) is accepted. Therefore, it can be concluded that sports technology has a significant impact on increasing athlete engagement and commitment.

## CONCLUSION

The research explored the impact of sports technology on athlete performance, injury prevention, and engagement. The findings of the study showed that sports technology has a substantial contribution in all the three areas. the study found that athlete performance has a impact on the performance of the athletes which was confirmed through an ANOVA test that showed a statistically significant effect with a p-value of .000. The study showed that sports technology like wearables and data analytics enables the athletes and the coaches to track the progress and also to identifies the areas where improvement is needed. With the Pearson correlation of .839 and a significant p-value of .000, the study also concluded that sports technology helps in reducing the risk associated with injuries. Based on the ANOVA result, the study found that sports technology can increase the athlete engagement and commitment towards their sports. Sports technology, including apps and tracking devices, motivates athletes to stay consistent with training, track their progress, and stay connected with coaches and teammates, ultimately fostering greater commitment to their goals.Sports technology was found to be playing a significant role in enhancing the performance of the athletes, reducing the risk of injuries and increasing their engagement and commitment. Thus, the study concludes that sports technology has grown to be an essentiality in sports and this essentiality will grow more with time and new innovations.

## REFERENCES

[1] A. A. H. N. Ahmad and D. N. Hussain, "Impacts of technology and innovation in sports Equipments: Enhancing performance and overall safety," Int. J. Sport. Exerc. Phys. Educ., vol. 6, no. 1, pp. 42–44, 2024, doi: 10.33545/26647281.2024.v6.i1a.75.

[2] D. A. Dhankhar and D. R. Sharma, "The impact of technology on sports performance and culture," *Int. J. Phys. Educ. Sport. Heal.*, vol. 10, no. 6, pp. 158–163, 2023, doi: 10.22271/kheljournal.2023.v10.i6c.3149

[3] D. K. Tokas and D. M. S. Rathore, "Embracing the 'digital athlete': How AI and digital technology can improve sports injury management: A Thematic review," *Int. J. Phys. Educ. Sport. Heal.*, vol. 11, no. 4, pp. 560–568, 2024, doi: 10.22271/kheljournal.2024.v11.i4i.3476.

[4] F. K. Fuss, A. Subic, and R. Mehta, "The impact of technology on sport — new frontiers," Sport. Technol., vol. 1, no. 1, pp. 1–2, 2008, doi: 10.1080/19346182.2008.9648443.

[5] G. Gurubasavaraja, "Influence of Technology on Top Sports Performance-A study," Int. J. Res. Anal. Rev., vol. 7, no. 1, pp. 1–9, 2020, [Online]. Available: www.ijrar.org.

[6] Z. Chen and X. Dai, "Utilizing AI and IoT technologies for identifying risk factors in sports," *Heliyon*, vol. 10, no. 11, p. e32477, 2024, doi: 10.1016/j.heliyon.2024.e32477.

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# PSYCHOLOGICAL FACTORS AND FUTURE PERFORMANCE OF BASKETBALL PLAYERS OF MAHARASHTRA STATE

**Dr. Shrinivas Vasantrao Motiyele**
**Assistant Professor in Physical Education**
**MGM University, Chhatrapati Sambhajinagar**

## ABSTRACT

Eleven published studies that reported 42 effect sizes were included. Psychological factors; task orientation, task-oriented coping strategies and perceptual-cognitive functions had small effects on future performance in Basketball (*ds* = 0.20–0.29). Due to high risk of bias there were low certainty of evidence for psychological factors relationship with future Basketball performance. Psychological factors investigated showed small effects on future Basketball performance, however, there was overall uncertainty in this evidence due to various sources of bias in the included studies. Therefore, psychological factors cannot be used as a sole deciding factor in player recruitment, retention, and release strategies; however, it would appear appropriate to include these in the overall decision-making process. Future, studies with more appropriate and robust research designs are urgently needed to provide more certainty around their actual role. **Keywords:** Psychology, Performance, Basketball

## INTRODUCTION

The key goal of applied sport science research should be to provide evidence-informed recommendations that practitioners and other key stakeholders (coaches, the board etc.) can use to improve their decision-making and ultimately positively impact their practice. To help, research should be guided by real-world issues that come directly from the field/key stakeholders. In contemporary professional Basketball, psychology is an area that is gaining more attention in both the applied setting of Basketball teams and the research literature. More specifically, one focus within both applied as well as research work is to implement intervention programs aimed to facilitate the development of psychological skills. A question regarding psychological factors was posed in our daily practice: can and/or should psychological factors guide the selection or de-selection decision of players (i.e. as a part of the recruitment strategy to recruit, retain or release a player) based on psychological factors? In other words, are psychological factors associated with future Basketball performance?

In one systematic review there were 48 psychosocial factors suggested as important for developing successful (talented) Basketball Players. Psychosocial factors were classified as: (a) psychological factors (e.g., self-control, task orientation, adaptive perfectionism, intrinsic motivation, resilience, anticipatory skills, coping strategies), (b) external social factors (e.g., autonomy supportive coaching, parenting styles, coach-player relationships, effective learning environment, talent development environments) and, (c) player-level behavioral indicators (e.g., adaptive lifestyle choices and volitional behaviors, quality of Basketball specific practice and play, appropriate use of coping strategies). One limitation, however, is that a majority of the included studies had used a cross-sectional or retrospective design. To not measure the proposed predictors prior to the outcome is a limitation when it comes to discussing causality.[3]

In a recently published systematic review, that included only prospective studies, the findings revealed that decision-making, high level of the achievement motives hope for success, and fear of failure were strongly associated with future Basketball success. More specifically, the results highlighted that perceptual-cognitive functions, closely related to decision-making, may be important for Basketball Players. This is in line with other research suggesting that superior perceptual-cogntive functions may be especially important for Basketball Players by enhancing the ability to respond to rapidly changing scenarios. This suggestion is logical given Basketball is played in an unpredictable environment where players constantly receive information, have to process it and then make an appropriate decision (e.g. pass and to whom, shoot or not and where or keep the ball, where to run or not to run i.e. positional play etc). Visual attention and decision-making may, therefore, be important. Working memory, inhibitory control, cognitive/mental flexibility, anticipation and pattern recognition are examples of perceptual-cognitive functions that have been suggested as useful for future performance and the development of elite Basketball players.

## REVIEWS

The systematic review of Gledhill et al. did not provide any effect sizes for the psychological factors that they identified, therefore it is difficult to assign an importance for example in our question of to what extent we should use these in the decision to recruit, retain or release a player. While Murr et al. did provide strength of association through reporting effect sizes for each of the included studies no overall weighted average effect size was reported. An additional limitation is also that neither of the studies included potential moderators (e.g., age) that might influence the strength of the association between psychological factors and future Basketball

performance. Understanding the strength of links between psychological factors and future performance and developing Basketball players would be useful to inform decision makers during the recruitment strategy.

Therefore we aimed: (1) to investigate whether psychological factors are associated with future Basketball performance as defined by the research field (e.g., progression. to professional Basketball, performance during next season); (2) to critically review the methods used in the included studies and summarize the evidence for the current research question; (3) to provide guidance for future studies.

## METHODS

This systematic review was registered on the PROSPERO database. The structure and reporting of this systematic review followed the PRISMA guidelines. We included studies if they met the following three criteria: (a) were of prospective design; (b) investigated the relationship or predictive power between psychological factors and future progression or performance in Basketball; and (c) presented statistical data necessary for calculation of Cohen's *d* effect sizes.

## RESULTS

The literature search identified 59 records. We excluded 62 records after title and abstract screening. The full text articles of the remaining 64 studies were assessed for eligibility. Eleven studies met the inclusion criteria and were included for review. The most common reason for exclusion was due to cross-sectional design. Examples of definitions of future Basketball performance ranged from numbers of goals and assists during the next season to progression to professional.

## DISCUSSION

The results showed that psychological factors, task orientation, task-oriented coping strategies, and perceptual-cognitive functions (measured with general and Basketball-specific tests) had small effects on future Basketball performance. However, differences in outcome measures, and inadequate consideration of confounding variables were common methodological issues of included studies which meant that overall, there is uncertainty around the level of scientific evidence for the precise role / size.

## LIMITATIONS

The overall effect sizes for the studies measuring several of the constructs were only based on a small number of effect sizes overall. This might influence the accuracy of the results for this category of factors. Relying on the definitions of future Basketball performance limits our results because it is difficult to generalize the findings to any specific performance indicator. The heterogeneity of definitions may reduce the generalizability of the results. Also, within several.

## CONCLUSION

Psychological factors (task orientation, coping strategies/skills and perceptual-cognitive functions) had small effects on future Basketball performance, however the specific level of this evidence is currently uncertain due to biases in current studies. Despite the uncertainty, psychological factors nevertheless should continue to be discussed, trained and researched as one of several aspects that might be relevant to future Basketball performance and ideally alongside other factors.

## REFERENCES:

- A. Gledhill *et al.* Psychosocial factors associated with talent development in Basketball: a systematic review Psychol Sport Exerc (2017)
- J. Antonakis *et al.* On making causal claims: a review and recommendations Leadership Quart (2010)
- D.L. Mann *et al.* Searching for the elusive gift: advances in talent identification in sport
  Curr Opin Psychol (2017)
- P. Gaudreau *et al.* Deveopment of a questionnaire for the assessment of coping straegies employed by athletes in competitive sport settings Psychol Sport Exerc (2002)
- S.Y. Kim *et al.* Testing a tool for assessing the risk of bias for nonrandomized studies showed moderate reliability and promising validity.
- Clin Epidemiol (2013)

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# EFFECT OF CIRCUIT TRAINING AND PLYOMETRIC TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES OF INTER COLLEGIATE MALE BASKETBALL PLAYERS

**Buram Parvathalu**
**Research Scholar,**
**Palamuru University,**
**Mahabub Nagar, TG)**

**Prof. L. B. Laxmikanth Rathod**
**Dean Faculty of Education**
**Osmania University,**
**Hyderabad, Telangana**

## ABSTRACT

The present study is to find out the effect of circuit training and plyometric training on selected physiological variables of inter collegiate male basket ball player. Forty-five basket ball players were selected from various colleges of mahabubnagar Dist, TG. The subjects were between 17 to 20 years. They were divided into three groups of fifteen in each. One group was acted as the circuit training group, group two was acted as the plyometric training group and another group was acted as control group. The experimental groups underwent the circuit training and plyometric training for 8 weeks 3 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 following criterion measures the physiological variables namely breath holding time and resting pulse rate were also tested. The standardized tests were taken before and after the training period. Bone mass and muscle mass was tested by using body fat scale was tested by using breath holding time and resting pulse rate. The paired 't' test was applied to analyze the collected data and in all cases the criteria for the statistical significance is set at 0.05 level of confidence. The result shows that breath holding time and resting pulse rate of the selected subjects was significantly improved on experimental groups of due to the effect of circuit training and plyometric training. **Keywords**: Breath Holding Time, Resting Pulse Rate, Circuit Training and Plyometric.

## INTRODUCTION

All sports activities depend on the natural and fundamental skills of walking, running, climbing, jumping, and throwing. Any achievement in sports is largely based on the finer aspects of any one or combination of the fundamental skills. Nevertheless, these skills are determined by the skeleton and muscular system of an individual. Physical fitness is to improve the muscular performance of the human being. It can be useful for optimum performance of game. Physical fitness is to develop emotional stability, endurance, strength, speed, flexibility, co-ordination and agility. The people of today demand even greater attention to physical fitness exercises, nutrition and rest build quality of physical fitness. Though it is a well – known fact that the development of different basic abilities are at different rates, most of these physical fitness abilities reach high, between the age of 12 and 15 years.

## CIRCUIT TRAINING

Circuit training was invented in 1953 as an effective and efficient way for coaches to train many athletes in a limited amount of time with limited equipment. The exerciser moved through a series of weight training or calisthenics arranged consecutively. It was fast paced workout of 15 to 45 sec per station with little (15-30 seconds) rest or no rest between stations. Today this is known as "circuit weight training" research has shown that it can increase muscular strength and endurance. There is mild improvement in aerobic stamina but only if the rest periods are kept very short. Another variation is "aerobic circuit training" aerobic stations like tread mill, rover or stepper (one to five minute per station) are interspersed with weight training stations. This protocol has been found to increase aerobic stamina and muscular endurance and endurance.

## PLYOMETRIC TRAINING

Plyometric training, also known as 'jump training", has traditionally been reversed for athletes in jump related or athletics based sports. This is mainly due to the similar movements involved in the drills for these two sports but they are also comparable in terms of the forces impacting on the body. For example, a sprinting athlete will load around 2.5 times body weight during each stride of the race.

Plyometric as a term was formed from the Greek root "pleythyein" which loosely translated and means "to augment" or "to increase". The term plyometric was coined by an American track and field coach in 1975 Fred Wilt. His thinking was to combine two Latin words "plyo"and "metrics which ag.ain loosely translated and means "more" and "to measure".

This "NEW" form of exercise training was designed to allow the athlete to have powerful and fast movements which will in turn lead to increased performance in their respective sports. This training technique stands unique due to the fact that it makes use of muscle strength, elasticity and innervations to allow an athlete to hit harder jump higher and throw further. The maximum force that a muscle can developed is attained during a rapid eccentric contraction. However, it should be realized that muscle seldom perform one type of contraction in isolation during athletic movements. When a concentric contraction occurs (muscle shortens) immediately following an eccentric contraction (muscle lengthens) then the force generated can be dramatically increased. If a muscle is stretched, much of the energy required to stretch it is lost as heat, but some of this energy can be stored by the elastic components of the muscle. This stored energy is available to the muscle only during a subsequent contraction. It is important to realize that is energy boost is lost if the eccentric contraction is not followed immediately by a concentric effort. To express this greater force the muscle must contact with in the shortest time possible. This whole process is frequently called the stretched shortening cycle and is the underlying mechanism of plyometric training.

## BASKETBALL

Basketball began with its invention in 1891 in Springfield, Massachusetts, by Canadian physical education instructor James Naismith as a less injury-prone sport than football. Naismith was a 31-year-old graduate student when he created the indoor sport to keep athletes indoors during the winters.[1] The game became established fairly quickly and grew very popular as the 20th century progressed, first in America and then in other parts of the world. After basketball became established in American colleges, the professional game followed. The American National Basketball Association (NBA), established in 1946, grew to a multibillion-dollar enterprise by the end of the century, and basketball became an integral part of American culture.

## SPORTS TRAINING

Sports training is done for improving sports performance. The sports performance, as any other type of human performance, is not the product of a single system or aspect of human personality. On the contrary, it is the product of the total personality of the sports person. The personality of a person has several dimensions e.g., physical, physiological, social and psychic. In order to improve sports performance, the social and psychic capacities of the sports 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. Sports

training, therefore, directly and indirectly aim at improving the personality of the sportspersons. No wonder, therefore, sports training is an educational (i.e., pedagogical) process. Sports training is a planned and controlled process in which, for achieving a goal, changes in complex sports motor performance, ability to act and behavior are made through measures of content, methods and organization.

## IMPORTANCE OF SPORTS TRAINING

The importance of sports and games in students' lives goes far beyond physical fitness. They are essential for mental and emotional well-being, life skills development, and academic success. Games and sports help shape students into well-rounded individuals, prepared to face life's challenges with confidence and resilience. Schools should emphasize the integration of physical education and sports into the curriculum, ensuring that students reap the full benefits of these activities. By fostering a love for sports and games, we are not just promoting healthier lifestyles; we are preparing students for a successful future, both inside and outside the classroom.

## EXPERIMENTAL DESIGN

To start the present study the research scholar chooses forty five male basketball players. Mahabubnagar, District, Telangana and their age groups were from 17 to 20 years. The chosen basket ball players were randomly classified into three equal groups' circuit training, plyometric training and Control Group (CG). Group I & II were known as experimental groups and group III was called as control group. Each group having fifteen (15) college basketball players. Experimental groups were engaged to circuit training and plyometric training for a period of eight weeks and control group did not went in any kind of training program apart from their regular routine. These subjects were tested twice prior and after the prescribed training period to find out the significant improvement on their physiological variable like breath holding time and resting pulse rate. Circuit training and plyometric training for eight weeks were given to the subjects of the experimental groups. Their training days and hours of every week were from Monday to Saturday between 4:00 PM to 5:00 PM. A pre-test was conducted before the commence of the training and final test data were collected after the eight weeks of training. The procured data were then statistically analyzed by paried't' test, ANCOVA and post hoc test. In all the cases 0.05 was fixed as the level of confidence.

## RESULTS:

The physiological variable namely breath holding time was measured through manual test. The results on the efficacy of circuit training, plyometric training group and control groups are presented in table –I.

**TABLE-I**

**COMPUTATION OF ANALYSIS OF COVARIANCE ON BREATH HOLDING TIME OF EXPERIMENTAL AND CONTROL GROUPS (Breath Holding Test - in seconds)**

| Test | Means | | | Sources of Variance | Sum of Square | DF | Mean Square | F | 'P" Value |
|---|---|---|---|---|---|---|---|---|---|
| | Training Group (CTG) | Plyometric Group (PTG) | Control Group (CG) | | | | | | |
| **Pre** | 39.33 | 39.53 | 39.60 | **B** | 0.58 | 2 | 0.29 | 0.43 | 0.96 |
| | | | | **W** | 284.67 | 42 | 6.78 | | |
| **Post** | 42.00 | 41.67 | 39.67 | **B** | 47.78 | 2 | 23.89 | 3.38* | 0.04 |
| | | | | **W** | 296.67 | 42 | 7.06 | | |
| **Adjusted Post** | 42.15 | 41.62 | 39.56 | **B** | 56.14 | 2 | 28.07 | 34.28* | 0.01 |
| | | | | **W** | 33.58 | 41 | 0.82 | | |
| **Mean Gain** | 2.67 | 2.14 | 0.07 | | | | | | |

*Significant difference at 0.05 level of confidence

Table -I displays that the pre test mean of breath holding time of circuit training group (CTG) was 39.33, plyometric training group (PTG) was 39.53 and control group (CG) was 39.60.

The observed ‘p’ value on pre test 0.96 was higher than the ‘p’ value of 0.05 to be significant at 0.05 level of confidence. This showed that there were no statistical significant differences on the pre tests among the experimental and control groups showing that the process of assigning of the groups was perfect while assigning the subjects to groups.

The post test analysis showed that there was a statistical significant difference among the groups, as the obtained 'p' value 0.01 was lower than the 'p' value of 0.05. This was proved that there were significant differences among the post test means of all the groups.

Taking into consideration of the pre and post test among the groups, the adjusted post test means were calculated and subjected to statistical treatment. The observed 'p' value of 0.01 was smaller than the required 'p' value of 0.05. This showed that there were significant differences among the means of experimental groups due to the allotted trainings on breath holding time.

**FIGURE -I**

**CYLINDER DIAGRAM DISPLAYING THE MEAN DIFFERENCE OF PRE AND POST TESTS SCORES ON LEG BREATH HOLDING TIME OF EXPERIMENTAL AND CONTROL GROUPS**

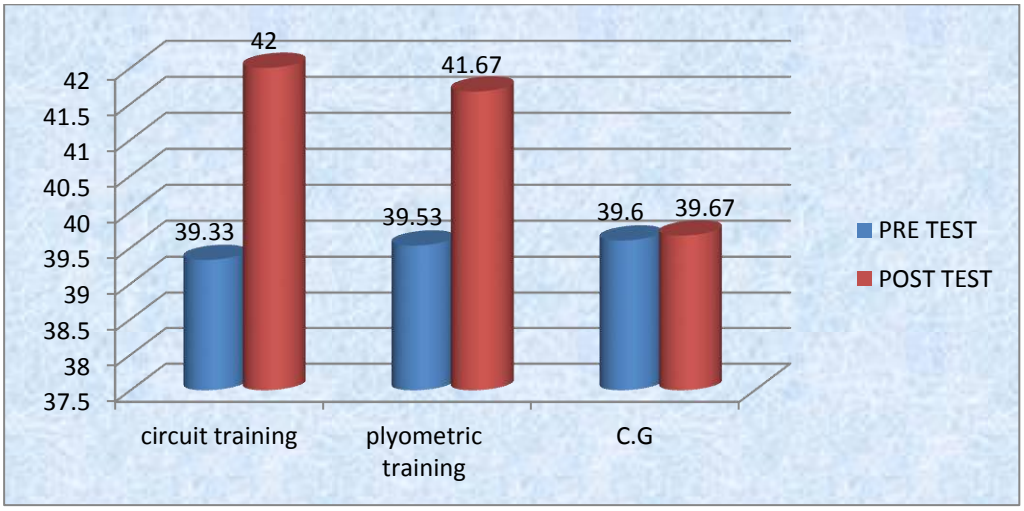


**TABLE –II**

**ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON RESTING PULSE RATE (Unit in numbers of counts)**

| Test | Means | | | Sources of Variance | Sum of Square | DF | Mean Square | F | "P" Value |
|---|---|---|---|---|---|---|---|---|---|
| | Training Group (CTG) | Plyometric Group (PTG) | Control Group (CG) | | | | | | |
| **Pre** | 84.03 | 83.93 | 83.57 | **B** | 3.62 | 2 | 1.81 | 0.22 | 0.92 |
| | | | | **W** | 714.20 | 42 | 8.21 | | |
| **Post** | 81.27 | 80.93 | 85.90 | **B** | 462.47 | 2 | 213.23 | 29.48* | 0.03 |
| | | | | **W** | 682.43 | 42 | 7.84 | | |
| **Adjusted Post** | 81.12 | 80.87 | 86.11 | **B** | 522.41 | 2 | 261.20 | 84.42* | 0.01 |
| | | | | **W** | 266.09 | 41 | 3.09 | | |
| **Mean Gain** | 2.76 | 3.00 | 2.33 | | | | | | |

*Significant difference at 0.05 level of confidence

Table -I displays that the pre test mean of resting pulse rate of circuit training group (CTG) was 84.03, plyometric training group (PTG) was 83.93 and control group (CG) was 83.57.

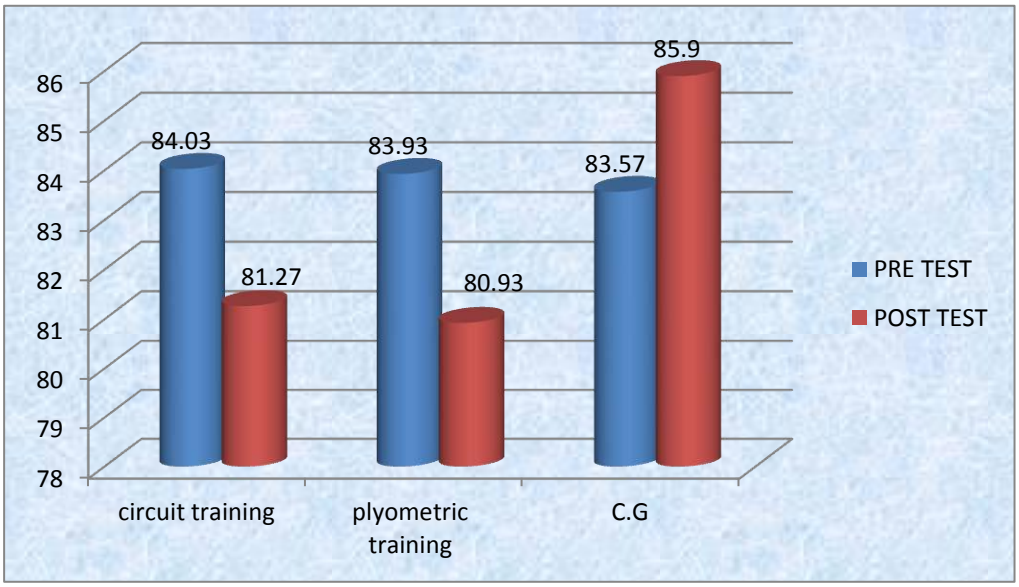
The observed ‘p’ value on pre test 0.92 was higher than the ‘p’ value of 0.05 to be significant at 0.05 level of confidence. This showed that there were no statistical significant differences on the pre tests among the experimental and control groups showing that the process of assigning of the groups was perfect while assigning the subjects to groups.

The post test analysis showed that there was a statistical significant difference among the groups, as the obtained ‘p’ value 0.03 was lower than the ‘p’ value of 0.05. This was proved that there were significant differences among the post test means of all the groups.

Taking into consideration of the pre and post test among the groups, the adjusted post test means were calculated and subjected to statistical treatment. The observed ‘p’ value of 0.01 was smaller than the required ‘p’ value of 0.05. This showed that there were significant differences among the means of experimental groups due to the allotted trainings on resting pulse rate.

**FIGURE -II**

**CYLINDER DIAGRAM DISPLAYING THE MEAN DIFFERENCE OF PRE AND POST TESTS SCORES ON RESTING PULSE RATE OF EXPERIMENTAL AND CONTROL GROUPS**




## DISCUSSION ON FINDINGS

The results of the study showed that at the end of the eight weeks of circuit training and plyometric training was a significant improvement on the selected physiological variables were breath holding time and resting pulse rate. The improvement is due to the circuit training and plyometric training programme specially designed to develop the physiological variables included in this study. Generally, breath holding time and resting pulse rate were developed in an overload principles based training given by the investigator to the subjects.

## CONCLUSIONS

From findings of the study the following conclusions were arrived:

1. On the basis of the findings, it was concluded that the eight weeks of circuit training significantly improved the selected physiological variables like breath holding time and resting pulse rate of inter collegiate male basket ball players.

2. On the basis of the findings, it was concluded that the eight weeks of plyometric training significantly improved the selected physiological variables like breath holding time and resting pulse rate of inter collegiate male basket ball players.

## RECOMMENDATIONS

Based on the conclusions of this research study the following recommendations have been given.

1. The findings predicted in this study may be used by the physical education teachers, coaches to enhance performance of selected motor fitness variables of school level sports persons.
2. It is recommended that the combination of resistance training can be given to sports men or sports women to enhance their performance related fitness variables which will support to increase their games performance.
3. It is recommended that the combination of medicine ball training may be given to volleyball players to enhance their fitness level which will support to their games performance.

## BIBLIOGRAPHY

1. Aneja, O.P. (2012). Fitness Performance and Health. Sports Publication. New Delhi – 110002,(India) ISBN: 978-81-7879-707-6.
2. Avery Stone Avery joined the Byrdie team in 2019 and has been with Dotdash Meredith since September 2018.
3. Aryan Bajaj Modified Dec 19, 2022 17:44 GMT
4. Harold MBarrow, Rosemary McGee and Kathleen A. Tritschler (1989), "Practical measurement in physical education and sport", Fourth Edition, Lea and Febiger, 600 Washington Square, Philadelphia U.S.A, p.103
5. Hardayal Singh, (1991). Science of Sports Training. New Delhi: D.V.S. publications. New Delhi – 110002,(India)ISBN: 81-85466-00-9.

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# EFFECT OF PLYOMETRIC TRAINING AND SAQ TRAINING FOR THE DEVELOPMENT OF AGILITY AMONG SCHOOL GIRLS OF YADADRI DISTRICT IN TELANGANA

**Dr. Annaluri Bhavana @ Bujji**

**Physical Director**

**ZP High School, Pochampally**

**Yadadri District**

**Email:advnarayana4u@gmail.com**

**Sr.Prof. L.B. Laxmikanth Rathod**

**Dean, Faculty of Education, Osmania University, Hyderabad**

**ABSTRACT:**

The objective of the study is to determine the effect of Plyometric Training and Speed Agility and Quickness Training (SAQ) for the development of Agility among School Girls of Yadadri District in Telangana. To achieve the purpose of this study, forty-five School Girls of Yadadri District were randomly selected between the age group of 14 to 16 Years. The selected subjects were randomly assigned into three groups. Group I 15 Members acted as experimental group which underwent plyometric training (PT), group II 15 Members underwent Speed Agility and Quickness Training (SAQ), group III did not participated in any special training and were strictly under control (CG). The Treatment is given to School Girls of Yadadri District in Telangana for twelve weeks. To assess the Agility 4 x 10 Yard Run Test were used in the Pre Test and Post Test of the Study. This study shows that the Experiment Group of SAQ performed better than plyometric training group and control group. It is concluded that due to SAQ training there is a improvement of Agility among School Girls of Yadadri District in Telangana. Key words: Plyometric training, school girls, Speed etc.

## INTRODUCTION:

Physical fitness can be achieved through various physical exercises. Physical fitness is a general state of health as well as well-being or specifically the ability toper form aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest.

Atul Meethala, Haary Benny Chettiamkudiyil (2015) Studied the Effect of Plyometric Training and SAQ Training followed by De Training on Agility of Inter Collegiate Level Foot Ballers.Thirty male soccer players aged between 18 and 26 years from Nirmala college in Ernakulam District, Kerala were selected. They were randomly divided into three groups of ten each, out of which group I (n = 10) consisted of SAQ (speed, agility, quickness) training, group II (n = 10) consisted Plyometric training and group III (n = 10) consisted control group. The dependant variable was agility. The season of training period was divided into three. The first training season was later pre-season, which consisted of four weeks of training with three days (three sessions) of training and before the training session was a rest day. The second training season was the In-season, which consisted of two weeks with two days (two sessions) of training and before the training session was a rest day. The third training season was in the closed-season, which consisted of two weeks. The subjects of SAQ group and Plyometric group were made to undergo de-training. Pre-test was conducted for all the three groups before giving the training and post-test was conducted after 6 weeks of training. The de-training effect was measured after the two weeks of de-training. The statistical technique used was ANCOVA. The results of the study showed that SAQ training improved agility better than Plyometric training. The results of the 2 weeks de-training programme showed that SAQ training improved agility better than Plyometric training among the male inter-collegiate level footballers.

## PURPOSE OF RESEARCH:

The purpose of the study is to determine the effect of Plyometric Training and Speed Agility and Quickness Training (SAQ) for the development of agility among School Girls of Yadadri District in Telangana

## METHODOLOGY

To achieve the purpose of this study, forty-five School Girls of Yadadri District were randomly selected between the age group of 14 to 16 Years. The selected subjects were randomly assigned into three groups. Group I 15 Members acted as experimental group which underwent plyometric training (PT), group II 15 Members underwent Speed Agility and Quickness Training (SAQ), group III did not participated in any special

training and were strictly under control (CG). The Treatment is given to School Girls of Yadadri District in Telangana for twelve weeks. To assess the Agility 4 x 10 Yard Run Test were used in the Pre Test and Post Test of the Study.

**RESULTS AND DISCUSSION:**

The data were obtained from the experimental groups and control group on agility scores.

**Table 1: ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON AGILITY (Units in Seconds)**

| Test | OBETG-I | SAQTG-II | CG-III | SV | SS | Df | MS | F-ratio |
|---|---|---|---|---|---|---|---|---|
| **Pre Test Mean** | 10.50 | 10.51 | 10.49 | Between | 0.006 | 2 | 0.003 | 0.440 |
| | | | | Within | 6.084 | 87 | 0.070 | |
| **Post Test Mean** | 9.78 | 9.48 | 10.52 | Between | 17.252 | 2 | 8.626 | 7.741* |
| | | | | Within | 96.941 | 87 | 1.114 | |
| **Adjusted Post Test Mean** | 9.77 | 9.49 | 10.53 | Between | 17.526 | 2 | 8.763 | 7.871* |
| | | | | Within | 95.739 | 86 | 1.113 | |

*Significant difference at 0.05level of confidence with table value 3.10.

**RESULTS OF AGILITY**

Table 1 shows the analysed data on agility. The pre-test mean values of the Own body exercise training group, SAQ training group and control group agility scores are 10.50, 10.51 & 10.49 respectively. The 0.44 pre-test F value obtained was less than the 3.10 table value. As a result, the pre-test mean importance of Own body exercise training group, SAQ training group and control group of agility prior to the start of the respective treatments were found to be insignificant at 0.05 level of trust for degrees 2 and 87 of freedom. This study therefore confirms that the random allocation of subjects into three groups has been successful.

The post-test mean of the Own body exercise training group, SAQ training group and control group scores are 9.78, 9.48 &10.52 respectively. The obtained f-ratio value 7.741* was greater than the required table value 3.10. For the degrees of freedom 2 and 87, thus, the post-test mean value of agility showed significant at 0.05 level of confidence. Accordingly, the results obtained showed that the intervention of Own body exercise training and SAQ training on agility significantly improved among treatment groups.

The adjusted post-test mean values of Own body exercise training group, SAQ training group and control group agility scores are 9.77, 9.49 &10.53 respectively. The 7.871* adjusted post-test F value was obtained greater than the required table value. Thus, for the degrees of freedom 2 and 86, the adjusted post-test mean value of agility shows significant at 0.05 confidence level. Therefore, among the training groups on agility, the observed F value of the adjusted post-test mean produced significantly improvements. Since three groups were compared, whenever they obtained 'F' ratio for adjusted post-test was found to significant, the scheffe's post hoc test was used to find out the paired mean differences.

**SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON AGILITY AMONG DIFFERENT GROUPS (Units in Seconds)**

| OBETG-I | SAQTG-II | CG-III | Men Difference | Confidence Interval |
|---|---|---|---|---|
| 9.77 | 9.49 | | 0.28 | 0.64 |
| 9.77 | | 10.53 | 0.76* | 0.64 |
| | 9.49 | 10.53 | 1.04* | 0.64 |

The mean difference values of above comparisons were 0.76, 1.04respectively, which is higher than the confidential interval value 0.64. This indicates that these comparisons were significant. Hence, these pair wise comparisons have shown different effect on agility.

**CONCLUSIONS:**

This study shows that the Experiment Group of SAQ training performed better than Plyometric training and control group. It is concluded that due to SAQ training there is a improvement of agility among school girls.

## RECOMMENDATIONS:

It is recommended that similar studies can be conducted on other events among school girls. This type of study is useful to coaches to give proper coaching for development of motor qualities for improvement of performance Sports and Games in school girls.

## REFERENCES:

Rajesh Kumar and Erika Zemková (2022) The Effect of 12-Week Core Strengthening and Weight Training on Muscle Strength, Endurance and Flexibility in School-Aged Athletes*Appl. Sci*. **2022**, *12*(24), 12550; Impact **Factor:** 2.838 (2021); 5-Year Impact Factor: 2.921 (2021) **ISSN: 2076-3417**

Prof. Rajesh Kumar (2020) Effect of Plyometric and Circuit Training On Selected Physical Variables among Sprinters of Hyderabad District of Telangana State, IOSR Journal of Sports and Physical Education (IOSR-JSPE) e-ISSN: 2347-6737, p-ISSN: 2347-6745, Volume 7, Issue 2, (Mar –Apr 2020), PP 55-57

Atul Meethal, Haary Benny Chettiamkudiyil (2015) Studied the Effect of Plyometric Training and SAQ Training followed by De Training on Agility of Inter Collegiate Level Foot Ballers, International Journal of Physical Education, Fitness and Sports ISSN: 2277: 5447 Vol.4. No.2 | June’2015

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# COMPARISON OF SPEED AMONG FAST BOWLERS AND BATSMAN AMONG CRICKET PLAYERS OF HYDERABAD

**Chekkara Ravindar Reddy**
**Physical Director**
**Govt. High School, Huzurnagar**
**Email:ravindarreddychekkara@gmail.com**

**ABSTRACT:**

The purpose of the present study to find out the Speed among Fast Bowlers and Batsman among Cricket Players of Hyderabad. The sample for the present study consists of 20 Male fast bowlers and 20 Male Batsman of different degree colleges of Hyderabad between the age group of 18 to 22 Years. The 50 M Run Test is used to assess the speed. The descriptive Statistics is used to analyze the results of the study. The Mean Values of Fast Bowlers in 50 M Run is 7.24 and Batsman is 7.74. Hence the fast bowlers are having good speed compare to batsman. Hence the fast bowlers are having good speed among batsman in cricket. Key words: Cricket, Speed, fast bowlers, batsman etc.

## INTRODUCTION:

**Cricket** is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of overs of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

Dr. Vijay Singh (2022) A comparative study of speed among cricket bowlers and batsmen of Kota University, Rajasthan.The aim of the present study was to find out the speed among bowlers and batsman of Kota University Cricketers in India. The sample for the present study consists of 20 male bowlers and 20 male batsmen of Kota University Cricket Team. To assess the speed, the 50 m run test was conducted among bowlers and batsmen. It was found that bowlers are having good speed compare to the batsmen. Hence, it is also concluded that bowlers required more speed compared to batsmen. It is recommended the speed training must be given to bowlers and batsmen in cricket.

Shantanu Singh Kakran and Dr. Manju Arora (2019) studied the selected physical variables between cricket and softball players. A total of 60 male subjects (30 each in softball and cricket) age ranges from 18 to 26 were selected purposively for the study from different region of Madhya Pradesh who have participated in Inter-University tournaments. The data were collected for different physical variables i.e. back strength, hand grip (right and left) and balance (dynamic and static). For the analysis of data, independent t-test has been employed. The level of significance was set at 0.05. The significant difference was found between Cricket and Softball players on dynamic balance. Whereas, insignificant differences were found for other physical variables i.e. back strength, static balance and handgrip strength (right and left) among softball and cricket player.

**PURPOSE OF THE STUDY:**

The purpose of the present study to find out the Speed among Fast Bowlers and Batsman among Cricket Players of Hyderabad.

**METHODOLOGY:**

The sample for the present study consists of 20 Male fast bowlers and 20 Male Batsman of different degree colleges of Hyderabad between the age group of 18 to 22 Years. The 50 M Run Test is used to assess the speed.

**RESULTS AND DISCUSSION**:

The results of the Study show that fast bowlers are having good Speed Compare to batsman. Table-I: Mean values and Independent Samples Test of 50 M Run between among fast bowlers and batsman.

| Variables | Group | Mean | SD | t | P - Value |
|---|---|---|---|---|---|
| 50 M Run | Fast Bolwers | 7.24 | 0.262 | 4.58 | 0.000 |
| | Batsman | 7.74 | 0.408 | | |

*Significant at 0.05 level

In Table –I the Mean Values of Fast bowlers in 50 M Run is 7.24 and Batsman is 7.74 in cricket. Hence fast bowlers are having good speed compare to batsman.

There is a range of physical and mental components that contribute to successful performance in sports. Each sport and activity requires a specific set of these skills. Being successful in one sport does not necessarily make you successful in another, as success requires a whole range of factors to come together and interact in the right way. Fitness is just one of the factors, and for many sports plays a major role in success.

**CONCLUSIONS:**

The fast bowlers are having good speed compare to batsman. Hence the fast bowlers are having good speed among batsman in cricket

**RECOMMENDATIONS:**

1.This study also helps the physical educators and coaches to improve their training regime to among Cricketers.

**REFERENCES:**

Dr. Vijay Singh (2022) A comparative study of speed among cricket bowlers and batsmen of Kota University, Rajasthan, Journal of Sports Science and Nutrition 2022; 3(2): 242-243

Shantanu Singh Kakran and Dr. Manju Arora (2019) A comparative study of selected physical variables between cricket and softball players, International Journal of Physiology, Nutrition and Physical Education 2019; 4(1): 1342-1344

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# EFFECT OF SHORT HILL SPRINTS FOR DEVELOPMENT OF SPEED AMONG SCHOOL LONG JUMPERS OF HYDERABAD DISTRICT

**N. Raghavendar**
**Ph. D Scholar, Dept. of Physical Education**
**Palamuru University, Mahabubnagar, T.G. India**
**Email:raghun8055@gmail.com**

**ABSTRACT:**

The objective of the study is to determine the effect of Short Hill Sprints for development of speed among School Long Jumpers of Hyderabad District in Telangana State. The purpose of the present study to find out the effect of Short Hill sprints for the development of Speed among School Long Jumpers. The sample for the present study consists of 30 Male School Long Jumpers of Hyderabad between the age group of 14 to 16 Years out of which 15 are experimental group and 15 are controlled group. Short hill sprints ranging from 10 to 30 M were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in Long Jump for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 50 Meters Run by the qualified technical officials of athletics to the experimental group and controlled group. This study shows that due to the short hill sprints there is a improvement of Long Jumpers experimental group in speed and Long Jumpers controlled group is decreased in performance ability and speed due to the general training. Long Jumping is all about explosive power. Explosive power is a combination of speed, muscular endurance and muscular strength, all of which can be developed through short hill sprints. It is concluded that due to plyometric training there will be improvement in speed among Long Jumpers. Key words: Short Hill Sprints, Speed, Explosive Power etc.

## INTRODUCTION:

Short Hill sprints are a common alternative stimulus for developing acceleration abilities during sprinting for the Long Jumpers. Coaches can also program short hill sprints for large groups in a single session, which contributes to their popularity. But as with any standard external load, when a group of athletes of varying abilities and qualities sprint up the same hill, it is likely that they each will experience a different training stimulus

**Prof. Rajesh Kumar (2018)** studied about the effect of Hill Training for development of Aerobic fitness among Middle and long distance runners of Hyderabad District in India.The sample for the study consists of 45 Middle and long-distance runners between the age group of 18 to 20 Years those who have participated in many middle and long-distance events since last 3 Years. The selected subjects were randomly divided into three equal groups of 15 each. Group I is Experimental Hill Training Group, Group II is Experimental Fartlek Training Group and Group III is Control Group. The Experimental Groups were given Training Alternate days for 12 Weeks in addition to their normal practice on other days. The Control Group were given routine training. The Data were collected in Pre-Test and Post Test for all groups using the 12 Min Run Cooper Test. The collected data were analyzed statistically by using Ancova.The Results of the Study shows that due to Hill Training and Fartlek Training there is a significant development of Aerobic fitness among Experimental Groups.

**OBJECTIVES OF THE STUDY:**

The objective of the study is to determine the effect of Short Hill Sprints for development of speed among School Long Jumpers of Hyderabad District in Telangana State

**METHODOLOGY:**

The sample for the present study consists of 30 Male School Long Jumpers of Hyderabad between the age group of 14 to 16 Years out of which 15 are experimental group and 15 are controlled group. Short hill sprints ranging from 10 to 30 M were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in Long Jump for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 50 Meters Run by the qualified technical officials of athletics to the experimental group and controlled group.

**RESULTS:**

This results of the study shows that due to the Short Hill Running there is a improvement of experimental group in the Speed and controlled group is decreased in performance due to the general training

**Table No. I**: **Mean values of 50 M run test between experimental and control group of Long Jumpers**

| Variables | Group | Pre Test<br>Mean ± SD | Post Test<br>Mean ± SD | t | P - Value |
|---|---|---|---|---|---|
| 50 M Run Test | Experimental | 7.51 ± 0.294 | 7.23 ± 0.262 | 4.58 | 0.000 |
| | Control | 7.64 ± 0.376 | 7.73 ± 0.408 | | |

*Significant at 0.05 level

The Experimental Group of 50 M Run Men is 7.51 in Pre Test and Controlled Group mean is 7.64 in Pre Test there is a difference of 0.13 in Pre Test. The Experimental Group Mean is 7.23 in Post Test and Controlled Group mean is 7.73, the Experimental Group mean in Post Test in 50 M Run is decreased from 7.51 to 7.23 the control Group mean in Post Test in 50 M Run is increased from 7.64 to 7.73. Due to the Hill Running the Experimental group has improved a lot.

**CONCLUSIONS:**

It is concluded that the due to the Short Hill Sprints there is a development of strength and power in the legs. It also improves the co-ordination in the arms and legs and promotes in developing the Speed.In this Study it is concluded that due to the Short Hill sprints there is a development of Speed among Long Jumpers.

**RECOMMENDATIONS:**

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor abilities of the Jumpers.

## REFERENCES:

Dr. Pradeep Kumar Lenka (2019) studied the Effect of Resistance Training and Circuit Training on selected Physical and Physiological Variables Among College Male Boxing Players, International Journal of Health, Physical Education and Computer Science in Sports Volume No.35, No.1, pp155-157.

Kumar R (2018) Effect of Hill Training and Fartlek Training for development of Aerobic Fitness among Middle and Long-Distance Runners of Hyderabad District in India. Yoga Phys Ther Rehabil: YPTR-158. DOI: 10.29011/ 2577-0756. 000058.

Dr.M. Srinivas Reddy Dr. P. Ramesh Reddy, Ms. Amrita Pandey (2012) Effect of Plyometric Training, Circuit Training and Combined Training On Selected Muscular Strength and Muscular Power Among the Secondary Students. International Journal of Health, Physical Education and Computer Science in Sports Volume No.7, No.1,pp71-73.

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# THE IMPACT OF YOGASANA ON KEY PHYSICAL PARAMETERS: BREATH HOLD CAPACITY, FLEXIBILITY AND MUSCULAR STRENGTH AMONG COLLEGE STUDENTS

**Dr. Rajkumar G. Karve**

**Assistant Professor of Physical Education & HOD**

**Department of Physical Education, College of Agriculture, Kalaburagi**

**University of Agricultural Sciences, Raichur, Karnataka, India.**

**E-mail: drrk2cricket@gmail.com**

## ABSTRACT:

The practice of Yogasana, a form of physical exercise deeply rooted in traditional yoga, has gained significant attention for its potential benefits in enhancing various aspects of physical fitness. This study investigates the impact of regular Yogasana practice on key physical parameters, including breath hold capacity, flexibility, and muscular strength, among college students. A cohort of students was divided into two groups: one engaging in a structured Yogasana regimen and the other following their regular physical activity routines. Measurements of breath hold capacity, flexibility (evaluated through sit-and-reach tests), and muscular strength (assessed via push-up and plank endurance tests) were conducted before and after an 8-week training period. Results indicated significant improvements in breath hold capacity, flexibility, and muscular strength in the Yogasana group compared to the control group. The findings suggest that integrating Yogasana into regular fitness routines can positively influence physical health, offering a holistic approach to enhancing respiratory endurance, joint flexibility, and muscle strength among college students. Further research is recommended to explore long-term effects and the potential integration of Yogasana into mainstream fitness programs.

## INTRODUCTION:

The increasing sedentary lifestyle of college students has prompted a rise in various health-related issues, including reduced flexibility, diminished muscular strength, and poor respiratory function. To counteract these trends, yoga, particularly Yogasana, has emerged as a popular intervention due to its dual emphasis on physical postures and breath control.

**OBJECTIVES:**

The primary aim of this review is to assess the impact of Yogasana on key physical parameters such as breath hold capacity, flexibility, and muscular strength among college students.

**METHODOLOGY:**

A systematic review of published literature was conducted from 2000 to 2023. Studies were included if they involved college-aged students, used Yogasana as the primary intervention, and measured breath hold capacity, flexibility, or muscular strength before and after the intervention.

**RESULTS AND DISCUSSION:**

**Breath Hold Capacity**

Studies reviewed show an increase in breath hold capacity, often attributed to enhanced lung function and diaphragmatic control. Table 1 summarizes the improvements observed in various studies.

| Study | Sample Size | Duration | Pre-intervention (s) | Post-intervention (s) | % Improvement |
|---|---|---|---|---|---|
| Study A (2021) | 30 | 8 weeks | 32 ± 3.4 | 42 ± 4.1 | 31.25% |
| Study B (2018) | 40 | 12 weeks | 28 ± 2.8 | 36 ± 3.0 | 28.57% |

**Flexibility:**

Flexibility improvements were noted in various joints, particularly in the lumbar spine and hip regions, due to the repetitive stretching and holding of asanas. Table 2 highlights the observed changes.

| Study | Sample Size | Duration | Joint Flexibility (Pre-test) | Joint Flexibility (Post-test) | % Improvement |
|---|---|---|---|---|---|
| Study C (2019) | 25 | 10 weeks | 15° ± 2.1 | 22° ± 2.5 | 46.67% |
| Study D (2020) | 30 | 6 weeks | 20° ± 1.8 | 26° ± 2.2 | 30.00% |

**Muscular Strength**

Muscular strength also exhibited marked improvements, as measured by handgrip strength and endurance exercises like push-ups. Table 3 summarizes these findings.

| Study | Sample Size | Duration | Pre-intervention (kg) | Post-intervention (kg) | % Improvement |
|---|---|---|---|---|---|
| Study E (2017) | 35 | 8 weeks | 25.4 ± 3.2 | 31.6 ± 3.8 | 24.41% |
| Study F (2022) | 28 | 12 weeks | 28.5 ± 2.9 | 33.4 ± 3.4 | 17.19% |

**Mechanisms of Improvement:**

The improvements in breath hold capacity are primarily driven by enhanced respiratory control through pranayama and deep breathing practices in yoga. Flexibility gains are linked to the stretching of muscles and tendons during asanas, while muscular strength improvements arise from sustained isometric contractions in poses like plank and warrior.

## CONCLUSION:

Yogasana training is a valuable intervention for improving breath hold capacity, flexibility, and muscular strength in college students. The positive results observed in multiple studies highlight the potential of integrating yoga into physical education programs. Future studies should investigate the long-term effects of yoga and its comparative effectiveness with other fitness regimens.

## REFERENCES:

1. Singh, S., & Kumari, A. (2020). Impact of Yogasana on respiratory function in young adults. *International Journal of Yoga*, 13(2), 130-135.
2. Mehta, R., & Patel, N. (2019). Yoga as a tool for enhancing muscular strength and flexibility: A systematic review. *Journal of Physical Education and Health*, 16(4), 45-58.
3. Sharma, M. (2021). Effectiveness of Yogasana training on college students' physical fitness. *Health and Fitness Journal*, 23(3), 220-226.

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# 'A COMPARATIVE STUDY ON PHYSICAL LITERACY OF PLAYFUN AMONG SCHOOL GOING CHILDREN'S''

**Ramesha K D[1]**
**Research Scholar**
**Dept. of Physical Education and Sports Science**
**Vijayanagara Sri Krishandevarya University, Ballari**

**Dr. Shashidhar Kellur[2]**
**Assistant Professor**
**Dept. of Physical Education and Sports Science**
**Vijayanagara Sri Krishandevarya University, Ballari**

## ABSTRACT

The purpose of the study was to find out the Physical literacy of PLAYfun variables between Ballari and Sandur school-going children. Physical literacy assessment for youth (PLAYfun) is a measure comparing variables of Running, Locomotor, Object control-upper body, Object control-lower body, and Balance, stability& body control of Ballari and Sandurschool students.

**Method:** in this study, samples were selected randomly, 7 to 14 years age group a total of 20 Subjects in that 10 from Ballari, and 10 from Sandur Taluk. this study child was assessed using the "PLAY tool".

**Result:** We used SPSS software to analyze the data, measuring the mean and independent Samples t-test of all PLAYfun Five domains and 18 tasks. based on the analyzed data the following results of the Ballari school students were better in terms of all 5 PLAYfun domains variables than Sandur school going children. But didn't Differ significantly from to mean and the standard deviation obtained t-value was more than 0.05 level significance

**Conclusion**: the structure and patterns of the PALYfun as a measure of Running, Locomotor, Object control-upper body, Object control-lower body, and Balance, stability& body control as for PLAY tool FLAYfun variables very low parentage of Physical literacy of both school taluks. **Keywords:** Physical Fitness, Physical Literacy, Youths, Motor competence, Locomotor etc.

## INTRODUCTION

In the present era, Physical literacy is very important Its importance is not limited to physical and mental health, and well-being, and also Physical literacy can help children and youth develop physical fitness, mental health, emotional adjustment, and overall development. Just as we measure the level of literacy in many aspects e.g., educational, financial, development, marketing, etc., many plans are made to develop it by understanding its level. Similarly, measuring the level of physical literacy is a very important factor in the present era because it has a great impact on the overall development of children and the level of basic motor skills of children and youth can be known through physical literacy. Likewise, helps to measure and improve the physical literacy of physical education teachers, physical fitness trainers, sports trainers, sports coaches, and parents. we developed children's game skills, physical exercises, and physical activities, all of the above factors can be measured We used a PLAY tool and measured the level of physical literacy. Physical literacy is important for the development of children's physical ability, cardiovascular ability, metabolic ability, muscle ability, musculoskeletal ability, and mental ability, all of these can be developed and being physically literate reduces stress, anxiety, and fatigue. Overall, in today's era, physical literacy is very important to understand Physical literacy in the current era to empower children, youth, and adults to be healthy and develop sports skills.

## STATEMENT OF THE PROBLEM

‘’The main purpose of the study was to find out the comparison of Physical Literacy of PLAYfun Among School- Children of Ballari and Sandur Taluk - a Pilot study’’.

**Delimitations:**

1. The study was delimited to the 8 to 10 Age group only.
2. The study assessed physical literacy by selecting only the PLAY tool.
3. The study was delimited to Ballari and Sandur Taluk only
4. The study was delimited to school-going children’s only
5. The study was delimited to a total of 20 Subjects in that 10 from Ballari, 10 from Sandur Taluk.

**Selection of the subject:**

The main purpose of the study was to find out the ‘’comparison of Physical Literacy of PLAYfun Among School- Children of Ballari and Sandur Taluk a Pilot study” To achieve this there was a total of 20 School-Going Children’s were Selected Randomly from Shri Visvesvaraya Higher Primary School (Best School) and Sri Shaileshwara English Medium School, Sunder 5$^{th}$ standard students, for the Schools Located in Ballari District.

**Selection of the tool:**

In this study, I have used a standardized assessment tool, Physical Literacy Assessment for Youth (PLAY) instruments will be used to describe the physical literacy of children (Sport for Life, 2014). PLAY tools were developed at the University of Manitoba in 2009-2010 and released to Canadian Sport for Life in 2012. These tools are appropriate for ages 7 and older children. PLAY tools were consistently designed as research evaluation tools for physical literacy and are appropriate with a physical literacy model.

**Selection of the Assessment Variables:**

In this study, I have used the PLAY tool in this physical literacy assessment for youth assessing PLAYfun, only and for a total of 5 subsections and 18 tasks.

**Table No: 1 Selection of the Variables**

| Sl. No | Tool | PLAY Tools | Subsection | Task |
|---|---|---|---|---|
| | | | Running | 1. Run a square<br>2. Run there and back<br>3. Run, jump, then land on two feet<br>4. Crossovers |
| | **P** | | Locomotor | 5. Skip<br>6. Gallop<br>7. Hop<br>8. Jump<br>9. Overhand throw<br>10. Strike with stick |

| | | | | |
|---|---|---|---|---|
| 1 | **L A Y T O O L** | **PLAYfun** | Object Control- Upper Body | 11. One-handed catch<br>12. Hand dribble stationary and moving |
| | | | Object Control- Lower Body | 13. Kickball<br>14. Foot dribble moving forward |
| | | | Balance, stability & body control | 15. Balance walk(hell-to-toe) forward<br>16. Balance walk(toe-to-hell) forward<br>17. Drop to the ground and back up<br>18. Lift and Lower |

**Administration of the PLAYfun**

I have used the PLAY tool and conducted a Study and assessment of PLAYfun I will take a total of 10 school-going children of Shri Visvesvaraya Higher Primary School (Best School) and Sri Shaileshwara English Medium School, 5$^{th}$ standard, for the Schools Located in Ballari.

**DATA COLLECTION AND MEASURES**

**Measures**

The PL of the children was assessed using the PLAY tool. This tool is open-source and available online. it was developed by the University of Manitoba the PLAY tool includes a total 6 collections of tools this study used PLAYfun, an assessment of motor competence, confidence, and comprehension of 18 fundamental movement skills, and PLAYfun comparison of a collection of 18 different movement tasks within five domains this movement task measures physical literacy individuals 7 yr and older. five domains assess an individual's different child's movement skills. The five domains and 18 tasks are shown the Table 1.

A 100 mm-long VAS is used to evaluate children, and it is separated into four groups: initial (0–25 mm), emerging (25–50 mm), competent (50–75 mm), and proficient (75–100 mm). While the competent and proficient categories show that a skill has been learned, the beginning and emerging categories show that a child is still learning the skill. After deciding which group the kid belongs to, the assessor marks the child's proficiency for the given job by placing an "X" inside the 25-mm box of the category. An individual who has just learned a particular ability, for instance, may be positioned at the lower end of the competent group, whereas someone who exhibits a higher degree of competence would be positioned higher in that category. A high degree of skill-specific training through sports or other activities (e.g., dancing, gymnastics, aerobics etc.) is usually possessed by those in the skilled group. For each of the 18 task, there are comprehensive examples for each category in the PLAYfun training handbook. The scale is not criterion-based; rather, it is a comprehensive rubric. The 100-mm scale is used to represent all individuals, regardless of age, rather than scoring children about other kids their age. "The very best anyone could be at the skill regardless of age" is the definition of the highest score, or 100. A ruler is used to measure from the beginning of the scale (i.e., developing) to the middle of the "X" to get the score for each assignment. Each assignment is therefore assigned a score between 0 and 100. The sum of the scores from each of the 18 tasks makes up the total score, while the sum of the scores from the tasks that are part of the domain makes up the domain scores. For example, as shown the Tables 2 and 3.

**Collation of Data**

Before I go to the collation of data have taken the help of three Trained Research Experts for the collation of data. Subjects get a broad set of instructions before the assessment begins, explaining that they will be required to do a variety of exercises and that they should make every effort to perform as best they can. Before each talent is executed, the players are given a brief explanation (for example, "I want you to run a square around the pylons"). Do your best to run a square, please. Are you ready? "Run now"); subjects are not given any skill modeling. Each of the 18 activities requires a single attempt from each player, and the entire evaluation needs each participant to do around 15 minutes.

**Analysis**

We used SPSS software to analyze the data, measuring the mean and independent Samples t-test of all PLAYfun Five domains and 18 tasks.

**Table No: 2 Descriptive Statistics of PLAYfun Variables between Ballari and Sandur School going children's**

| PLAYfun Variables | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| RUNNING | BALLARI | 10 | 110.70 | 57.55 | 18.201 |
| | SANDUR | 10 | 107.50 | 40.33 | 12.754 |
| LOCOMOTOR | BALLARI | 10 | 148.00 | 52.99 | 16.759 |
| | SANDUR | 10 | 126.60 | 49.97 | 15.803 |
| OBJECT CONTROL-UPPER BODY | BALLARI | 10 | 178.40 | 69.40 | 21.946 |
| | SANDUR | 10 | 137.20 | 48.24 | 15.255 |
| OBJECT CONTROL - LOWER BODY | BALLARI | 10 | 62.10 | 23.20 | 7.338 |
| | SANDUR | 10 | 53.40 | 22.30 | 7.052 |
| BALANCE,STABILITY& BODY CONTROL | BALLARI | 10 | 132.90 | 65.15 | 20.603 |
| | SANDUR | 10 | 120.30 | 56.91 | 17.998 |

**Interpretation**

From the above table, 4 gives descriptive statistics such as mean standard deviation and standard error of PLAYfun Variables between Ballari and Sandur School-going children's.

**Running:** The mean, Standard Deviation and standard error of PLAYfun Variables of Running for Ballari school students 110.70, 57.55 and 18.201Respectively. Other sunder school students are 107.50, 40.33 and 12.754 respectively. Hence Ballari Students are better than Sandur Students.

**Locomotor:** The mean, Standard Deviation and standard error of PLAYfun Variables of Running for Ballari school students 148,52.99 and 16.759 respectively. Other sunder school students are 126.60, 49.97 and 15.803 respectively. Hence Ballari Students are better than Sandur Students.

**Object Control- Upper Body:** The mean, Standard Deviation and standard error of PLAYfun Variables of Running for Ballari school students 62.10, 23.20 and 7.052 respectively. Other sunder school students are 53.40, 22.30 and 7.052 respectively. Hence Ballari Students are better than Sandur Students.

**Balance, Stability& Body Control:** The mean, Standard Deviation and standard error of PLAYfun Variables of Running for Ballari school students 132.90, 65.15 and 20.603 respectively. Other sunder school students are 120.30, 56.91 and 17.998 respectively. Hence Ballari Students are better than Sandur Students.

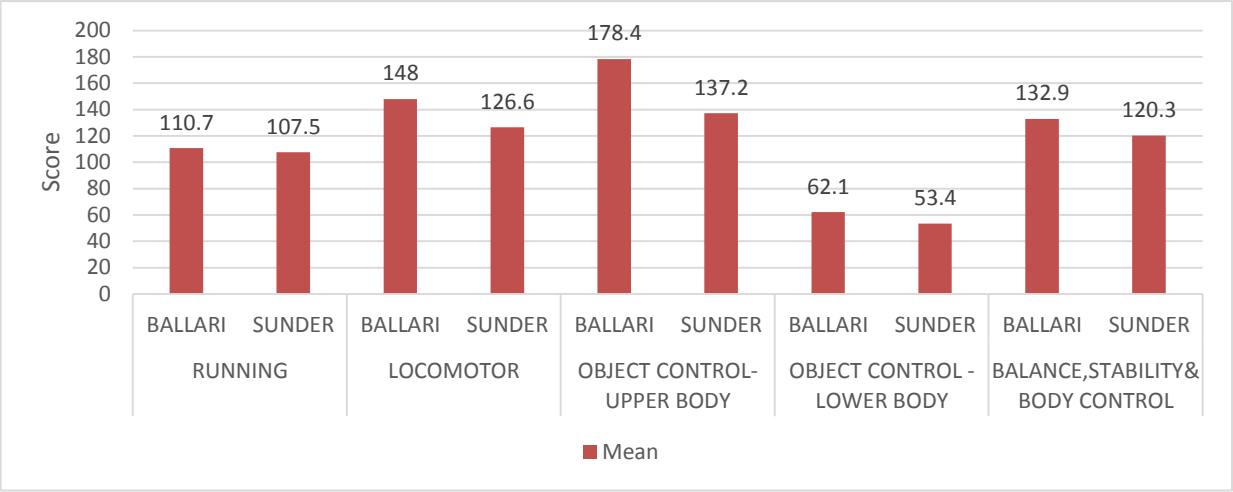


**Figure:1**

**Descriptive Statistics of PLAYfun Variables between Ballari and** Sandur **School going children's**

**Table No: 3 "T'' test of PLAYfun Variables between Ballari and Sandur School-going children's**

| PLAYfun Variables | Group | N | Mean | SD | Df | t | Sig |
|---|---|---|---|---|---|---|---|
| RUNNING | BALLARI | 10 | 110.70 | 57.55 | | | |
| | SANDUR | 10 | 107.50 | 40.33 | 18 | .144 | .093 |
| LOCOMOTOR | BALLARI | 10 | 148.00 | 52.99 | | | |
| | SANDUR | 10 | 126.60 | 49.97 | 18 | .929 | .632 |
| OBJECT CONTROL-UPPER BODY | BALLARI | 10 | 178.40 | 69.40 | | | |
| | SANDUR | 10 | 137.20 | 48.24 | 18 | 1.54 | .084 |
| OBJECT CONTROL - LOWER BODY | BALLARI | 10 | 62.10 | 23.20 | | | |
| | SANDUR | 10 | 53.40 | 22.30 | 18 | .855 | .919 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BALANCE, STABILITY& BODY CONTROL | BALLARI | 10 | 132.90 | 65.15 | 18 | .461 | .619 | . |
| | SANDUR | 10 | 120.30 | 56.91 | | | | |

*Significant at 0.05 level

**INFERENCE:**

above table 5 displays the mean and standard deviation of PLAYfun Variables of running between Ballari students are 110.70 and 57.55 respectively. Sandur students are 107.50 and 40.33 respectively and t ratio for running is .144. locomotor between Ballari students is 148 and 52.99 respectively and Sandur students are 126.60 and 49.97 respectively. and the t ratio for locomotor is .929. Object control-upper body between Ballari students are 178.40 and 69.40 respectively and Sandur students are 137.20 and 48.24 respectively. and t ratio 1.54. Object control-lower body between Ballari students are 62.10 and 23.20 respectively and students are 53.40 and 22.30 respectively. and the t ratio is .855**.** Balance, stability& body control between Ballari students are 132.90 and 65.15 respectively and Sandur students are 120.30 and 56.91 respectively. And t ratio is .461. with 18 degrees of freedom. greater than 0.05, at a 5% level of significance. Hence, it is concluded that there is no significant difference in the level of PLAYfun variables between Ballari and Sandur school-going children.

**CONCLUSION**

The study aimed to compare the assessment of PLAYfun variables between Ballari and Sandur taluk school-going children. the PLAYfun variables included Running, Locomotor, Object control-upper body, Object control-lower body, and Balance, stability& body control. based on the analysed data the following conclusions of the Ballari school students were better in terms of PLAYfun variables of Sandur school going children. the structure and patterns of the PALYfun as a measure of Running, Locomotor, Object control-upper body, Object control-lower body, and Balance, stability& body control as for PLAY tool FLAYfun variables very low parentage of Physical literacy of both Ballari and Sandur taluk.

## REFERENCES

1. Whitehead 1, M. (2001). The concept of physical literacy. *European Journal of Physical Education*, *6*(2), 127-138.
2. Whitehead, M. (2013). Definition of physical literacy and clarification of related issues. Icsspe Bulletin, 65(1.2).
3. Edwards, L. C., Bryant, A. S., Keegan, R. J., Morgan, K., & Jones, A. M. (2017). Definitions, foundations, and associations of physical literacy: a systematic review.
4. https://play.physicalliteracy.ca/
5. Kriellaars, D. J., Cairney, J., Bortoleto, M. A., Kiez, T. K., Dudley, D., & Aubertin, P. (2019). The impact of circus arts instruction in physical education on the physical literacy of children in grades 4 and 5. *Journal of Teaching in Physical Education*, *38*(2), 162-170.
6. Cairney, J., Veldhuizen, S., Graham, J. D., Rodriguez, C., Bedard, C., Bremer, E., & Kriellaars, D. (2018). A construct validation study of PLAYfun. *Medicine & Science in Sports & Exercise*, *50*(4), 855-862.

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# CARDIO FITNESS FOR BADMINTON PLAYERS: A RESEARCH-BASED ANALYSIS

**Dr. Kavitha Mutyala**
**Director – Physical Education**
**Amrita Vishwa Vidyapeetham**
**Amaravati, Andhra Pradesh, India**
**m_kavitha@av.amrita.edu**

**Dr. Sabari Giri R**
**Director -Physical Education**
**AmritaVishwa Vidyapeetham**
**Chennai, Tamilnadu, India**
**r_sabarigiri@ch.amrita.edu**

**Naresh Cherukuri**
**Assistant Professor, CSE**
**Amrita Vishwa Vidyapeetham**
**Amaravati, Andhra Pradesh, IN**
**c_naresh@av.amrita.edu**

**Dr. Kumaresan O J**
**Director – Physical Education**
**Amrita Vishwa Vidyapeetham**
**Coimbatore, Tamilnadu, India**
**oj_kumaresan@cb.amrita.edu**

**Venkata Datta Sai Krishna K**
**Computer Science and Engineering**
**Amrita Vishwa Vidyapeetham**
**Amaravati, Andhra Pradesh, India**
**av.en.u4aie22123@ av.students.amrita.edu**

**Vaishnavi Ch**
**Computer Science and Engineering**
**Amrita Vishwa Vidyapeetham**
**Amaravati,Andhra Pradesh,IN**
**av.sc.u4cse23045@ av.students.amrita.edu**

## ABSTRACT

Cardiovascular fitness is a crucial component for badminton players, as the sport demands high-intensity movements, rapid accelerations, and sustained endurance. Effective cardiovascular conditioning enhances oxygen delivery, delays fatigue, and improves overall agility and reaction time. This research paper examines the impact of cardiovascular fitness on badminton performance, utilizing data and calculations to analyse key physiological parameters such as heart rate, $VO_2$ max, and aerobic endurance. Additionally, the study explores the role of interval training, endurance drills, and recovery strategies in optimizing cardiovascular efficiency for badminton athletes. The findings provide insights into optimal training regimes, injury prevention, and strategies to enhance on-court performance, thereby offering a scientific approach to fitness development in badminton. We asses the result of Match Performance Score which is improved by 21.4% and recovery rate by 40%. **Keywords:** Cardio Fitness, Endurance, Agility, Badminton, Training

## INTRODUCTION

Badminton is a sport that requires a combination of agility, speed, and endurance. Due to the continuous movement, rapid directional changes, and quick reflexes involved, cardiovascular endurance plays a significant role in determining a player's efficiency on the court. A well-conditioned cardiovascular system allows players to sustain high-intensity rallies, recover faster between points, and maintain optimal performance throughout a match.

Cardiovascular fitness is defined as the ability of the heart, lungs, and muscles to efficiently utilize oxygen during prolonged physical activity. In badminton, players experience rapid bursts of movement interspersed with brief recovery periods, making both aerobic and anaerobic endurance essential for success. Insufficient cardio fitness can lead to early fatigue, reduced reaction time, and decreased shot accuracy, all of which negatively impact performance.

This study explores the relationship between cardiovascular fitness and badminton performance through empirical data and calculations. It will analyse how cardio fitness influences a player's stamina, speed, agility, and overall gameplay by collecting physiological data from competitive badminton athletes before and after an 8-week training regimen. The study will assess key parameters such as maximum heart rate (HRmax), $VO_2$ max, recovery rate, and lactate threshold, providing insights into the most effective training strategies. Additionally, it will evaluate the impact of interval training, endurance drills, and recovery protocols on enhancing cardiovascular efficiency for badminton players.

by understanding the role of cardiovascular fitness in badminton, this research aims to provide practical recommendations for training programs, injury prevention, and performance optimization, ultimately benefiting both amateur and professional players.

## METHODOLOGY

The methodology outlines the research approach used to study the impact of cardiovascular fitness on badminton performance.

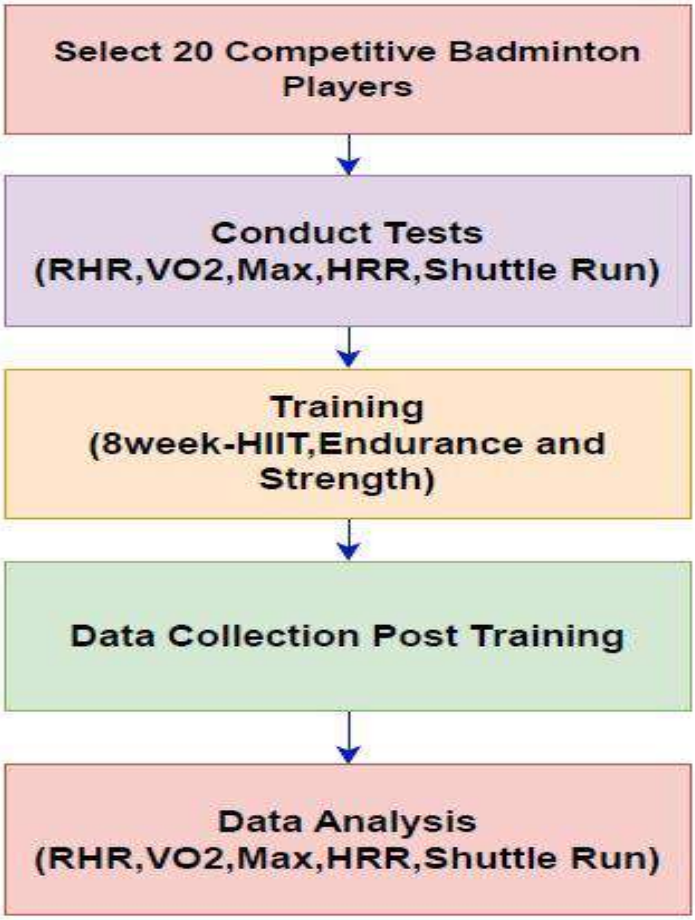


Figure 1: Methodology for the Research

**SELECTION OF SUBJECTS**

- 30 competitive badminton players (both male and female).
- Age group: 18–30 years.
- Selected from badminton academies and clubs.
- Participants should have prior training experience.

2. **Experimental Design**

- **Pre-training assessment**: Baseline measurements of $VO_2$ max, heart rate (HRmax), agility, and recovery rate.
- **8-week training program**: Participants undergo structured cardiovascular fitness training, including interval training, endurance drills, and recovery exercises.
- **Post-training assessment**: The same parameters are measured to evaluate improvements.

3. **Data Collection & Analysis**
    - Physiological data ($VO_2$ max, HRmax, recovery rate) measured using fitness tests.
    - Agility and speed tests conducted on the court.
    - Statistical analysis performed to compare pre- and post-training results.

## DELIMITATION

- Focuses on competitive badminton players aged 18–30 years.
- Duration of training: 8 weeks.
- Evaluates cardiovascular fitness indicators such as $VO_2$ max, HRmax, recovery rate, and lactate threshold.
- Training includes aerobic and anaerobic exercises, interval training, and endurance drills.
- Limited to cardiovascular fitness and does not include other physical factors like strength or flexibility.

## Limitation

- The study is limited to an 8-week period, which may not capture long-term effects.
- Results may vary due to individual differences in fitness levels, genetics, and diet.
- External factors like injuries, motivation levels, and training adherence may influence results.
- Sample size may not be large enough to generalize findings to all badminton players.

## Dependent Variables (What is Measured?)

- $VO_2$ max (oxygen uptake capacity)
- Heart rate (HRmax & recovery rate)
- Stamina and endurance (time sustained in high-intensity activity)
- Agility and speed (shuttle run test, reaction time)
- Performance improvements (based on match play analysis)

## Independent Variables (Factors Being Manipulated)

- Cardiovascular training intensity (low, moderate, high)
- Type of training (interval training, endurance drills, recovery exercises)
- Training frequency (3, 4, or 5 sessions per week)

**Training Practice for Badminton (8-Week Training Table)**

| Week | Exercise Type | Details (Duration, Intensity) |
|---|---|---|
| 1-2 | Aerobic Training | Jogging (30 min), Cycling (20 min) |
| 3-4 | Interval Training | 400m sprints, Shuttle Runs (5 reps) |
| 5-6 | High – Intensity Training | Agility Drills, Court Movement Drills |
| 7 | Endurance Drills | Extended Rallies, Match Simulation |
| 8 | Recovery & Testing | Light Cardio, Final Assessment |

**RESULT**

Figure 2 : $VO_2$ Max Improvement

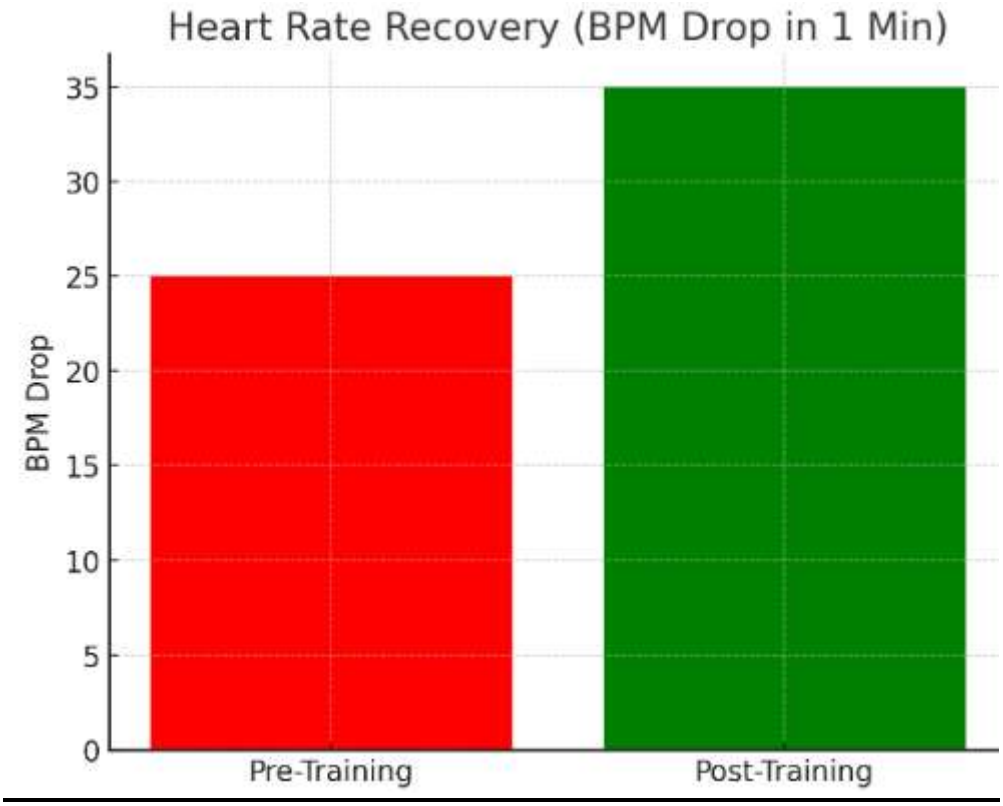


Figure 3: Heart Rate Recovery

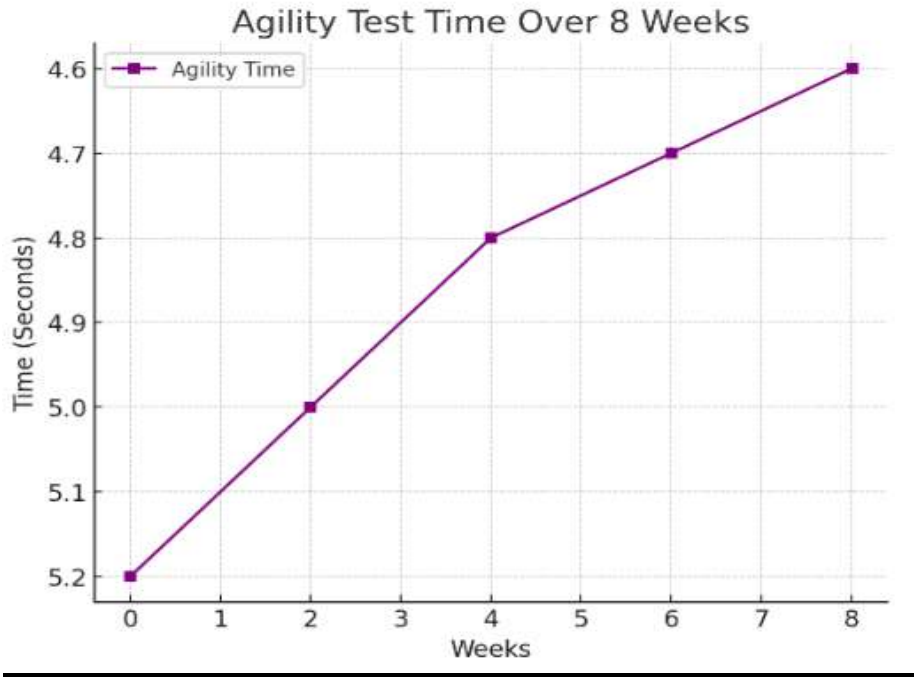

Figure 4: Agility Test Improvement


Figure 5: Match Performance Score

**ANALYSIS**

| Parameter | Pre-Training Average | Post-Training Average | Improvement (%) |
|---|---|---|---|
| VO2 max (ml/kg/min) | 45.2 | 50.1 | +10.8% |
| HRmax(bpm) | 185 | 178 | -3.8% |
| Recovery Rate | 25 | 35 | +40% |
| Agility Test (secs) | 5.2 | 4.6 | +11.5% |
| Match Performance Score | 7.0 | 8.5 | +21.4% |

**DISCUSSION**

- The results indicate significant improvements in cardio- vascular fitness among badminton players following an 8- week training program. The reduction in RHR, increase in VO2 max, improved HRR,

and enhanced shuttle run test scores suggest enhanced aerobic capacity, better recovery, and increased stamina. These findings emphasize the importance of structured cardio training for optimizing badminton performance.

- A deeper analysis of the results highlights key observations. The VO2 max increase suggests a greater ability of players to sustain high-intensity efforts for longer durations, which directly benefits their ability to engage in extended rallies. The improved heart rate recovery indicates a better adaptation of the cardiovascular system, allowing players to recover faster between points, thus reducing fatigue over extended matches.
- Moreover, the enhanced shuttle run test performance aligns with improved on-court movement, as endurance and agility are crucial for covering the court efficiently. The structured training program focusing on HIIT and endurance training played a vital role in these improvements, suggesting a strong correlation between targeted cardio exercises and badminton-specific fitness enhancements.

## RECOMMENDATIONS FOR TRAINING

- Based on the findings, the following training recommendations can further enhance cardiovascular fitness for badminton players.
- Incorporate HIIT Sessions: Short bursts of high-intensity exercises followed by brief rest periods mimic the demands of a badminton match, improving both aerobic and anaerobic capacity.
- Emphasize Recovery Techniques: Active recovery methods such as foam rolling, yoga, and low-intensity exercises can help prevent overtraining and sustain cardio vascular progress.
- Monitor Heart Rate Variability (HRV): Tracking HRV can provide insights into an athlete's recovery status and readiness for high-intensity training.
- Strength and Conditioning Training: Adding resistance training for lower body strength can enhance movement efficiency and reduce injury risk.
- Progressive Overload in Cardio Training: Gradually in- creasing the intensity, duration, and frequency of cardio exercises ensures continued improvements in endurance without overburdening the athlete.

## CONCLUSION

This study confirms that cardiovascular fitness significantly enhances badminton performance by improving stamina, speed, agility, and recovery rates. Players with higher $VO_2$ max and better recovery rates sustain high-intensity performance for longer durations and recover more efficiently between rallies. The 8-week

training regimen, consisting of aerobic, anaerobic, and recovery drills, led to notable improvements in key fitness metrics.

Based on these findings, badminton training programs should integrate structured cardiovascular conditioning to optimize on-court performance and injury prevention. Future research could explore long-term training effects, individualized fitness plans, and advanced recovery techniques for elite badminton athletes.

## REFERENCES

- Baechle, T. R., Earle, R. W. (2008). Essentials of Strength Training and Conditioning. Human Kinetics.
- Bompa, T. O., Carrera, M. (2015). Conditioning Young Athletes. Human Kinetics.
- Bangsbo, J. (1994). Physiological demands of badminton. Sports Medicine, 18(5), 225-236.
- Gibala, M. J., McGee, S. L. (2008). Metabolic adaptations to short-term high-intensity interval training: A little pain for a lot of gain? Exercise and Sport Sciences Reviews, 36(2), 58-63.
- Girard, O., Chevalier, R., Habrard, M., Sciberras, P., Hot, P., Millet, G. P. (2006). Game analysis and energy requirements of elite squash. Journal of Strength and Conditioning Research, 20(3), 725-731.
- Jeukendrup, A. E., Gleeson, M. (2018). Sport Nutrition: An Introduction to Energy Production and Performance. Human Kinetics.
- McArdle, W. D., Katch, F. I., Katch, V. L. (2010). Exercise Physiology: Nutrition, Energy, and Human Performance. Lippincott Williams Wilkins.
- Sheppard, J. M., Young, W. B. (2006). Agility literature review: Classifications, training, and testing. Journal of Sports Sciences, 24(9), 919-932.
- Zhao, J., Li, D., Wang, S., Ma, X. (2019). Effects of high- intensity interval training on badminton players' performance. Journal of Strength and Conditioning Research, 33(4), 1002-1010.

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# THE IMPACT OF STANDARDIZED TESTING ON PHYSICAL EDUCATION PROGRAMS

**Dr Krishna**

**Physical Education Director**

**Nutan Vidyalaya Degree College Kalaburagi Karnataka**

**Dr. Shiva Kumar**

**Physical Education Director**

**Kottureshwara College, Kotturu, Vijayanagara Karnataka**

**ABSTRACT:**

Physical education is that field of education which helps in the development of an individual's personality through different aspects of life. Although this paper comprises of a different aspect of physical education i.e., the application of technology in physical education itself. Physical education is that area within the field of education where technology can play an important role. Whether technology is integrated into physical education probably depends on the individual, institution, organization, school or teacher education program. This paper addresses the use of technology in physical education for both teacher as well as student. Regular physical activity improves academic performance in children, yet the short-term impact of activity on test scores and related behaviors, such as testing anxiety, is less established. Laboratory research demonstrates a positive relationship, but the impact of activity before testing in the school setting remains unstudied. We assessed the impact of a moderate-vigorous intensity physical education (PE) lesson directly before reading/math standardized tests on 5th grade student test-taking outcomes. In this paper we will discuss. The impact of standardized testing on physical education programs. **Keywords:** Standardized Testing, Physical Education, Teacher Education Program, Intellectual Moral Powers, Consistent Scoring, Student Performance, Healthy Body, Healthy Brain, Nutrition, Better Academic Performance

## INTRODUCTION:

Everyone has the basic right to take part in physical education and sports, which are important for developing their whole identity. Everyone should have the right to grow physically, mentally, and morally through physical education and sports, both in schools and in everyday life.

**STANDARDIZED TESTING:**

Standardized testing measures and compares how well students perform academically using the same methods and grading rules.

. A uniform test is a type of test that has two important features:

- Uniform Questions: Everyone taking the test must answer the same questions or choose from a shared set of questions.
- Consistent Scoring: The tests are scored in a predetermined, consistent way, allowing for comparison of individual student performance or group performance.

**PHYSICAL EDUCATION:**

This term means "learning through physical activities." The goal is to help students become skilled in physical activities and understand how to stay safe while being active. This will enable them to participate in various activities that promote a healthy and active lifestyle (Chen & Garn, 2018). In this study, this term means the mental planning and teaching aimed at improving skills, understanding, and habits for exercising and staying fit.

**USE OF STANDARDIZED TEST**

Standardized test results can be used for various reasons. These goals might include: Helping teachers make choices for individual students by figuring out what each student needs to learn. These consequences are meant to encourage improvements in schools and classrooms.

**STUDENT ASSESSMENT IN PHYSICAL EDUCATION:**

Student Assessment is one of the four key parts of physical education. It involves collecting information about how well students are doing and understanding their growth based on that information.

Student assessments follow national and state physical education standards and grade-level goals. These assessments are part of the written physical education program and come with guidelines for how to administer them. It includes proven methods that assess student success in all subjects, including physical health.

## PHYSICAL EDUCATION AS PART OF EDUCATION

In institutionalized education, the main goal has been developing children's cognitive capacity in the sense of learning information in academic subjects. This goal creates a learning environment where sitting and learning is seen as a suitable and successful behavior that is encouraged. Physical education is the only part of school where all kids can learn about moving their bodies and take part in physical activities.

## IMPORTANCE OF PHYSICAL EDUCATION

- Different types of exercise improve the body's systems and how they work. They also help people be more resistant to tiredness, stay energetic, and work well.
- It promotes unity and connection among players and their countries.
- Taking part in different physical exercises helps people grow emotionally.
- The human body is made up of muscles and nerves. To stay healthy, it's important to keep these systems strong and working well. These methods will work well if they are coordinated with each other.
- Participating in different sports helps people make better decisions and grow mentally. Physical education helps players develop leadership skills. [5]

## OBJECTIVES:

- To Impact of Standardized Testing on Physical Education Programs
- To understand the importance of physical education for school children
- The purpose of physical education is to develop the personality of the students, and to develop a sense of sociality in them.

## RESEARCH METHODOLOGY:

The Impact of Standardized Testing on Physical Education Programs, This study's findings are based on secondary data gathered from credible sources such as publications, books, magazines, and the internet.

## RESULT AND DISCUSSION:

### Physical Education in Developing Students

- **Healthy body**

Pre requisites or skills that are extremely advanced are required for participation in the program. Instead, teachers of physical education need to be aware of when it is appropriate to motivate their students to improve their performance. Through the use of physical education, they are able to support children in the development of their physical stamina and strength, particularly early on in their lives. It is possible for students to continue to maintain their fitness outside of the classroom because the motor demands and development of the students are boosted.

**HEALTHY BRAIN**

For the sake of our brain and mental health, it is essential that we engage in physical exercise that spans from mild to strenuous. In addition, it helps children between the ages of 6 and 13 to develop their cognitive abilities more effectively, and it reduces the severity of generalized anxiety disorder in adults. As a consequence of this, you assist the students in cultivating a fitness attitude, and they begin exercising in order to lead a life that is both healthy and active.

- **Nutrition and a Healthy Diet**

Educating students about the importance of maintaining a healthy and well-balanced diet is yet another aspect of physical education. So that they can receive the energy they need for their sports, they eat nutritious food. There is no educator who can minimize the value of maintaining a healthy lifestyle and eating a balanced diet for their children. By participating in physical education, children are able to acquire healthy eating habits and learn to avoid certain foods. Children who are developing have a need for sustenance; hence, it is important for them to eat healthily and be aware of the benefits that this has for their health.

- **Better Academic Performance**

The term "physical fitness" refers to the capacity of the body's systems to function efficiently and concordantly in order to take pleasure in leisure activities, maintain one's health, and deal with unexpected events. There are two aspects of physical fitness that are included in it: health-related physical fitness and skill-related physical fitness. The absence of sicknesses, a body that is well-formed and well-developed, good physiological development, good physiological functioning of the bodily systems, and the ability to engage in a high level of physical activity are the fundamental conditions for being physically fit. Numerous

research have come to the conclusion that there is a significant connection between physical fitness and academic success, as well as psychological and cognitive abilities.

In accordance with the taxonomy of physical fitness components that is generally accepted, the tasks on the test were designed to address both skill-related and health-related aspects of physical fitness. Health-related physical fitness items include body composition (body mass index, BMI) and handgrip strength, as shown in the proposal of a field-based physical fitness test for children aged two to three years old (Figure 1). Skill-related physical fitness items include three-meter balance walking (s), stair climbing (s), five-meter run (s), and kicking the ball (m).

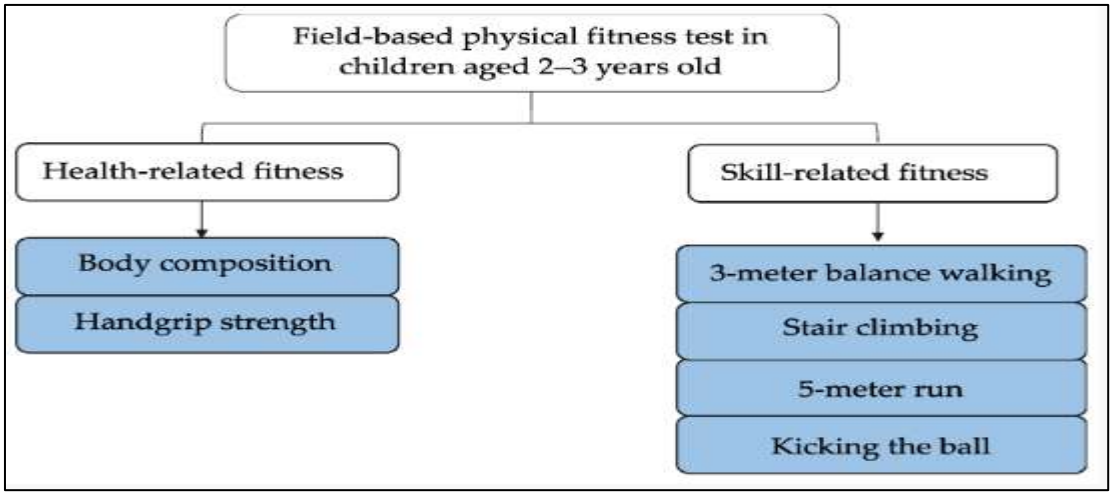


**Figure 1. Proposal of Field-based physical fitness text for children aged 2–3 years old.**

The team consisted of two researchers and one health teacher. One of the researchers specialized in the measurement of scores, the other researcher was responsible for arranging the test procedure, and the nursery health teacher assisted in teaching the children the specific test methods. This was done to ensure that each test met the requirements of being tested by the same person. A visual representation of the testing procedure can be found in Figure 2. The procedure involved testing each kid in the sequence of indoor items (such as height, weight, handgrip strength, three-meter balancing walking, and stair climbing) and outdoor activities (such as five-meter run and kicking the ball). The entire testing procedure lasted around twenty minutes. Encouragement was given to the youngster for the entirety of the tests, which were administered twice for each item by the same tester at intervals of one minute each.

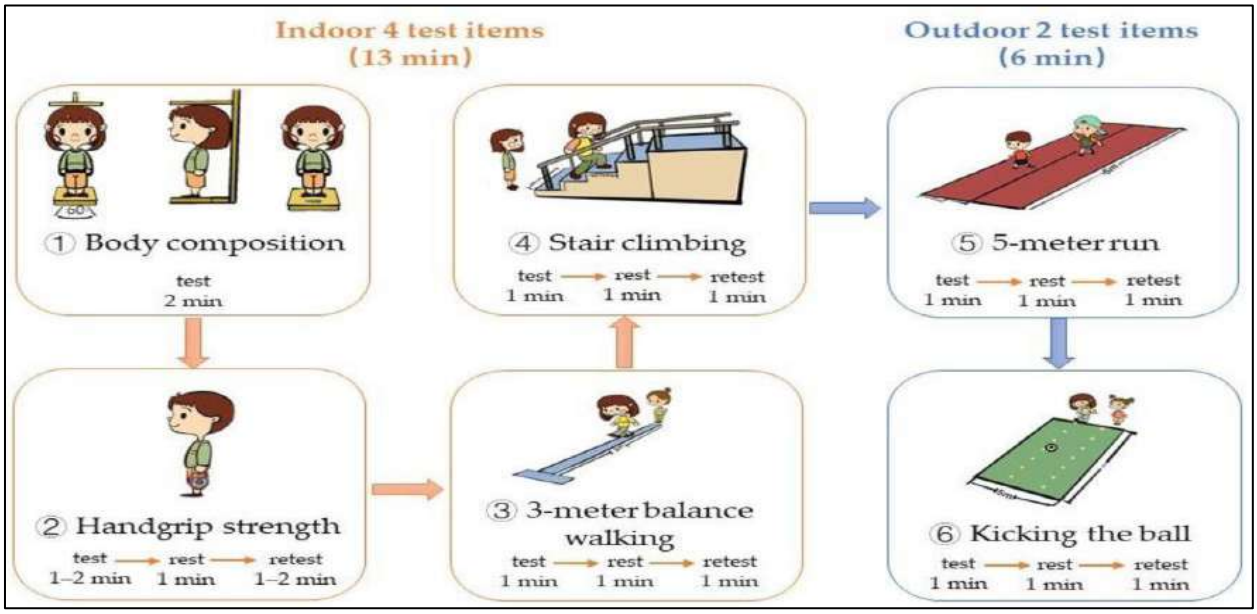


**Figure 2. Process of Field-based physical fitness text for children aged 2–3 years old. [12]**

**Proposed system for physical fitness test:**

**Table 1. test on physical fitness.**

| Health-related physical fitness Components | Activities | Directions |
|---|---|---|
| Body composition | Body Mass Index (BMI) | Divide body mass in kilograms by the square of height in meters. |
| | Waist to Hip Ratio (WHR) | Measure the narrowest part of torso and their widest part of hip. Divide the waist circumference with the hip circumference. |
| Body flexibility | Sit and reach | Sit on floor with shoes off. Place bottom of feet (about 30 centimeters apart) with knees straight. Places hand over hand and reach as far as possible over measuring stick without bending knees. |
| | Shoulder girdle flexibility (right-hand up) | Place right arm over your shoulder with your elbow sticking to the air. Now with your left hand, reach towards the back and try to touch the right hand. |
| | Shoulder girdle flexibility (left-hand up) | Place left arm over your shoulder with your elbow sticking to the air. Now with your right hand, reach towards the back and try to touch the right hand. |
| Muscular strength and endurance | Abdominal curls 1 min | Lie face up on a mat with your back straight and knees bent to 90 degrees. Place your arms parallel to your body.<br>Try to raise your head and shoulders as well as move your hand forward by 3 inches. Repeat it for 1 minute. |
| | Push-up 1 min | Lie prone on floor with hands slightly wider than shoulder width. Raise body up off floor by extending arms with body straight. Keeping body straight, lower body to floor by bending arms. Push body up until arms are extended. Repeat it for 1 minute. |

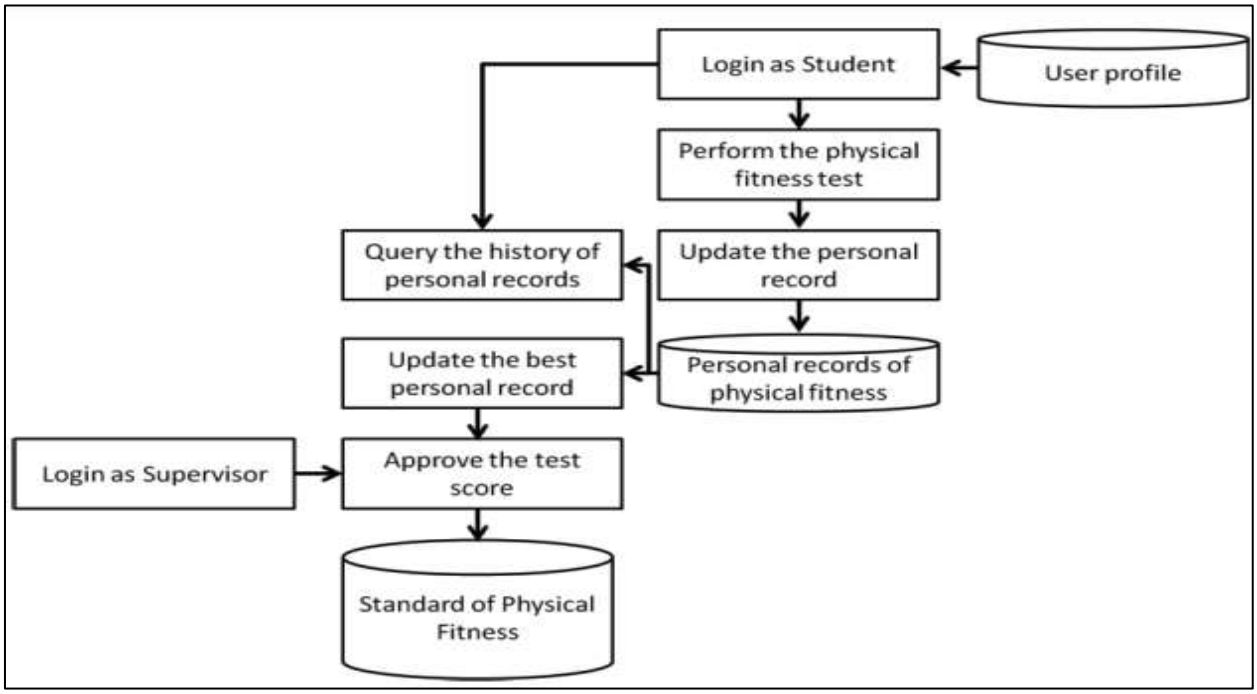


**Figure 3. Standardized test system for health-related physical fitness.**

A health-related physical fitness exam is the foundation of the testing system that we have presented. According to Table 1, it will be a reflection of the health state of individuals in each of the five components discussed. For each of the five components, the activities and their respective instructions are listed in Table 1. It is more convenient for individuals to access the system using their mobile devices because it is created on a mobile-based platform. "Student" and "supervisor" are the two categories of users, each of which has a unique set of responsibilities and authorizations in relation to database access. The "student" type is only able to make changes to their own personal test records, but the "supervisor" type is responsible for approving the student's fitness test result so that it can be updated in the "standard of physical fitness" database, which is the primary database. Illustration of the system architecture can be found in Figure 1. Students will have the opportunity to retake the examination until they are content with the score that they have achieved on the first attempt. An update to the standard of physical fitness test scores will be implemented if and only if the supervisor of their pupils grants their consent, as depicted in Figure 3. [13-14]

## CONCLUSION:

At the end of the day, it is necessary to acknowledge that technology has had an impact, and that impact has been a beneficial one, on the fields of physical education and sports. Using computers in the field of research, assessment, testing and evaluation, instructions and the learning process, and other scientific devices related to sports helps physical education trainers and teachers to make coaching and teaching more

interesting, as well as to improve the level of performance in sports and physical education. Examples of such scientific devices include computers. Evaluating the efficiency of the process of physical training carried out by humans involves determining the level of physical fitness involved, or more specifically, the motor abilities of the individual. A significant necessity in the testing of motor abilities is the standardization of testing and measurement in these results. This is because the accuracy of the testing results is impacted by the standardization of testing and measurement. The purpose of the physical education and sports programs that are offered at educational institutions need to be to improve the athletic performance of students in addition to their overall health and physical fitness. Everyone who is in good physical and mental health has the ability to increase their athletic performance in any activity they wish to participate in. Therefore, the term "physical education" refers to the use of scientific methods in order to promote the orderly and comprehensive development of the human body and, as a result, to maintain extremely high levels of human fitness. In light of this, physical education is absolutely necessary for the development of physical fitness in both the general population and in students.

**REFERENCES:**

1. Palagina, N. I. (2005). Optimization of physical preparation of students on the basis of the assessment of motor abilities: diss. ...Cand. ped. Sciences. Joshkar -Ola, 276.
2. Wilkins, J., Graham, G., Parker, S., Westfall, S., Fraser, R., & Tembo, M. (2003). Time in the Arts and Physical Education and School Achievement. Journal of Curriculum Studies, 35 (6), 721-734,
3. Abels KW, Bridges JM. Teaching movement education: Foundations for active lifestyles. Champaign, IL: Human Kinetics Publishers; 2010.
4. Barroso CS, McCullum-Gomez C, Hoelscher DM, Kelder SH, Murray NG. Self-reported barriers to quality physical education by physical education specialists in Texas. Journal of School Health. 2005;75(8):313–319.
5. Chen A, Martin R, Ennis CD, Sun H. Content specificity of expectancy beliefs and task values in elementary physical education. Research Quarterly for Exercise and Sport. 2008;79(2):195–208.
6. Basch C. Healthier children are better learners: A missing link in school reforms to close the achievement gap. 2010. [October 11, 2011].
7. NASPE (National Association for Sport and Physical Education). Moving into the future: National Physical Education Content Standards. 2nd. Reston, VA: NASPE; 2004. [Reference list]

8. Fiorentino.L.H., (2004). Digital video assignments: Focusing a new lens on teacher preparation programs. Journal of Physical Education, Recreation & Dance, 75(5), 47-54.

9. Simfukwe, P., Van Wyk, B., & Swart, C. (2017). Perceptions, attitudes and challenges about obesity and adopting a healthy lifestyle among health workers in Pietermaritzburg, KwaZulu-Natal province. African Journal of Primary Health Care and Family Medicine, 9(1), 1-9.

10. Kales ML, Sangria MS. Physical and History of Physical Education, Parkas Brothers, Ludhiana. 1988.

11. Christopher C, Thomas R, Mark WA. Performance assessment for field sports. London: Routledge. 2009, 2.

12. Corbin, C.B.; Welk, G.J.; Corbin, W.R.; Welk, K. Concepts of Physical Fitness: Active Lifestyles for Wellness; McGraw-Hill: New York, NY, USA, 2008.

13. Castelli, D. M., Hillman, C. H., Buck, S. M., & Erwin, H. E. (2007). Physical fitness and academic achievement in third-and fifth-grade students. Journal of Sport and exercise Psychology, 29(2), 239-252.

14. Trudeau, F., & Shephard, R. J. (2008). Physical education, school physical activity, school sports and academic performance. International journal of behavioral nutrition and physical activity, 5(1), 1-12.

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# ANALYSIS OF ALTERATION IN VO2MAX IN RESPONSE TO PRANAYAMA PRACTICE AND AEROBIC EXERCISES AMONG SEDENTARY MEN

**Ramesh Banoth**

**Department of Physical Education**

**Guru Nanak institute of Technology, Hyderabad.**

**Corresponding Authors Email:Siddubanoth339@gmail.com**

## ABSTRACT

The purpose of the study was to assess the changes in Vo2max subsequent to pranayama practice and aerobic training among sedentary men. To achieve the purpose of the study the investigator selected forty-five sedentary men as subject in the age group of 40 years to 45 years. They were divided into three equal groups of fifteen each (n=15) at random. Group-I performed pranayama practice, group-II performed aerobic training and group-III acted as control. Training programme was administered to the sedentary men for twelve weeks with six training units per week. Maximum oxygen consumption was selected as dependent variable. ANCOVA was used to find out the adjusted mean difference between the groups. The result of the study reveals that due to the effect of Pranayama practices and aerobic exercises the maximum oxygen consumption of the subjects was significantly improved. It was also concluded that aerobic training was significantly better than Pranayama practices in improving Vo2max of sedentary men. **Key Words**: Pranayama practice and Aerobic training, Vo2max.

## INTRODUCTION

Yoga has been practiced for thousands of years and during all this time, people found there to be many and varied benefits of yoga. Furthermore, they conducted investigations, in order to clearly establish the areas in which people can obtain recognizable health benefits, in an extended practice. The information found after conducting the investigations was grouped in three categories, establishing that yoga practitioners are likely to observe improvements in physiological, psychological, and biochemical aspects.

The Pranayama is the central part of patanjalis astanga yoga system. The pranayama is derived from two Sanskrit words ‘prana’ and ‘ayama’. Where ‘prana’ means Energy ‘ayama’ means elongation. So the

word meaning of pranayama is Elongation of pranic energy. Whereas, great Yogi Patanjali defines Pranayama as ‘Tasmin pranayamaha Shwasa prashwasayor gati vichhedaha

This means controlling the motion of inhalation and exhalation. By reducing the number of breathing one can extend healthy life, this one can achieve only by regular practice of breathing exercise or Pranayama.

During normal breathing we are using only half of the lungs for breathing, this one can easily understand by taking a deep breath. During the practice of pranayam we are using at least eighty percent of our lungs. As utilization of lungs more the pure oxygen entering to blood immediately increases, so each blood cell increases their efficiency, so the whole body gets benefitted. Normally our thoughts and breathing have direct relations, when we are angry or restless, the number of breathing per minute is increases rapidly, this everyone is experiencing in day today life. By controlling the breathing one can control the emotions and unnecessary thoughts; this is possible only by the practice of pranayama. If one practices the pranyama surely he will get control over unnecessary thoughts.

Aerobic exercise is physical activity that increases the activity of the pulmonary and cardiovascular systems. It requires an increase in oxygen to be used and transported to the muscle. Conversely, anaerobic exercise is physical activity of a short duration and of less intensity than aerobic exercise. It does not require an increase in oxygen to be used and transported to the muscle. Physiological functions of the body may be improved by exercise. In order to assess the training impact on Vo2max among sedentary men, the investigator selected pranayama and aerobic training as the independent variable. Information related to the impact of pranayama and aerobic training among sedentary men is scanty. So the present study is planned.

## METHODOLOGY

### Subject and Variable

To achieve the purpose of the study the investigator proposed to select forty-five sedentary men from Kanyakumai district, Tamilnadu, India as subject in the age group of 40 years to 45 years. They were divided into three equal groups of fifteen each (n=15) at random. Group-I performed pranayama practice, group-II performed aerobic training and group-III acted as control. All the subjects selected for the experimental treatment was subjected to medical evaluation and certification from a doctor ensuring their health capacities to undergo the training program. Maximum oxygen consumption was selected as dependent variable.

### Training Programme

The training program was scheduled for one session a day each session lasted between forty-five minutes to one hour approximately. Training programme was administered for twelve weeks with six training units per

week. The experimental Group-I performed pranayama practice and group-II performed aerobic exercises. The pranayama practices included in this training programme were Suryadedana, Bhastrika, Anuloma Viloma, Nadi Suddhi, Ujjai and Kapalabhati respectively. The training programme was conducted in the morning sessions from 6 `O`clock onwards. The training load was increased, according to the adaptation conditions of the subjects. After each three weeks the intensity of the experimental groups was increased. Aerobic exercises sessions consist of a 30-minute aerobic exercise period with a warming-up and cooling-down period of 5 and 3 minutes, respectively. The cardiovascular load during the training period is individually adjusted and increased from a level of 80% to 95% of the heart rate reserve (HRR). HRR is the difference between the predicted maximum heart rate and the measured resting heart rate.

## COLLECTION OF THE DATA

The pretest data was collected prior to the training programme and posttest data was collected immediately after the twelve weeks of pranayama practice and aerobic training, from the experimental groups and a control group.

## EXPERIMENTAL DESIGN AND STATISTICAL TECHNIQUE

The data collected from the three groups prior to and post experimentation on selected dependent variable was statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Since three groups are involved, whenever the obtained 'F' ratio value was found to be significant for adjusted post test means, the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases the level of confidence was fixed at 0.05 for significance.

## RESULTS

The pre and post test data collected from the experimental and control groups on VO2max were statistically analyzed by ANCOVA and the results are presented in table- I

**Table-I: Analysis of Covariance on Vo2max of Experimental and Control Groups**

| | Pranayama Practice | Aerobic Exercises | Control Group | S o V | Sum of Squares | df | Mean squares | 'F' ratio |
|---|---|---|---|---|---|---|---|---|
| Adjusted Post test Mean | 30.84 | 32.73 | 28.69 | B | 121.87 | 2 | 60.93 | 75.07* |
| | | | | W | 33.27 | 41 | 0.81 | |

(The required table value for significance with degrees of freedom 2 & 42 is 3.23 and degree of freedom 2 & 41 is 3.23)

*Significant at .05 level

Table-I shows that the adjusted post test means on VO2max of pranayama practice, aerobic exercises groups and control groups are 30.84, 32.73 and 28.69 respectively. The obtained 'F' ratio value of 107.44 on VO2 max were greater than the required table value of 3.23 for the degrees of freedom 2 and 41 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post test means of experimental and control groups on VO2max.

Since, the adjusted post test 'F' ratio value is found to be significant the Scheffe's test is applied as post hoc test to determine the paired mean differences, and it is presented in table-II.

**Table – II: Scheffe's Test for the Difference between the Adjusted Post Test**

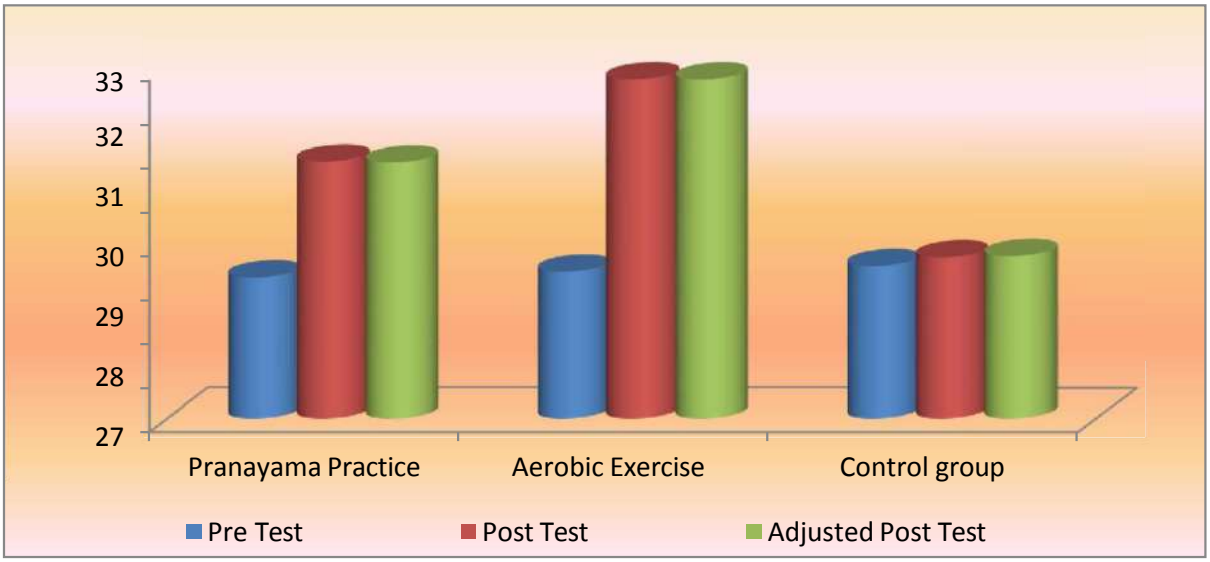
**Paired Means of Vo2max**

| **Adjusted Post Test Means** | | | **DM** | **CI** |
|---|---|---|---|---|
| **Pranayama Practice** | **Aerobic Exercises** | **Control Group** | | |
| 30.84 | 32.73 | | 1.89* | 0.54 |
| 30.84 | | 28.69 | 2.15* | 0.54 |
| | 32.73 | 28.69 | 4.04* | 0.54 |

***Significant*

Table - II shows the Scheffe's test results that there are significant differences between the adjusted post tests means of pranayama practice and aerobic exercises groups; pranayama practice and control groups; aerobic exercise group and control group on VO2max. Moreover, aerobic exercise group had high impact to increase the VO2max of the subjects.

**Figure – I: Diagram Showing the Mean Value on Vo2max of Experimental and Control Groups**




## DISCUSSION

There have been many studies to describe the effect of yogasana over cardiovascular system. Khanam et al., (1996) showed decreased heart rate and sympathetic reactivity following a brief period of yogic exercise practice in asthmatic patients. Bowman et al., (1997) performed a study comparing the effect of yoga and aerobic exercise on the baroreflex over healthy elderly persons. It revealed that heart rate decreased significantly following yoga but not after aerobic training. There was also an increment in VO2max by 11 percent in yoga practitioners (Bowman et al., 1997).

Aerobic training is a progressive physical conditioning programme that stimulates cardio respiratory activity for a time period sufficiently long to produce beneficial changes in the body. Aerobic exercises builds stamina for sports and it also is the most important form of exercise for health, since it increases the efficiency of heart, circulation and muscles. Aerobic exercise is the keystone of fitness by doing aerobics it increases the capillary network in the body. In this present study pulse rate, breath holding time, systolic blood pressure, diastolic blood pressure and Vo2max are altered considerably after exercise. Several studies (Simao, Polito & Lemos, 2003; MacDougall *et al.*, 1992; Stone *et al.*, 1991; Fleck, 1988) confirm the findings of this study.

Most of the previous studies also show a substantial increase in maximum oxygen consumption following aerobic training. During exercise, VO2max increases in direct proportion VO2max to the rate of work. A person's VO2max is in part genetically determined; it can be increased through training until the point that the genetically possible maximum is reached (Jorgensen *et al*., 1977). Increase in VO2max generally range from 15 to 20 percent following a 6-month training period (Wilmore & Costill, 1994). A six-week training period can result in increases in Vo2max in participants undergoing high intensity (Hickson *et al*., 1981) and lower intensity training (Cunningham & Cantu, 1990).

## CONCLUSION

The result of the study reveals that due to the effect of pranayama practices and aerobic exercises the maximum oxygen consumption of the sedentary men was significantly improved. It was also concluded that aerobic training was significantly better than Pranayama practices in improving maximum oxygen consumption of sedentary men.

## REFERENCES

Bowman AJ, Clayton RH, Murray A. (1997). Effects of aerobic exercise training and yoga on the baroreflex in healthy elderly person. *European Journal of Clinical Investigation* 27: 443-449.

„*Physical Movement*„ *www.google.co.in.* (2010). Brehm, Barbara A.

Cunningham, L.N. and Cantu, R.C. (1990). Acute and chronic effects of exercise using an exercise cycle in healthy, sedentary adults, *Physical therapy*, 70, p-494-502

Fleck, S.J. (1988). Cardiovascular adaptations to resistance training, *Med Sci Sports Exerc***.**

20(5Suppl).

Hickson, R. Hagberg, A., Eshari, A., & Hallowoszy, J. (1981). Time course of the adaptive responses of aerobic power and heart rate to training, *Medicine and Science in Sports and Exercise,* 13, 17-20.

Jorgensen CR, Gobel FL, Taylor HL, Wang Y. (1977). Myocardial blood flow and oxygen consumption during exercise, *Annals of the New York Academy of Sciences,* 301: 213 223.

Khanam AA, Sachdeva V, Gulera R, Deepak KK. (1996). Study of pulmonary and autonomic functions of Asthma patients after Yoga training. *Indian J Physiol Pharmacol*; 40(1): 318_321.

MacDougall JD, McKelvie RS, Moroz DE, Sale DG, McCartney N. (1992). Factors affecting blood pressure during heavy weight lifting and static contractions, *J Appl Physiol.*, 73:1590-7.

Simao R, Polito MD, Lemos A. (2003). Duplo-produto em exercises contra-resistidos, *Fit Perfor J* 2:279-84.

Stone, M.H. et al., (1991). Health and performance related potential of resistance training, *Sports Medicine*, 11, 210-231.

Wilmore JH, Costill DL. (1994). *Physiology of sport and exercise*, Champaign, IL: Human Kinetics.

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# IMPACT OF YOGIC TRAINING AND CLASSIC STRENGTH-POWER TRAINING ON BMI AND HEART RATE VARIABLES AMONG MEN PLAYERS

**Meka Vani**

**Research Scholar, Department of Physical Education,**

**Annamalai University, Annamalai Nagar, 608002,**

**Email: reddysrinivas353@gmail.com**

**Dr.D. Devaki**

**Assistant Professor, Department of Physical Education,**

**Annamalai University, Annamalai Nagar, 608002,**

**Email: devakidharm@gmail.com**

## ABSTRACT

Classic strength training tools such as dumbbells, barbells, and kettlebells and medicine balls or sand bags—weighted balls or bags. Weight machines are devices that have adjustable seats with handles attached. Yoga is excellent for increasing flexibility, muscle strength, and tone, and it boosts our energy, vitality, and heart, respiratory, and blood pressure levels. To achieve this research study, subjects will be selected from Jonah College of Physical Education, Aitipamula (Village), Kattangur (Mandal), Nalgonda, Telangana 508205. Their ages range from 18 to 22 years old. The training period will be 12 weeks. This study consists of two experimental groups, and one will act as the control group; they are: experimental Group-I Yogic Training, experimental Group-II Classic Strength-Power Training, and experimental Group-III Control. Each group may be considered fifteen each. For this study, two selected variables are anthropometric variables: BMI, which was assessed by test items height and weight ratio and measured in kg/m/s; and physiological variables: heart rate, which was assessed by a multi-parameter monitor device. To accomplish this research, data will be taken pre- and post-test. This research data is measured by ANACOVA at a 0.05 level of confidence. Results showed that there was a significant improvement in BMI and HR, and this research concluded that there was a significant change in BMI and HR due to the impact of yogic training and classic strength and power training.

## INTRODUCTION

Various practices involved in the tradition of yoga include a disciplined lifestyle (Yama and Niyama), cleansing procedures (Kriya), physical postures (Asana), breath regulation (Pranayama), concentration (Dharana), and meditation (Dhyana). A controlled study evaluating the effect of slow Pranayama breathing compared to normal breathing on pain perception demonstrated reduced ratings of pain intensity and unpleasantness, particularly for moderately versus mildly painful thermal stimuli with slow breathing. A well-rounded fitness program includes strength training to improve joint function, bone density, muscle, tendon, and ligament strength, as well as aerobic exercise to improve your heart and lung fitness, flexibility, and balance. Most beginners experience a rapid increase in strength, followed by a plateau or levelling-out of strength improvements. After that, gains in muscle strength and size are hard-earned.

## METHODOLOGY

To achieve this research study, subjects will be selected from Jonah College of Physical Education, Aitipamula (village), Kattangur (mandal), Nalgonda, Telangana (508205). Their ages range from 18 to 22 years. The training period will be 12 weeks. This study consists of two experimental groups, and one will act as the control group. Experimental Group I: Control; Experimental Group II: Yogic Training; Group III: Classic Strength and Power Training; each group considered fifteen subjects. For this study, two selected variables are in the anthropometric variable: BMI, which was assessed by test items height and weight ratio and measured in kg/s, and the physiological variable, heart rate, which was assessed by a multi-parameter monitor device. To accomplish this research, data will be taken pre- and post-test. This research data is measured by ANACOVA at a 0.05 level of confidence.

## RESULTS

**Table-1**

**ANALYSIS OF COVARIANCE OF DATA ON BODY MASS INDEX BETWEEN PRE AND POSTTEST OF CG CTG PTG COMTG GROUPS**

| **Test** | **CG** | **YTG** | **CSPTG** | **Sov** | **Sos** | **df** | **MS** | **Obtained 'F' ratio** |
|---|---|---|---|---|---|---|---|---|
| **Pre-test Mean** | 22.86 | 22.90 | 22.83 | B | 4.96 | 2 | 2.48 | 2.32 |
| **SD** | 1.98 | 1.13 | 1.07 | W | 43.80 | 42 | 1.07 | |
| **Post-test Mean** | 22.86 | 19.83 | 20.16 | B | 83.06 | 2 | 41.53 | 27.79* |
| **SD** | 1.96 | 1.12 | 1.45 | W | 59.71 | 42 | 1.46 | |
| **Adjusted post mean** | 22.87 | 19.84 | 20.15 | B | 83.11 | 2 | 41.55 | 28.52* |
| | | | | W | 62.81 | 41 | 1.50 | |

*The table value required for significance at 0.05 levels with df 3 and 56 are 2.776 and 3 and 55 are 2.778 respectively.

Table- 1 show that the pre-test mean values on BMI (body mass index) for CG, YTG, and CSPTG were 22.86, 22.90, and 22.83, respectively. The obtained 'F' ratio value is 0.25 for pre-test scores on BMI, which is less than the table value of 2.32 for significance with df 3 and 56 at the 0.05 level of confidence. The post-test mean values on BMI for CG, YTG, and CSPTG were 22.56, 19.83, and 22.16, respectively. The obtained 'F' ratio value was 27.9 for post-test scores on BMI, which was greater than the table value of 2.776 for significance with df 3 and 56 at the 0.05 level of confidence. The adjusted post-test mean values for BMI CG, YTG, and CSPTG were 22.87, 19.84, and 20.15, respectively. The obtained 'F' ratio value was 28.52 for adjusted post-test scores on BMI, which was greater than the table value of 2.778 for significance with df 3 and 55 at the 0.05 level of confidence.

The results of the study showed that there was a significant difference among CG, CTG, and CSPTG in decreased BMI levels; however, the improvement was in favour of CSPTG. Since four groups were involved, Scheffe's post hoc test was applied to find out the paired mean difference, if any, and it is presented in the table.

**TABLE – 2**

**SCHFEE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN THREE PAIRED ADJUSTED POSTTEST MEANS OF BODY MASS INDEX**

| **Adjusted Post Mean Test** | | | **Mean Difference** | **Confidence Interval** |
|---|---|---|---|---|
| **CG** | **YTG** | **CSPTG** | - | |
| 22.87 | 19.84 | - | 3.03 | 1.26 |
| 22.87 | - | 20.15 | 2.72 | 1.26 |
| - | 19.84 | 20.15 | 0.31 | 1.26 |

The table 2 shows that the adjusted post-test means differences of CG, YG, and CSPTG were 3.03, 2.72, and 0.31, respectively. They were greater than the confidence interval value of 0.89 at 0.05 levels, which indicates that there was a significant difference in decreased BMI among all of CG, YG, and CSPTG. However, most favour CSPTG.

**TABLE-3**

**ANALYSIS OF COVARIANCE OF DATA ON HEART RATE BETWEEN PRE AND POSTTEST OF CG YTG CSPTG GROUPS**

| **Test** | **CG** | **YTG** | **CSPTG** | **Sov** | **Sos** | **df** | **MS** | **Obtained 'F' ratio** |
|---|---|---|---|---|---|---|---|---|
| **Pre-test Mean** | 74.33 | 74.13 | 74.53 | B | 38.74 | 2 | 19.37 | 2.13 |
| **SD** | 3.04 | 3.24 | 3.28 | W | 313.89 | 42 | 7.66 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Post-test Mean** | 70.33 | 70.95 | 70.20 | B | 149.59 | 2 | 74.79 | 13.57* |
| **SD** | 3.04 | 1.30 | 3.31 | W | 225.93 | 42 | 5.51 | |
| **Adjusted post mean** | 70.33 | 70.88 | 70.12 | B | 147.73 | 2 | 73.87 | 10.16* |
| | | | | W | 305.47 | 41 | 7.27 | |

*The table value required for significance at 0.05 levels with df 3 and 56 are 2.776 and 3 and 55 are 2.778 respectively.

Table 3 shows that the pre-test mean values for heart rate for CG, YTG, and CSPTG were 74.33, 74.13, and 74.53, respectively. The obtained 'F' ratio value is 2.13 for pre-test scores on heart rate, which is less than the table value of 2.776 for significance with df 3 and 56 at a 0.05 level of confidence. The post-test mean values on heart rate for CG, YTG, and CTPTG were 70.33, 70.95, and 70.20, respectively. The obtained 'F' ratio value was 13.57 for post-test scores on heart rate, which was greater than the table value of 2.776 for significance with df 3 and 56 at the 0.05 level of confidence. The adjusted post-test mean values for heart rate CG, YTG, and CSPTG were 70.33, 70.88, and 70.12, respectively. The obtained 'F' ratio value was 10.16 for adjusted post-test scores on heart rate, which was greater than the table value of 2.776 for significance with df 3 and 55 at the 0.05 level of confidence.

The results of the study showed that there was a significant difference among CG, YTG, and CSPTG in decreased heart rate levels; however, the improvement was in favour of YTG. Since four groups were involved, Scheffe's post hoc test was applied to find out the paired mean difference, if any, and it is presented in the table.

**TABLE – 4**

**SCHFEE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN THREE PAIRED ADJUSTED POSTTEST MEANS OF HEART RATE**

| **Adjusted Post Mean Test** | | | **Mean Difference** | **Confidence Interval** |
|---|---|---|---|---|
| **CG** | **YTG** | **CSPTG** | - | |

| | | | | |
|---|---|---|---|---|
| 70.33 | 70.88 | - | 0.55 | 2.45 |
| 70.33 | - | 70.12 | 0.21 | 2.45 |
| - | 70.88 | 70.12 | 0.76 | 2.45 |

The table 4 shows that the adjusted post-test heart rate mean difference of CG, YTG, CSPTG and were 0.55, 0.21, and 0.76 respectively. They were greater than the confidence interval value 0.89 at 0.05 levels, which indicates that there was a significant difference of decreased heart rate among all of CG, YTG and CSPTG. However most favour to YTG.

## RESULTS AND DISCUSSION

This study reveals previous research supported by documents prevails, and the fine conclusion is that BMI may have varied. But in heart rate changes, major provisions are possible, followed by the review of: According to Andrew Thomas Ernst (2016), the purpose of the current study was to determine what effects 7-weeks of yoga training had on Olympic weight lifters flexibility, rate of force development, and jump height. Andrew Thomas Ernst (2016) the purpose of the current study was to determine what effects 7-weeks of yoga training had on Olympic weight lifters flexibility, rate of force development, and jump height. Khan Agarwal and Memon (2022) found that obesity is becoming a serious global public health issue due to sedentary lifestyles and bad eating habits. However, there was no statistically significant difference noted in waist-hip ratio in individuals performing aerobic exercises, as the p value was > 0.05.

Priya Jangid and others (2013) found that ISH is the most common type of hypertension in people over 60 years of age, with an increase in SBP being the principal characteristic in this population. They concluded that ISH has quite a high prevalence in young adults and is more common than SDH. Female gender, rural inhabitants, non-vegetarian diet, low socio-economic status, family history of hypertension, smoking, alcoholism, BMI, and serum cholesterol level are important determinants of ISH in young adults.

JiongLuo 1, Bing Zheng 2, 2020 Regular aerobic exercise can effectively increase microvascular function in skeletal muscle and promote the oxidation of fatty acids. Twelve-week yoga combined with aerobic exercise training has a significant positive effect on morphological and blood lipid indicators in female college students. Yoga combined with aerobic exercise training can be recommended for young women with an overweight or obese population.

## CONCLUSION

There was a significant difference in BMI and a significant improvement in meeting the normal heart rate values of an individual due to the training effects of yogic and classic strength power training.

## REFERENCES

Ernst, A. (2016). 7-Weeks of Yoga Training and Its Effects on Flexibility, Rate of Force Development, and Jump Height in Olympic Weightlifters. Thesis Submitted to Northern Michigan University In partial fulfilment of the requirements for the degree of Master of Exercise Science Office of Graduate Education and Research May 2016. "https://commons.nmu.edu/cgi/viewcontent.cgi?article=1079&context=theses.

Khan, S., Agrawal, R., &Memon, S. (2022). Comparison of Effect of Yoga versus Aerobic Exercise on Waist Circumference, Waist-Hip Ratio and Body Mass Index in Overweight and Obese Adult Individuals. *Kathmandu University Medical Journal*, *20*(1), 38-42.

Luo, J., &Zheng, B. (2019). Effect of yoga combined with aerobic exercise intervention on morphological and blood lipid indicators in female college students. *The Journal of sports medicine and physical fitness*, *60*(3), 442-448.

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# COMPARISON OF EXPLOSIVE POWER AMONG KABADDI PLAYERS AND KHO KHO GIRLS PLAYERS OF RANGA REDDY DISTRICT BETWEEN THE AGE GROUP OF 13 TO 15 YEARS

**Gone Shravani**

**School Asst. (Physical Education)**

**ZPHS Mutpur, Kondurg Mandal, RR Dist.**

**ABSTRACT:**

The purpose of the study was to find out the effect of Explosive Power among Kabaddi Players and Kho Kho Girls Players of Ranga Reddy District. For the present study the 15 Kabaddi players and 15 Kho Kho Girl Players of Schools in Ranga Reddy District between the age group of 13 to 15 Years. The standing Broad Jump Test Pre and Post Test were conducted among two groups to assess the explosive power of legs. The Kabaddi Players Mean in Standing Broad Jump is 2.48 and Kho Kho Players Mean is 2.32. Hence Kabaddi Players is having better Standing Broad Jump Performance compare to Kho Kho Players. Hence there is difference between Kabaddi Players and Kho Kho Players in Standing Broad Jump i.e. explosive Power. The Kabaddi Girl Players Performance is better than Kho Kho Girl Players in Standing Broad Jump.
Key Words: Explosive Power, Kabaddi, Kho Kho etc.

## 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 offense, referred to as a "raider", to run into the opposing team's half of the court, touch out as many of their players and return to their own half of the court, all without being tackled by the defenders in 30 seconds. 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 a tackle.

The Pro Kabaddi League was established in 2014. The league modeled its business upon that of the Indian Premier League of Twenty20 cricket, with a large focus on marketing, the backing of local broadcaster Star Sports, and changes to the sport's rules and its presentation to make it more suitable for a television audience. The Pro Kabaddi League quickly became a ratings success on Indian television; the 2014 season was watched by at least 435 million viewers over the course of the season, and the inaugural championship match was seen by 98.6 million viewers

The game of Kho-Kho is based on natural principles of physical development. It is vigorous and fosters a healthy competitive spirit among youths. It is not merely running with speed but it's a 'CHASE' a natural instinct to overtake to pursue, to catch a kill. No doubt speed is the heart and to stand to a relentless pursuit of 9 minutes at a stretch (turn) this heart demands stoutness,

**PURPOSE OF THE STUDY**:

The purpose of the study was to find out the effect of Explosive Power among Kabaddi Players and Kho Kho Girls Players of Schools in Ranga Reddy District.

**METHODOLOGY:**

For the present study the 15 Kabaddi players and 15 Kho Kho Girl Players of Schools in Ranga Reddy District between the age group of 13 to 15 Years. The standing Broad Jump Test Pre and

Post Test were conducted among two groups to assess the explosive power of legs.

**RESULTS AND DISCUSSION:**

**Table 1: One Way Anova Is Used to Test the Significance Mean Difference Between Kabaddi Players and Kho-Kho Players In Standing Broad Jump.**

| Descriptives | N | Mean | Std. Deviation | Std. Error |
|---|---|---|---|---|
| Kabaddi | 60 | 2.48 | 0.106 | 0.013 |
| KhoKho | 60 | 2.32 | 0.052 | 0.006 |
| Total | 120 | 2.40 | 0.118 | 0.010 |

**ANOVA**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 0.833 | 1 | 0.833 | 117.408 | 0.000 |
| Within Groups | 0.838 | 118 | 0.007 | | |
| Total | 1.671 | 119 | | | |

The Kabaddi Players Mean in Standing Broad Jump is 2.48 and Kho Kho Players Mean is 2.32. The Standard Deviation of Kabaddi Players is 0.106 and Kho Kho Players is 0. 052.Hence Kabaddi Players is having better Standing Broad Jump Performance compare to Kho Kho Players.The Sum of Squares and Mean Square between the Groups is 0.833 The F Value is 117.408 and Sig. of Anova is 0.000 that is below the value of 0,05. Hence there is difference between Kabaddi Players and Kho Kho Players in Standing Broad Jump i.e. explosive Power. The Kabaddi Girls Players Performance is better than Kho Kho Girls Players in Standing Broad Jump.

**CONCLUSION:**

It can be concluding that there is a significant difference between Kabaddi Players in Kho Kho Players. The Kabaddi Girl Players is having better explosive power compare to Kho Kho Girls Players.

**RECOMMENDATIONS:**

Based on analysis of collected data, the investigators would like to recommend the research work to extend further more as mentioned below.

Similar research work should be done on similar set of sports to validate the results. Use a variety of training to develop physical strength, focusing on the development of other motivati ons through all methods that have to do with each quality to be created.

**REFERENCES:**

1. Clarke H. Harrison, application of measurement of health and physical Education (Eagle wood Cliffs, New Jersy: Prentice Hall), 1967, 14.

2 George L. True. The effect of an Accelerated physical conditioning programme on Athletes and non-athletes at St. Edward High School "completed research in Health, Physical Education and Recreation, 1963; 5:98.

3. Hakinnen et al., Association of physical fitness with health-related quality of life in Finnish young men A.M.J. Epidemiol, 1988; 127:933-941.

4. Hussey J. Relationship between the times spent in specific intensities of activity and inactivity, cardio respiratory fitness and body composition in children". Am. J. of Clin. Nutr. 2005; 82:13-20.

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# THE FOUR DIFFERENT ZONES OF SAVITRIBAI PHULE PUNE UNIVERSITY

**Sanket S. Savekar and Sayali B. Mandrekar**

**MPEd 2nd year students, CACPE, Pune**

**Dr. Shraddha Naik**

**Professor, CACPE, Pune**

## ABSTRACT

This study aimed to investigate and compare the physical fitness factors of basketball players from four distinct zones of Savitribai Phule Pune University. The primary objective was to determine whether there existed any significant differences in physical fitness among players from different zones. To achieve this, a total of 28 basketball players, aged 19-25 years, were randomly selected from four different zones, namely Pune City, Pune District, Nashik, and Sambhajinagar. The physical fitness factors assessed in this study included age, body composition, hand grip strength, and vertical jump. These factors are crucial in determining a basketball player's overall fitness and performance on the court. The data collected was analyzed using Microsoft Excel's data analysis tool to identify any significant differences among players from the four zones. The results of the study revealed that there were no significant differences in height, weight, hand grip strength, and vertical jump among players from the four zones. This suggests that the physical fitness levels of basketball players from different zones of Savitribai Phule Pune University are relatively similar. A closer examination of the data revealed that players from the Nashik zone had a mean height of 177.80 cm, weight of 68.4 kg, hand grip strength of 41.84 kg (right hand) and 40.64 kg (left hand), and a vertical jump of 52.43 cm. Players from the Pune District zone had a mean height of 184.07 cm, weight of 77.28 kg, hand grip strength of 43.97 kg (right hand) and 43.90 kg (left hand), and a vertical jump of 50 cm. Players from the Pune City zone had a mean height of 177.44 cm, weight of 67.40 kg, hand grip strength of 49.05 kg (right hand) and 47.20 kg (left hand), and a vertical jump of 53.14 cm. Finally, players from the Sambhajinagar zone had a mean height of 182.66 cm, weight of 71.92 kg, hand grip strength of 45.77 kg (right hand) and 43.05 kg (left hand), and a vertical jump of 47 cm. The analysis of variance (ANOVA) test was used to determine whether there were any significant differences among the means of the four zones. The results of the ANOVA test revealed that the p-value was larger than 0.05, indicating that the observed data was likely to occur under the null hypothesis. This suggests that there is not enough evidence to reject the null hypothesis and conclude that a significant difference exists among the physical fitness factors of basketball players from the four zones.

## INTRODUCTION:

Basketball is a game where two teams of five players each run back and forth attacking and defending a basket set at the height of 3.05 m. The game is characterized by high-intensity intermittent runs, often requiring planned or unpredictable changes of direction, a variety of specific technical skills and well-developed jumping ability. Thus, a player's achievement and success depend on physical abilities, physiological profile, mental abilities and tactical skills as well as on their anthropometric characteristics such as body height and body weight. However, considering the height of the basket and that the winner is who scores more baskets, body height and weight have had the highest priority during the selection process and when establishing an in-court position.

When investigating the differences in high level basketball players, Pehar et al. found that players from the first division were significantly taller than the players from the second division. Furthermore, Garcia-Gil et al. conducted regression analysis and found that body height was among the main predictors of performance index rating among elite female basketball players. Moreover, authors reported that the performance index rating correlated with the arm span and contracted arm perimeter. This could be also attributed to body height as taller people normally have longer hands, which reflects in longer arm span. These characteristics are of importance in basketball game during jumping (i.e., rebounding and blocking), defending the space (i.e., covers wider and higher space), and shooting or dunking (i.e., over shorter players). Thus, body height provides the advantage in every aspect of the game.

Handgrip strength is important in basketball as various movements rely on the continuous use of wrist and digits flexors in catching, holding, shooting and throwing the ball. The evaluation of handgrip strength is often used in basketball, since hand dynamometry is simple, not expensive, and a well-established method for assessing the strength of wrist and digits flexor muscles.

The performance in the vertical jump (VJ) is a very important variable in the assessment of muscle power levels produced by the muscles of the lower limbs. Hence, it is common to use the VJ as an important predictor of performance in different sports that require jumping skills. In this case, for basketball, the VJ performance is directly related to the player's performance, showing to be a deciding factor in the efficient execution of basket pitches, dunks, blocked shots, and rebounds. Ackland et al. reported that, on average, a basketball player jumps 46 ± 12 times per game. Hence, without question, success in basketball depends on the players' ability to jump vertically while combining shots with high level technical skill. **Keywords**: Age, Body composition, vertical jump, hand grip strength, basketball players, physical fitness, Pune University.

## METHODS AND METHODOLOGY:

To conduct these tests simple random sampling technique was used. The study group composed of 28 basketball players of Savitribai Phule Pune university, aged between 18-25 years. To conduct the above selected tests a digital hand grip dynamometer was used for grip strength measurement. During measurement values for both hands were obtained. For height and weight, stadiometer and weight machine were used. And to measure vertical jumping ability of players vertical jump test was conducted on all the basketball players.

## DATA ANALYSIS:

Descriptive statistics (mean, standard deviation, and range) were calculated by using Microsoft excel data analysis tool to summarize participant characteristics and test results.

**Table -1 (Basketball players cumulated data of all the 4 zones)**

| | **age** | **Height** | **weight** | **vertical jump** | **hand grip strength R** | **hand grip strength L** |
|---|---|---|---|---|---|---|
| Mean | 20.75 | 180.49 | 71.25 | 50.64 | 45.16 | 43.7 |
| Median | 21 | 179.05 | 68.45 | 51 | 42.65 | 40.75 |
| Mode | 19 | 167 | 65.1 | 46 | 42.3 | 40.6 |
| Range | 6 | 37 | 49.8 | 52 | 39.9 | 33.7 |
| Minimum | 18 | 166 | 52 | 13 | 30.6 | 30.3 |
| Maximum | 24 | 203 | 101.8 | 65 | 70.5 | 64 |

**Table-2 (Anova of all the selected basketball players)**

| | *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|---|
| Height | Between Groups | 238.31 | 3.00 | 79.44 | 0.84 | 0.49 | 3.01 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Weight | Between Groups | 418.85 | 3.00 | 139.62 | 0.82 | 0.49 | 3.01 |
| Vertical jump | Between Groups | 161.86 | 3.00 | 53.95 | 0.49 | 0.69 | 3.01 |
| Hand grip strength | Between Groups | 195.84 | 3.00 | 65.28 | 0.64 | 0.59 | 3.01 |

**LIMITATIONS:**

i. Small Sample Size– The study only included 28 players, which is a limited sample size to generalize findings across a larger population of basketball players.

ii. Restricted Demographics– The study focused solely on basketball players from Savitribai Phule Pune University, limiting its applicability to other universities, regions, or higher levels of competition.

iii. Limited Fitness Parameters– Only height, weight, hand grip strength, and vertical jump were considered, whereas other critical fitness parameters like agility, endurance, speed, flexibility, and reaction time were not included.

iv. Lack of Longitudinal Data – The study provides a cross-sectional analysis rather than tracking fitness changes over time, which could offer deeper insights into player development.

v. No Consideration of Playing Position–Players were not categorized based on their roles (guards, forwards, centre), which might influence physical attributes differently.

vi. Use of Basic Statistical Tools – The study relied on Microsoft Excel for data analysis, which may not be as robust as more advanced statistical software in detecting subtle differences.

**IMPLICATIONS:**

i. Need for Comprehensive Assessment– Future studies should incorporate additional fitness parameters, such as agility, endurance, and reaction time, to provide a more holistic view of basketball fitness.

ii. Training Program Development – Since no significant differences were found between zones, coaching programs can focus on individualized skill development rather than location-based fitness disparities.

iii. Potential Influence of Other Factors– The findings suggest that external factors like training methods, nutrition, and gameplay strategies may contribute more significantly to player performance.

iv. Future Research Directions– Conducting studies with a larger and more diverse sample, along with longitudinal tracking, can offer better insights into how physical fitness influences basketball performance over time.

v. Use of Advanced Statistical Methods– Employing more sophisticated statistical techniques could help detect minor but meaningful differences among players.

## SUMMARY:

The study aimed to compare the physical fitness parameters of basketball players from four zones—Pune City, Pune District, Nashik, and Sambhajinagar—under Savitribai Phule Pune University. A total of 28 players, aged 19-25 years, were assessed for height, weight, hand grip strength, and vertical jump using standard measurement tools. The data was analyzed using Microsoft Excel, and ANOVA tests were conducted to determine any significant differences among the zones. Results showed no statistically significant differences in any of the measured fitness parameters, as the p-values were all above 0.05. This indicates that players from different zones have relatively similar physical fitness levels. The study suggests that other fitness aspects, beyond the selected parameters, may influence basketball performance.

## CONCLUSION:

As per the analysis p -value of all test is much larger than the standard significance level of 0.05, so it concludes that there is no significant difference found between the Savitribai Phule Pune University zonal team basketball players based on the selected physical fitness parameters. Therefore, this also show that there might be other aspects of fitness which can affect basketball players performance.

**REFERENCES:**

Ackland, T. R., Schreiner, A. B., & Kerr, D. A. (1997). Absolute size and proportionality characteristics of World Championship female basketball players. *Journal of Sports Sciences, 15*(5), 485-490.

Cui, Y., Liu, F., Bao, D., Liu, H., Zhang, S., & Gómez, M.-Á. (2019). Key anthropometric and physical determinants for different playing positions during National Basketball Association draft combine test. *Frontiers in Psychology, 10.*

Dezman, B., Trninić, S., & Dizdar, D. (2001). Expert model of decision-making system for efficient orientation of basketball players to positions and roles in the game--empirical verification. *Collegium Antropologicum, 25*, 141-152.

Ferioli, D., Rampinini, E., Bosio, A., Torre, A. L., Azzolini, M., & Coutts, A. J. (2018). The physical profile of adult male basketball players: Differences between competitive levels and playing positions. *Journal of Sports Sciences, 36*(22), 2567-2574.

Garcia-Gil, M., Torres-Unda, J., Esain, I., Duñabeitia, I., Gil, S. M., Gil, J., & Irazusta, J. (2018). Anthropometric parameters, age, and agility as performance predictors in elite female basketball players. *Journal of Strength and Conditioning Research, 32*(5), 1723-1730.

Hahn, T., Foldspang, A., & Ingemann-Hansen, T. (1999). Dynamic strength of the quadriceps muscle and sports activity. *British Journal of Sports Medicine, 33*(2), 117-120.

Kalinski, M. I., Norkowski, H., Kerner, M. S., & others. (2002). Anaerobic power characteristics of elite athletes in national level team-sports games. *European Journal of Sport Science, 2*(1), 1-21.

Ostojic, S. M., Mazic, S., & Dikic, N. (2006). Profiling in basketball: Physical and physiological characteristics of elite players. *Journal of Strength and Conditioning Research, 20*(3), 740-744.

Pehar, M., Sekulic, D., Sisic, N., Spasic, M., Uljevic, O., Krolo, A., ... & Sattler, T. (2017). Evaluation of different jumping tests in defining position-specific and performance-level differences in high level basketball players. *Biology of Sport, 34*(3), 263-272.

Popović, S. (2018). Arm-span measurement as an alternative estimation of true height in Montenegrin young adults of both sexes: A national survey. *Anthropological Notebooks, 15*, 53-67.

Stojanović, E., Stojiljković, N., Scanlan, A. T., Dalbo, V. J., Berkelmans, D. M., & Milanović, Z. (2018). The activity demands and physiological responses encountered during basketball match-play: A systematic review. *Sports Medicine, 48*(1), 111-135.

Struzik, A., Pietraszewski, B., & Zawadzki, J. (2014). Biomechanical analysis of the jump shot in basketball. *Journal of Human Kinetics, 42*, 73-79.

Vaquera, A., Santiago, S., Gerardo, V. J., Carlos, M. J., & Vicente, G.-T. (2015). Anthropometric characteristics of Spanish professional basketball players. *Journal of Human Kinetics, 46*, 99-106.

Visnapuu, M., & Jurimae, T. (2007). Handgrip strength and hand dimensions in young handball and basketball players. *Journal of Strength and Conditioning Research, 21*(3), 923-929.

Zarić, I., Dopsaj, M., Marković, M., Zarić, M., Jakovljević, S., & Berić, D. (2020). Body composition characteristics measured by multichannel bioimpedance in young female basketball players: Relation with match performance. *International Journal of Morphology, 38*(1), 328-335.

Zarić, I., Dopsaj, M., & Marković, M. (2018). Match performance in young female basketball players: Relationship with laboratory and field tests. *International Journal of Performance Analysis in Sport, 18*(1), 90-103.

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# THE ROLE OF SPORT PSYCHOLOGY IN IMPROVING THE PERFORMANCE OF BADMINTON ATHLETES:

**Gayatri Kabade** **Prof. D. M Jyoti**
**Research Scholar** **Research Guide**
**Karnataka State Akkamahadevi Women University Vijayapura,**

## ABSTRACT

The present study aimed to investigate the relationship between selected co-ordinative abilities (agility, balance, reaction time, and speed) and psychological factors (anxiety, motivation, and self-confidence) among badminton players. A total of 100 badminton players (50 males and 50 females) participated in this study. The co-coordinative abilities were assessed using standardized tests, while the psychological factors were measured using validated questionnaires. The results revealed significant positive correlations between co-coordinative abilities and psychological factors. Specifically, agility, balance, and speed were found to be positively correlated with motivation and self-confidence, while reaction time was negatively correlated with anxiety. The findings suggest that badminton players with superior co-coordinative abilities tend to exhibit more Favor able psychological profiles, which may contribute to their success in the sport. The study's results have implications for coaches and trainers seeking to develop effective training programs that integrate physical and psychological components. The creating propensities in worldwide sports are recognized as the expansion in game beat, harder body game and more note worthy fluctuation in procedure and strategies. In standard, an expansion in execution level must be accomplished by better double-dealing of all significant parts for example procedure appointment, strategies, actual wellness and mental amounts of the sports person. The part strategy co-appointment nonetheless, assumes a larger part in sports.

## INTRODUCTION

The creating propensities in worldwide sports are recognized as the expansion in game beat, harder body game and more noteworthy fluctuation in procedure and strategies. In standard, an expansion in execution level must be accomplished by better double-dealing of all significant parts for example procedure appointment, strategies, actual wellness and mental amounts of the sportsperson. The part strategy co-appointment nonetheless, assumes a larger part in sports**.**

## CONTEXT & IMPORTANCE OF THE STUDY:

Why studying the relationship between coordinative abilities and psychological factors is relevant, especially in badminton.

Brief overview of how psychological factors (e.g., motivation, stress, focus) influence athletic performance.

The role of coordinative abilities (e.g., agility, balance, reaction time) in badminton.

## PURPOSE OF THE STUDY:

To explore how selected coordinative abilities (such as balance, reaction time, etc.) interact with psychological factors in badminton players.

## RESEARCH QUESTION/OBJECTIVE:

What is the relationship between the selected coordinative abilities and psychological factors among badminton players.

## LITERATURE REVIEW

Inspiration is a significant variable affecting exhibition and learning in sports, including badminton. (Li and Wen, 2019) recognize inherent inspiration, which starts inside the individual and is worried about the delight and fulfil mint got from the actual action, and outward inspiration, which is evoked by outer factors like prizes or acknowledgment. Research has shown that naturally spurred competitors will more often than not have higher determination, centre around private improvement, and experience more noteworthy fulfil mint in their game (*Almagro et al., 2020; Festiawan et al., 2024).*

## METHODOLOGY

### Participants:

How were the badminton players selected? (e.g., age, experience level, gender).

### Coordinative Ability Measures:

What specific coordinative abilities were measured (e.g., balance, agility, reaction time)?

**Psychological Factors:**

What psychological factors were assessed (e.g., motivation, focus, stress levels)?

**Data Collection Tools:**

Describe the instruments used (e.g., surveys, psychological tests, physical assessments).

**Analysis:**

How the data will be analyzed (e.g., statistical methods, correlation analysis).

## RESULTS AND DISCUSSION

**Coordinative Ability Findings:**

Summarize key findings regarding the participants' coordinative abilities.

Did certain coordinative abilities correlate with better performance or psychological factors?

**Psychological Factors Findings:**

Present findings on the psychological factors measured.

How do they correlate with athletic performance in badminton players?

**Relationship Between Coordinative Abilities and Psychological Factors:**

What patterns or relationships were observed between the two sets of factors?

Discuss the implications of these findings for training and performance enhancement in badminton players.

## CONCLUSION

**Summary of Findings:**

A recap of the key findings from the study.

**Practical Implications:**

How can coaches and athletes use the findings to improve performance

**Limitations and Future Research:**

Discuss any limitations of the study and potential areas for further research on this topic.

## REFERENCES

Bisht, R., & Mardikar, M. (2017). A comparative study of selected coordinative abilities among players belonging to semi-contact and non-contact sports of rashtrasant tukadoji maharaj Nagpur University, Nagpur. *International Journal of Researches in Biosciences, Agriculture & Technology*, *5*, 1-4.

Bafirman, B., Hidayat, R. A., Sabillah, M. I., Rahman, D., Zarya, F., Ockta, Y., & Festiawan, R. (2024). The role of sport psychology in improving the performance of badminton athletes: a systematic review. *Retos: nuevas tendencias en educación física, deporte y recreación*, (61), 1126-1137.protocol},

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# THE PHYSICAL LITERACY

**Dr. Mantripragada. Rambabu**

**Physical Education Teacher**

**Navy Children School Visakhapatnam**

**rambabumantripragada@gmail.com**

## ABSTRACT

Physical literacy is a multifaceted concept that encompasses the ability to move with competence with confidence. Physical Literacy is essential for promoting lifelong physical activity reducing risk of chronic diseases. The physical activity is a vital component of human development and also essential to provide with skills, knowledge and different attitudes to participate in physical activity throughout their life. Individuals can improve physical health, confidence, cognitive function, social skills and also self-esteem. Promoting physical literacy in individuals of all ages and abilities. **Key words**. Physical literacy, Game based skills, movement skills, physical fitness, health and wellness, chronic disease.

## INTRODUCTION

Physical Literacy is a critical concept that recognizes the importance of physical activity in promoting overall wellbeing and health. Taking part in Physical literacy individual can improve their physical health, confidence and self esteem. It is also increases the cognitive function and social skills.

**A. The elements of Physical Literacy.**

1.Motivation and Confidence (Affective)

2.Physical Competence (Physical)

3.Knowledge and Understanding (Cognitive)

4.Engagement in Physical Activities for Life (Behavioural)

B. **Importance of physical literacy for overall well-being:**

Social, Aesthetic, Competition and Survival

C**. Components Physical Literacy**.

Physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.

D. **Fundamental Movements.**

E. Physical Health Benefits improve your ability to do everyday activities improve cardiovascular ability.

F. Cognitive Benefits reduce your risk of cognitive decline, including dementia

Social and Emotional Benefits decreases stress, anxiety, and fatigue Improves confidence and well-being.

Long Term Implications improve muscular and cardiorespiratory fitness, improve bone functional health, reduce risk of hypertension, coronary heart disease, stroke, diabetes, cancer, reduce the risk of falls and hip fractures, help maintain body weight d with Process.


## CONCLUSION

Physical literacy is a vital and a critical concept that has the potential to transforms the way we approach physical activity and health. By promoting physical literacy, we can empower individuals to take control of their health and wellbeing.

## RECOMMENDATIONS

Integrate physical literacy in Education, Provide opportunities for physical activity. Promoting physical literacy in Community and by support Physical literacy research**.**

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# A STUDY ON THE EFFECT OF ASANA TRAINING ON STRENGTH, ENDURANCE AND FLEXIBILITY OF SCHOOL STUDENTS

**Bandi Renuka**
**Research scholar**
**Dr. BAM University,**
**Chh.Sambhajingar,**
**(Aurangabad)MS.**

**Prof. Dr. Shafioddin S. Shaik**
**Research guide, NKSPT ASC College,**
**Badnapur Dist, Jalna, MS.**

**ABSTRACT:**

The purpose of the study was to investigate A study on the Effect of Asana training on strength, endurance and flexibility of school students. The subjects for this study were forty girl students randomly selected from the data of ZPHS, Kamanapur, Peddapally, district of Telangana. The age of the subjects ranged between 15-17 years. The subjects were equally divided into two groups namely one experimental and one control group. The treatments to the experimental groups were assigned randomly; one for Asana and another group served as a control group. The treatment schedule was prepared for twelve weeks. The experimental treatments were employed for 1 hour a day for six days for twelve weeks duration. Pre and post-test data of all the subjects from the two groups were collected before and after the experimental treatment period of 12 weeks. The selected variables were Cardio-respiratory Endurance, Flexibility, and Muscular Strength. The data was analyzed by employing analysis of covariance at the 0.05 level of significance. The result of the study indicates that the practice of asanas had a significant effect on the Cardio-respiratory Endurance, Flexibility, Muscular and Strength of the subjects. **Keywords**: Asanas, cardio-respiratory endurance, flexibility, and muscular strength.

## INTRODUCTION:

Yoga is an Indian physical culture that anyone can practice. It does not require any special equipment or clothing, but it requires a small amount of space and a strong desire to heal one's life. Our body is essential for every achievement—not a body that is the bag of a living corpse, but a disease-free, strong, and healthy body. That is a body in which there is an equilibrium between physical well-being and mental well-being.

The word yoga comes from the Sanskrit word 'yuj' which means to unite or join. Yoga joins the individual soul to the universal soul i.e. God. Yoga is a timeless tradition, originating from Rig Veda, with a history of more than 5000 years. The father of yoga, Maharishi Patanjali, defines yoga as "Yogas Chitta Vritti Nirodhah" meaning "control of the fluctuations of the mind." Yoga is an inward journey that creates an awareness of yourself and leads you to self-transformation. It is an ancient science of self-development and a system that purifies your mind and body and maintains perfect balance and harmony between them. In another, it is an art of controlling your mind, body, and breath and unlocking the hidden potential energies. Yoga is a preventive care and holistic system of healing that protects and heals without any medication and natural beauty therapy that keeps you young and glowing from the inside. Yoga has also been described as wisdom in work or skillful living amongst activities, harmony, and moderation.

Yogic Asanas help in the prevention and cure of many physical diseases, especially those of the digestive tract by regulating the secretion of various duct and ductless glands. Apart from all these yoga is an extremely economical practice. The word asana is derived from the Sanskrit word 'Aas' which means 'existence', thus, the state of existence is Asana or Position. Patanjali defines Asana as a Steady and Comfortable position so the first and third steps, taking the asana and releasing the asana should also be supporting to the definition. "Practice of Asanas may be called an Exercise of a perfect scientific method". Asana is a specific position that opens the energy channels and psychic centers. Asanas help to improve the physical fitness of an individual. Asanas are practiced to develop the ability to sit comfortably in one position for an extended period; it is an ability necessary for meditation

Asana exercise purifies the ducts, gives the body firmness, and gives the body and mind energy. Yogasanas are easy exercises that help maintain the health of the body's interior and external aspects. No activity can be adequately completed unless the body's interior and external components are in good health.

**STATEMENT OF THE PROBLEM:**

This study evaluates the physical fitness of school students through the practice of asana training for girls' children of ZPHS, Kamanpur, Peddapalli, Telangana.

**PURPOSE OF FOR THE STUDY:**

The purpose of the study is to determine the physical status of girls children of Peddapalli, Telangana so that the selection and training of the students can be planned scientifically and methodically. Till now no specific study has been carried out on the physical aspects of the girl's children of the Peddapalli District of Telangana. Hence, there is a need to take up an empirical study to generate empirical information on the physical status of this study regarding various aspects. Therefore, the present study is an attempt to evaluate various aspects relating to the physical status of the girl's children of the Peddapalli District of Telangana.

**3. METHODOLOGY:**

**3.1. Methods of research:**

In the present study, a study on the Effect of Asana training on strength, endurance and flexibility of ZPHS, Kamanpur students of Peddapalli, Telangana state girls students will be used Experimental method. The training schedule is designed for the experimental group to practice asana training for 1 hour every day in the evening from 4.00 to 5 pm. Six days a week up to twelve weeks except on Sunday.

**3.2. Sampling design:**

The sample will be randomly selected for the girls' students of ZPHS, Kamanpur, Peddapally district of Telangana, as subjects between the age group of 15-17 years. The sample will be divided into equal groups called as control group and experimental group, each group consisting of 20 students.

**ASANAS FOR TRAINING:**

The selected Asana is practiced regularly for twelve weeks. Bhujangasana, Sarvangasana, Halasana, Salabhasana, Dhanurasana, Ustrasana, Chakrasana, Janu Sirsasana, Utthita Trikonasana, Matsyasana, Mayurasana, Gomukhasana, Ardha Matsyendrasana, Bhadrasana, Baddha Padmasana, Shavasana and Suryanamaskara asana.

**Sample of Yogasana Training:**

| Si. No | Category of the Subjects | Category | Age | Number of Subjects | Experimental Group (12 weeks) |
|---|---|---|---|---|---|
| 1 | Control Group | School students | 15-17 years | 20 | 20 |
| 2 | Experimental Group | School students | 15-17 years | 20 | 20 |
| | Total | | | 40 | 40 |

Forty ZPHS Kamanpur, Peddapally, district of Telangana, Girl's students (N- 40) were randomly selected. The selected students were randomly assigned into equal groups. The experimental group A-20 and the control group B-20 for the experiment. The asana training is 1 hour every day from 4.00 to 5 pm. Six days a week up to twelve weeks except on Sunday. During this time control group was not given Asana. Experimental and control groups were not controlled for their activity.

### 3.3. Collection of Data:

For this study Endurance, Strength, and Flexibility variables were chosen for the study. Standard test and measurement procedures were adopted to collect data for the study. The Endurance was measured with the help of 12 mint run and walk. Flexibility was measured with the help of sit and rich and Muscular Strength was measured with the help of standing broad jump. The Pre and post-test data of all the subjects from the two groups were collected before and after the experimental period of twelve weeks. The data was analyzed by employing analysis of covariance at the 0.05 level of significance.

### 3.4. Tests/ Tools used:

The table shows the variables, Tests/Tools, and the Unionist of Measurements of selected physical Variables used in this study.

**Showing the Physical Variables, Tests and Equipment required, and its Measuring Units.**

| 12S.NO | Variables | Test and equipment required | Measuring Units |
|---|---|---|---|
| 11 1 | Strength | Standing Broad jump | Meters |
| 22 2 | Endurance | 800-meter walk /Run | Minutes |
| 33 3 | Flexibility | Sit and reach the test | Centimeter |

### STATISTICAL PROCEDURE:

As per the research design the collected data were analyzed by employing standard statistical techniques used. Further, the results have been interpreted and discussed logically to conclude.

Number, Mean, Standard Deviation, mean deference, and 't' value of academic achievement of the student.

| S.No. | Group | N | Mean | Standard Deviation | Standard Deviation | 't' |
|---|---|---|---|---|---|---|
| Pre-test of the students. | Control group | 20 | 63.0124 | 18.886 | 1.42 | 0.256 |
| | Experimental group | 20 | 62.7272 | 18.787 | | |
| Post-test of the students. | Control group | 20 | 61.0324 | 18.782 | 2.13 | 1.129 |
| | Experimental group | 20 | 59.2321 | 16.024 | | |

It is seen from the table- Pre-test of the study evaluates the present study - Study on the Effect of Asana training on strength, endurance, and flexibility of school students of Zillah Parishad High School, Kamanpur, Peddapalli District student of Telangana through the regular practice of Asana, the mean score of control and experimental groups were 63.0124 and 62.7272 respectively. Whereas, the mean difference was 1.42 and the values of the t-test were 0.256 which was not significant. It reflects that the mean score pre-test of the Effect of Asana training on strength, endurance and flexibility of school students of the control group and experimental group do not differ significantly. This result indicates that the pre-test means of the Asana training group and control group in the test were similar.

The post-test of this study evaluates the Effect of Asana training on strength, endurance and flexibility of school students, the mean scores of the control and experimental group were 61.0324 and 59.2321 respectively. The mean difference was 16.124, and 't' value of the post-test was 1.129, which was significant. It reflects that the mean score of the post-test of the Effect of Asana training on strength, endurance and flexibility of school students of the control group and experimental group differed significantly.

**DISCUSSIONS/ FINDINGS**:

1. The control group of students had no significant change in their muscular strength, cardio-respiratory endurance, and flexibility even after 12 weeks.

2. The Experiment group of yogasanas played a significant effect on the strength, cardio-respiratory endurance, and flexibility of school students.

3. Yogasanas played a significant effect on the cardiorespiratory endurance of school students. The Significance of the data of pre and post-test scores of school students in cardio-respiratory endurance was tested by 't', This proved that the yogic group of the school student was significantly influenced in cardio-respiratory endurance than the control group.

4. Yogasanas played a significant effect on the flexibility of school students. The results of this research on the effect of yogic practices on flexibility were presented separately by using 't' test for statistical significance.

**RECOMMENDATIONS**:

The findings of this study proved that yogasanas significantly influenced the strength, cardio-respiratory endurance, and flexibility of school students hence, the educational authorities may consider the introduction of yogasanas in the school and college curriculum for the all-around development of the students. It is recommended that fitness centers introduce yogasanas in their fitness programs for the benefit of the people who approach them. It is recommended that physical educationists, coaches, and trainers include yoga asanas in their training schedule wherever players show a deficiency in selected motor fitness and physiological fitness.

**CONCLUSION:**

The analysis of motor ability components of strength, cardio-respiratory endurance, and flexibility of school students in the experiment group showed considerable improvement in strength, cardio-respiratory endurance, and flexibility after the twelve weeks of Yogasana practices. At the same time control group had not shown any significant change in any of the selected motor ability components.

**REFERENCES:**

1. Ghosh Badshah, Choudhary Binod. Effect of Selected Asanas and Kriyas on Cardio Respiratory and Body Composition Variables, Journal of Physical Education and Allied Sciences. 2011; 1(2):08-11.

2. Ghosh Badshah, Choudhary Binod. Role of Yoga Asasna and Pranayama on Cardio Respiratory Variables of College Youths, International Journal of Physical Education, Health and Social Science. 2014; 3(2):85-89.

3. Bera TK. Physical Work Capacity and Oxygen Consumption in Exercise and Yoga. Yoga Mimamsa. 2002; 35:183-192.

4. Chen TL, Mao HC, Lai CH, Li CY, Kuo CH. The effect of yoga exercise intervention on health-related physical fitness. In school-age asthmatic chi

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# INTER-RELATIONSHIP OF DEPRESSION, ANXIETY AND STRESS OF KARNATAKA STATE LEVEL MALE KABADDI PLAYERS

**AUTHOR**

**ADITHI M B**

**Research Scholar**

**Karnataka State Akkamahadevi Women University, Vijayapura**

**E-Mail ID: adithigowda205@gmail.com**

**CO-AUTHOR**

**Prof. Hanumanthayya Pujari**

**Department of Studies in Physical Education and Sports Science's,**

**Karnataka State Akkamahadevi Women University, Vijayapura**

**E-Mail ID: hgpujaru@gmail.com**

**ABSTRACT:**

The intension of the study was to examine the Inter-Relationship of Depression Stress and Anxiety of Karnataka State Level Men Kabaddi Players. For the purpose of research, the researcher has selected 50 men subjects from the participated Karnataka State Level Kabaddi tournaments by using purposive sampling technique. The Depression Anxiety Stress Scale (DASS 21) was used to collect the required data for assessment. To analyses the collected data Spearman's Rank Correlation has been used. The significance level was set at 0.05 level of confidence. The study's results indicate that Depression was significantly and positively correlated with the Stress score. Correlated coefficient .302 was found to be significant at .033 level in other word higher the Depression, more was the Stress. However, Depression and Anxiety as well as Anxiety and Stress were not significantly related to each other. **Keywords**: Kabaddi, Depression, Anxiety and Stress.

## INTRODUCTION:

**Kabaddi** players, like athletes in any competitive sport, often experience Anxiety, Stress, and Depression due to the high-pressure demands of the game. Factors such as intense physical exertion fear of future, and the pressure to perform under scrutiny can significantly impact their mental health and overall performance. However, research suggests that kabaddi players generally exhibit a normal level of Anxiety compared to

athletes in other sports, with effective coping mechanisms and mental training playing a crucial role in managing these challenges. If left unaddressed, these psychological stressors can negatively affect performance, leading to increased fatigue even during simple skills, frustration over minor mistakes, and persistent body aches and pains.

**STATEMENT OF THE PROBLEM:**

The target of the study is to find out the interrelationship of Depression Anxiety and Stress of Karnataka State Male Kabaddi Players.

**OBJECTIVE:**

To know the interrelationship between Depression, Anxiety and Stress of Karnataka State Male Kabaddi layers.

**METHOD:**

To fulfill the purpose of the present study the researcher was selected the 50 samples from various undergraduates and postgraduate college of Karnataka State. The subjects were between 18 to 25 years. Depression Anxiety Stress Scale (DASS 21) Questionnaire was used to collect the required data for assessment.

**HYPOTHESIS:**

There is no notable interrelationship between Depression, Anxiety and Stress of Karnataka State Male Kabaddi player.

**STATISTICAL TECHNIQUE:**

To analysis the data the statistical techniques employed are Descriptive statistics, Frequency Percent mean, standard deviation, inferential statistics, Chi square test and person product moment correlation.

## ANALYSIS AND INTERPRETATION

**Table- 1: Depression, Anxiety and Stress score of Kabaddi players analyse**

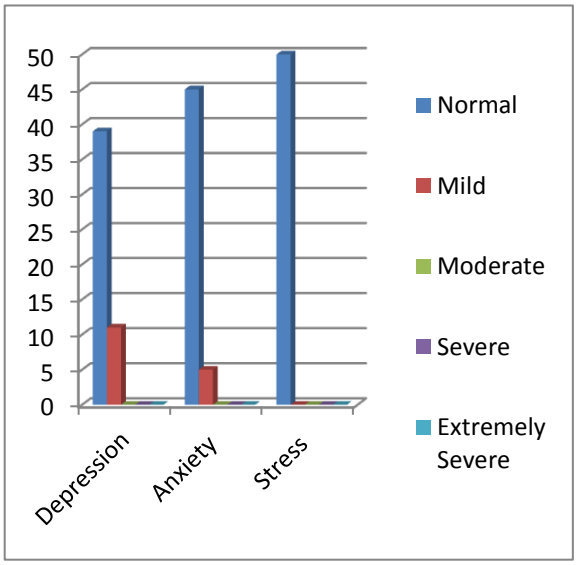


Figure 1: Frequency Table of Depression, Anxiety and Stress

**DEPRESSION:**

Depression score of Kabaddi players analyze majority of 78% were normal and 22% of them had mild Depression none of them were found to have moderate, severe, extremely severe levels of Depression. When chi-squared test was applied to this frequency (Chi square=15.68; p=.001) reviled the significant value indicating that majority of them were normal.

**ANXIETY:**

Anxiety score of Kabaddi players analyze majority of 90% were normal and 10% of them had mild Anxiety none of them were found to have moderate severe extremely severe levels of Anxiety. When Chi-square test was applied to this frequency (Chi square = 32.00; p= .001) reviled the significant value indicating that majority of them were normal.

**Stress:** Stress all of them found to be normal.

**Table -2: The mean Depression score of selected sample**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Depression | 50 | .00 | 14.00 | 6.5400 | 3.31484 |
| Anxiety | 50 | 1.00 | 16.00 | 4.8400 | 3.16460 |

| | | | | | |
|---|---|---|---|---|---|
| Stress | 50 | 2.00 | 14.00 | 7.3800 | 3.07651 |

- The mean Depression score of selected samples was found to be 6.54 with the standard deviation of3.31. The minimum of maximum Depression score for the selected sample were 0 and 14 respectively.
- The mean Anxiety score of selected samples was found to be 4.84 with the standard deviation of 3.16. The minimum of maximum Anxiety score for the selected sample were 1 and 16 respectively.
- The mean Stress score of selected samples was found to be 7.38 with the standard deviation of 3.07. The minimum of maximum Stress score for the selected sample were 2 and 14 respectively.

**Table - 3: Relationship between Depression Anxiety and Stress**

| V1 | V2 | R | Significant |
|---|---|---|---|
| Depression | Anxiety | .158 | .273 |
| Depression | Stress | .302 | .033 |
| Anxiety | Stress | .149 | .302 |

Relationship between Depression Anxiety and Stress form the table it's clear that Depression was significantly and positively correlated with the Stress score. Correlated coefficient .302 was found to be significant at. 033 level in other word higher the Depression, more was the Stress. However, Depression and Anxiety as well as Anxiety and Stress were not significantly related to each other.

**MAJOR FINDINGS OF THE STUDY:**

1. Majority of 78% were normal and 22% of them had mild Depression none of them were found to have moderate, severe, extremely severe levels of Depression. The value indicates that majority of them were normal.
2. Anxiety score of Kabaddi players analyze majority of 90% were normal and 10% of them had mild Anxiety none of them were found to have moderate severe extremely severe levels of Anxiety. The value indicating that majority of them was normal. The mean Anxiety score of selected samples was found to be 4.84 with the standard deviation of 3.16. The minimum of maximum Anxiety score for the selected sample were 1 and 16 respectively.

3. Depression was significantly and positively correlated with the Stress score. In other word higher, the Depression more was the Stress. However, Depression and Anxiety as well as Anxiety and Stress were not significantly related to each other.

## DISCUSSION:

The Hypothesis formulated for the thesis was accepted has analysis revealed non-significant relationship among Depression Anxiety and Stress.

Some previous studies of **Baum A (1990)** have shown that adolescent behavior is highly determined by the emotions whereas Stress in adolescent pupils was a risk factor for the development of internalizing problems such as Anxiety and Depression and **Sash Khan & Rafiq alma khan (2017)** in their study found that Anxiety, Depression and Stress are psychiatric disorder. These are very harmful to the normal conditional mind. And some studies have found a link between Stress and Anxiety, Depression. If untreated or neglected, it could be hazardous.

Kabaddi is a power game which demands technical and tactical skills along with the fitness. In keen competitions Kabaddi players has to sustain pressure of the game because winning becomes most important. During this situation the Kabaddi players need to control their Anxiety, Depression and Stress level to win the match. But all the Kabaddi players couldn't able to control these factors and they become more depressed and excited under Stress. In the present study subject selected were Karnataka State players and they are not exposed to higher level competitions. This may be the reason for the result for present study.

## CONCLUSION:

Now a day Kabaddi is very popular game after Pro Kabaddi was introduced. Because of this demands the Kabaddi players play aggressively under Stress, Depression and Anxiety to win the match. Psychological factors definitely play importance role in the performance in Kabaddi competition these factors directly or indirectly influence the players to perform better.

## RECOMMENDATIONS:

1 This study may be conducted on college students of different disciplines and level of Physical fitness can be studied in relation to the Emotional Intelligence.

2 The level of Achievement, Depression, Stress and Anxiety can be studied in relation with the Emotional Intelligence.

## BIBLIOGRAPHY

1. "A Comparative study on Stress and its contributing factors among the Graduate and Post-graduate students" Harajyoti Mazumdar: 2012
2. 20 Depression, Anxiety and Stress Scales (DASS- 21) Juan Anibal González-Rivera: 2020
3. compare the mental Depression among the Kho-Kho men players of Maharashtra & Rajasthan state universities. Ramdas Jadhav October 2014
4. Comparison of Depression between the Kho-Kho players of Gujarat & Rajasthan state universities Ramdas Jadhav January 2014.

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# MINDFULNESS AND YOGA FOR DIFFERENTLY-ABLED CHILDREN: A HOLISTIC APPROACH TO GROWTH AND DEVELOPMENT

**[1]Magan Singh Yadav,**
**[1]Research Scholar, Department of Physical Education,**
**Central University of Punjab Bathinda India**

**[2]Dr. Ganesh Shankar Pandey**
**[2]Assistant Professor, Department of Physical Education,**
**Central University of Punjab Bathinda India**

**ABSTRACT:**

In this paper, we highlight the significance of yoga practice for children and youth with disabilities. We suggest the possibility of modifying certain asanas (body postures) to make them accessible to children and youth with disabilities while ensuring they receive the necessary attention for maximum benefit. It can be concluded that the advantages of yoga practice should be explored in terms of the equilibrium among the digestive, cardiovascular, skeletal, and muscular systems. Positive changes in children's development have been observed improvements in motor coordination, as well as heightened body awareness and orientation, have been achieved. Engaging in yoga practice also enhances learning, fosters creativity, and stimulates imagination. Consequently, yoga increasingly complements an individual's established medical care, therapeutic programs, and exercise routines. **Key words:** yoga, mindfulness practices, kids with disabilities, growth, well-being

## INTRODUCTION

Yoga originated in India as a practice focused on self-improvement. It encompasses the development of both the body and mind with the goal of achieving harmony and unity, offering numerous health benefits. Through yoga, practitioners can attain physical and mental well-being and unlock their full potential. Asanas (body positions) invigorate internal organs, the nervous system, and enhance blood circulation throughout the body's primary organs and glands. Engaging in yoga improves concentration, promotes relaxation of the mind and body, and fosters a sense of calm.

Students who engage in yoga experience fewer behavioral issues, achieve higher academic performance, and maintain greater physical fitness.

They also develop a heightened sense of self-esteem and confidence. The advantages of practicing yoga are especially significant for children and adolescents with disabilities.

Many physiotherapists, recognizing the benefits of yoga, suggest it for children and young people with disabilities. Yoga has proven beneficial for kids with Down syndrome, cystic fibrosis, attention deficit disorder, and autism.

Through yoga practice, they can enhance their motor skills, improve flexibility, increase awareness of muscle groups and movement, achieve better articulation, and develop improved eye contact and social abilities. If a child has physical limitations, the poses (asanas) can be modified to accommodate their abilities.

Yoga promotes the cultivation of healthy habits in young people, which they can maintain throughout their lives. This paper aims to discuss the ways in which yoga practice can benefit the health of children and youth with disabilities.

## IMPORTANCE OF ENGAGING IN YOGA PRACTICE

In today's world, an increasing number of individuals are turning to yoga as a solution for chronic health issues and to achieve mental tranquility. They are also eager to understand what yoga truly is and what it entails. While yoga encompasses physical postures (asanas), it extends far beyond that. It is a comprehensive system focused on the "union of mind, body, and spirit." As a practice, yoga assists individuals in attaining a balance between their physical and mental states, guiding them toward greater awareness. The approach of yoga consists of yama and niyama (the ethical and philosophical components), asanas (physical postures), and pranayama (methods for controlling energy through breath). Pratyahara involves becoming aware of sensory impressions, while meditation and concentration lead to elevated states of consciousness. Engaging in yoga is linked to a healthy way of living and promotes a well-rounded approach to life.

## HEALTH ADVANTAGES FOR YOUNG INDIVIDUALS WITH DISABILITIES.

Every pose (asana) can be adjusted or customized to suit the individual's needs. Asanas can be practiced while sitting in a chair or wheelchair. "Chair Yoga" was created for those dealing with conditions such as arthritis, chronic obstructive pulmonary disease, multiple sclerosis, osteoporosis, and the aftereffects of a stroke.

Yoga practice affects the individual as a whole. It is recommended for easing anxiety, mild depression, stress, post-traumatic stress disorder, and medical issues related to stress.

Yoga serves as a supplementary practice alongside established medical treatments, therapy programs, and fitness routines.

Additionally, yoga benefits the digestive system by encouraging stimulation of the abdominal organs through bending and stretching poses; it aids in the recovery of cardiovascular and pulmonary systems (heart and lungs) as more dynamic poses enhance heart rate and lung capacity through aerobic exercise; and it supports the lymphatic system, which is crucial for immune function. We should also recognize the significance of the interaction between the lungs, diaphragm, and thorax.

Practitioners often emphasize the importance of yoga for the health of the skeletal and muscular systems, as well as achieving flexibility and vitality in the muscles.

For children and adolescents with disabilities, engaging in yoga offers advantages for their development.

1) Improvement in motor coordination.

2) Enhanced body awareness and spatial orientation.

3) Increased focus and concentration.

4) Boosted learning abilities, creativity, and imagination.

Practicing yoga can offer both preventive and therapeutic advantages. According to existing research, numerous health benefits include;

1) Developing strength, toning, and muscle growth;

2) Enhancing flexibility and mobility in muscles and joints;

3) Improving posture;

4) Fortifying the spine;

5) Alleviating back pain;

6) Addressing musculoskeletal issues like bad knees, tight shoulders and neck, swayback, and scoliosis;

7) Increasing endurance;

8) Promoting balance and grace;

9) Assisting with respiratory disorders;

10) Stimulating the glands within the endocrine system;

11) Enhancing digestion and waste elimination;

12) Boosting circulation;

13) Benefitting heart health;

14) Strengthening the immune response;

15) Lowering cholesterol and blood sugar levels;

Engaging in yoga enhances awareness of the body, alleviates stress, promotes muscle flexibility, and fosters relaxation of both mind and body, while also cultivating focused attention and improved concentration.

It's important to acknowledge that children with disabilities have the same needs as their peers: they desire acceptance, respect, self-esteem, friendships, playtime, and concentration. Studies indicate that children with disabilities who participate in yoga often achieve better academic results, show greater emotional vulnerability, and express a stronger longing for social connections. They also share the same interests as all kids. Children with disabilities can accomplish anything; they just need support from their surrounding community.

It's essential to consider the child in terms of all their needs and potentials. A disability is just one facet of the child's identity and does not determine their true self or what they can accomplish. It's beneficial for parents or caregivers to recognize yoga as an additional option that can enhance the support the child may already be receiving from family members and professionals.

Individuals with disabilities or chronic health conditions should ideally engage in yoga practices led by certified yoga therapists or instructors who possess the necessary expertise in working with children and youths with disabilities. In yoga sessions tailored for these individuals, yoga postures (asanas) are adjusted or modified as needed, often with the instructor providing active support. While the instructor aids the child in achieving the asanas, it is essential to remember that the child is still actively participating in the exercise. It is advisable for yoga instructors to start children with disabilities in smaller classes and gradually transition them to larger group sessions when they feel ready. Prior to the initial yoga class, the certified instructor should inquire with the parents or caregivers about relevant medical information, the recommendations from the child's physician, and whether consent has been granted by the parent or caregiver, as well as evaluate the child's muscle spasm level, hypertonicity, or hypotonicity, which reflects

their current physical capabilities and challenges. Communicating with the student's parent or guardian can reveal the medications the student is currently using or has recently discontinued, as this may influence their physical, mental, and emotional well-being. Certain medications might render it unsafe for the student to practice inverted postures. Consequently, the certified yoga instructor ought to: request a written assessment or consultation from the child's physician (or physiotherapist); clearly outline the various poses (asanas) suitable for the student; and secure approval from both the doctor and parent or guardian before commencing an exercise regimen.

Understanding other medical issues helps the instructor prepare themselves appropriately. Knowledge about a student's dietary habits is also beneficial.

When crafting a yoga session tailored for a student, it is important to consider their personality, behavior, and ability to focus. If a student tends to be excitable, hyperactive, or easily distracted, the instructor might encourage them to spend shorter durations in each posture and dedicate more time to pranayama and relaxation with music.

The instructor should select physical postures (asanas) that enhance focus and concentration while also providing a calming effect. Incorporating a game or storytelling element that includes physical postures (asanas) keeps the student engaged and active during the yoga session. The yoga instructor is encouraged to be inventive with each session while adhering to the core structure of the class. Even when leading a group class (lasting 45-55 minutes), the instructor is expected to provide.

**EQUIPMENT USED IN THE CLASSROOM FOR INDIVIDUALS WITH DISABILITIES:**

Yoga can be practiced without the need for extra gear. It can be done both outside and inside. Generally, a yoga mat or a thick mattress serves as the surface. There are also latex-free, eco-friendly yoga mats on the market. Having a tissue nearby, like a handkerchief or gamchha, can be helpful during breathing exercises if you need to clear your nose. A lightweight blanket may be utilized during deep relaxation sessions.

Yoga poses (asanas) synchronize breath and movement while fortifying different parts of the body. Engaging in yoga poses (asanas) complements other exercise methods, particularly running, swimming, cycling, and strength training for sports, as these poses systematically engage all primary muscle groups, including those in the legs, arms, abdomen, back, buttocks, neck, and shoulders. Yoga poses (asanas) stimulate both major and minor muscle groups as well as organs, while simultaneously enhancing strength,

flexibility, and overall activity. While many asanas aren't aerobic, they do facilitate oxygen delivery to the body's cells by utilizing intentional deep breathing (pranayama) along with continuous stretching and contracting of different muscle groups. This has positive effects on our body.

## KNOWLEDGE OF GIVING YOGA CLASSES:

Even the most esteemed Indian yoga teachers view themselves as learners in the practice of yoga. There is no perfect yoga position, and the learning process is never complete. Yoga teachers impart two fundamental ideas to their students: that every body is inherently good and beautiful (the idea of acceptance) and that each person progresses at their own pace (the principle of reaching one's individual daily potential). A yoga pose (asana) may feel comfortable to one individual, be detrimental to another, and present a challenge for yet another, even within the same family. When parents engage in yoga alongside their child, they should promote the idea of simply doing their best within the realm of enjoyable feelings. This principle also holds true for yoga instructors. They should frequently acknowledge and commend the child's efforts. Children should be encouraged to take pride in their achievements and the work they put in. Qualified yoga instructors can create an experience that is fun, comfortable, and accessible for children and young people with disabilities.

**Let the child practice two postures that he feels comfortable with:** Students should not be required to execute the asanas precisely as instructed. In Vrksasana, the foot can be positioned on the knee, shin, or thigh. If this proves too difficult, resting the toes on the floor with the heel against the ankle is also an option. Offer your child some assistance with the asanas while they attempt them independently. For instance, during Downward Facing Dog Pose, you may elevate your child's hips. In Vrksasana, you can raise your child's arms. Motivate your child to take deep breaths while practicing the asanas.

**Try yoga in pairs of two:** Practicing the double tree pose has been beneficial. Position yourselves in front of a mirror where you and your child can both perform the tree pose, with your child's back against your torso (you can raise your child's arms for added support or to assist one another in maintaining balance). Share smiles in the mirror to uplift each other.

**Encourage your child to do yoga on his own**: Motivate children to practice yoga using a wall for support, which will aid in achieving balance. To assist children in enhancing their concentration (tratak), position a small object 1-3 meters ahead of them to provide a focal point while they balance. For those hesitant to shut their eyes during relaxation, suggest covering them with a soft fabric.

**Create a natural and pleasant environment**: To assist the child in getting ready for yoga class, select a unique location that is as tidy and lush as possible. Ensure the area you pick is tranquil and devoid of interruptions. Prior to the yoga session, you might also play soothing music and lower the lights to establish a serene environment.

**use a sticky mat:** Yoga mats are used to keep the hands and feet of the practitioners from slipping. It is a comfortable way to help children with disabilities learn about space and boundaries.

**Make sure the beginning and end are clear:** Begin the yoga session by closing your eyes, focusing on breathing and stillness for at least 50-60 seconds. You can also repeat the saying "I am on earth and the beginning is from me". The end is as important as the beginning. After relaxing, thank the children for spending time together.

## CONCLUSION

Yoga signifies the integration of mind, body, and spirit. It is widely recognized as a valuable tool in enhancing the physical, mental, and emotional well-being of children and young individuals with disabilities. Through the practice of yoga, children can learn to unwind, concentrate their energy, and cultivate balance, strength, and flexibility; they also gain insights into achieving peace of mind, self-awareness, and recognizing their own value relative to others. Engaging in yoga can enhance cognitive and motor abilities in children facing learning and developmental challenges, and I firmly believe that if yoga is practiced every day, it can lead to overall improvement.

## REFERENCES:

1. Chittoor, J. S. (2011). Yoga for children with disabilities. International Scientific Yoga Journal. SENSE, 374-380.
2. White, L. S. (2009). Yoga for children. *Pediatric nursing*, *35*(5), 277.
3. Chapman, K. L., & Bredin, S. S. (2010). Why yoga? An introduction to philosophy, practice, and the role of yoga in health promotion and disease prevention. *The Health & Fitness Journal of Canada*, *3*(2), 13-21.
4. Chittoor, J. S. (2011). Yoga for children with disabilities. *International Scientific Yoga Journal. SENSE*, 374-380.

5. Ramanathan, M. *Yoga for the Differently-Abled Children*.
6. Brena, Steven. Yoga & Medicine. Baltimore, Md.: Penguin Books, 1973.
7. Criswell, Eleanor. How Yoga Works: An Introduction to Somatic Yoga. Novato, Calif.: Freeperson Press, 1987
8. Desikachar, T. K. V. The Heart of Yoga: Developing a Personal Practice. Rochester, Vermont: Inner Traditions International, 1995.
9. Feuerstein, Georg. The Yoga Tradition: Its History, Literature, Philosophy, and Practice. Prescott, Arizona: Hohm Press, 1998.
10. Iyengar, B. K. S. Light on Yoga. New York: Schocken Books, 1966. * Light on Pranayama. New York: Crossroad, 1995.
11. Monro, Robin, R. Nagarathna, and H. R. Nagendra. Yoga for Common Ailments. London: Gaia Books, 1990.
12. Murphy, Michael, and Steven Donovan. The Physical and Psychological Effects of Meditation: A Review of Contemporary Research with a Comprehensive Bibliography 1931-1996. Sausalito, Calif.: Institute of Noetic Sciences, 1997.
13. Olsen, Peo. Medical & Psychological Scientific Research on Yoga & Meditation. Copenhagen: Scandinavian Yoga and Meditationschool, 1978.
14. Rama, Swami, Rudolph Ballentine, and Swami Ajaya (Allan Weinstock). Yoga and Psychotherapy: The Evolution of Consciousness. Glenview, Ill.: Himalayan Institute, 1976
15. . The Shambhala Encyclopedia of Yoga. Boston, Mass.: Shambhala Publications, 1996.

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# "RELATIONSHIP BETWEEN ANXIETY AND BEHAVIOUR OF BENGALURU UNIVERSITY INTER-COLLEGIATE MEN KABADDI PLAYERS".

**AUTHOR**

**Mahachethan V**

**Research Scholar**

**Annamalai University, Tamil Nadu.**

**E-Mail ID: mahachethan.v1987@gmail.com**

**CO-AUTHOR**

**Dr. Subradeepan A**

**Assistant Professor, Department of Physical Education**

**Annamalai University, Tamil Nadu.**

**E-Mail ID: deepan4259@gmail.com**

**ABSTRACT:**

This research was to investigate the relationship between Anxiety and Behaviour of the Bengaluru University Inter-Collegiate Men Kabaddi players. For the purpose of research, the investigator has selected 50 Men subjects from the different institutes of Bengaluru University by using purposive sampling technique. SCAT and Blanchard Behaviour Rating Test questionnaires were used to measure Anxiety and Behaviour of the Men Kabaddi players. To analyze the collected data spearman's rank correlation has been used by using the SPSS application. The result of the investigation shows that there is non-significant difference between Anxiety and Behaviour among Men Kabaddi Players of Bengaluru University. The average score of all the Men Kabaddi players on the Behaviour scale was very high. The Men Kabaddi players had an average level of Anxiety. There is no relationship between Anxiety and Behaviour. The researcher concludes that psychological factors influence the personality of sports persons and it has direct or indirect influence on their sports performance. **Keywords**: Kabaddi, Anxiety, Behaviour.

## INTRODUCTION

Kabaddi is a combative team sport played without any equipment. Like any other sporting event Kabaddi also required high level fitness and presence of mind. Game performance has been found to be related to psychological variables such as Anxiety, Motivation, Stress, Personality and Behaviour. The Kabaddi game

also needs psychological qualities for higher level performance. Among many psychological factors Anxiety influences performance during competition. Anxiety refers to that emotional state of mind where a fear of danger or loss of suffering is a prominent feature. Behaviour is a response or a reaction of an individual or an activity in which the individual is engaged in. It pertains to ethical Behaviour, fair play and respect for the sport, the participants and the spectators.

**STATEMENT OF THE STUDY:**

The objective of the study is to know the "Relationship between Anxiety and Behaviour of Bengaluru University Inter-Collegiate Men Kabaddi Players".

**OBJECTIVES**:

The objective of the investigation is to assess the difference of Anxiety and Behaviour in Men Kabaddi players and to know the relationship of Anxiety to Behaviour of Inter-Collegiate Men Kabaddi players.

**METHOD**

This research is confined to the fifty [n=50] from only Bengaluru University Inter-Collegiate Men Kabaddi players. The subjects were between 18 to 25 years. SCAT was used for Anxiety assessment made by martens, R, ET. al. (1990). To assess Behaviour only Blanchard Behaviour rating scale was used.

**HYPOTHESES**

There is no significant relationship between Behaviour and Anxiety of Bengaluru University Inter-Collegiate Men Kabaddi players.

**STATISTICAL ANALYSIS**

The data analysis involved descriptive statistics, including frequency, percentage, mean, and standard deviation. For inferential statistics, the Chi-Square test and one-way ANOVA were employed. Additionally, to examine the relationship between Anxiety and Behaviour among male Inter-Collegiate Kabaddi players of Bengaluru University, Spearman's Rank Correlation was utilized using the SPSS application.

**ANALYSIS & INTERPRETATION OF DATA**

**Table: 1 Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| anx | 50 | 14.00 | 25.00 | 20.0800 | 2.80553 |
| beh | 50 | 41.00 | 106.00 | 76.0200 | 16.69228 |

**Anxiety:** The mean Anxiety scores of Kabaddi players were 19.58 with the value of 3.34. The minimum and maximum Anxiety scores are 13 and 25 respectively.

**Sports-Behaviour:** The main sports Behaviour score of the sample was found to be 76.42 SD value of 20.54. The minimum and maximum sports Behaviour scores were 42 and 104 respectively.

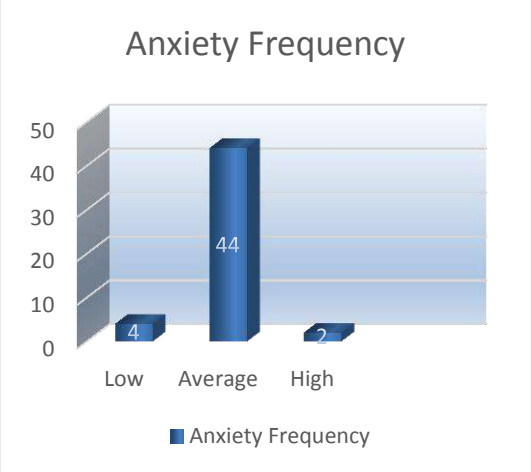


**Figure – 1 : Showing the Frequency Level of Anxiety**

There were 8% of the participants having low level of Anxiety and 6% of them having high levels of Anxiety. However, a majority of 88% of the respondents had Average level of Anxiety. Further, the chi-square test revealed a highly significant difference (X2= 67.360; p= .001) indicating that majority of the female Kabaddi players had average level of Anxiety. The mean scores all the female Kabaddi players on Anxiety was 20.08.

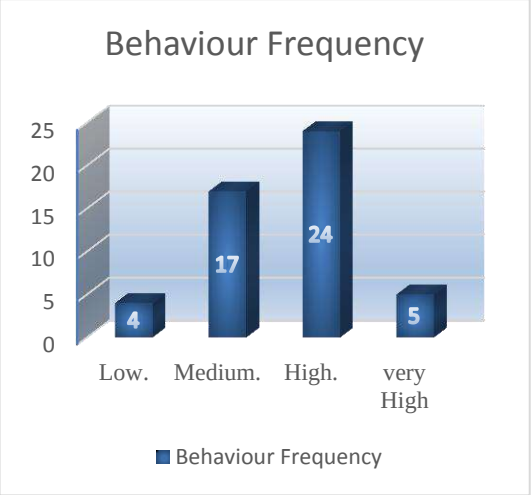


**Figure – 2 : Showing the Frequency Level of Behaviour**

On the behavior scale, 8% of the participants had low behavior, 34% of them had medium behavior and 48% of them had high level of behavior while the remaining 10% had very high behavior. The average score of all the female Kabaddi players on the behavior scale was 76.02. Further, the chi-square test revealed a significant difference (X2= 22.480; p= .001) which indicates that 82% of the female Kabaddi players had medium-high levels of behavior.

**Table : 2 Chi-Square Test & Correlations**

| **Chi-Square Test** | anx_c | beh_c |
|---|---|---|
| Chi-Square | 67.360 | 22.480 |
| Df | 2 | 3 |
| Asymp. Sig. | .000 | .000 |

| **Correlations** | | anx | Beh |
|---|---|---|---|
| Anx | Pearson Correlation | 1 | -0.094 |
| | Sig. (2-tailed) | | 0.515 |
| | N | 50 | 50 |
| Beh | Pearson Correlation | -0.094 | 1 |
| | Sig. (2-tailed) | 0.515 | |
| | N | 50 | 50 |

The correlation between Anxiety and Behaviour score was found to be 0.094 with a significance level of 0.515.

**MAJOR FINDINGS:**

- There is no relationship between Anxiety and behavior among female Kabaddi players and the average score of all the female Kabaddi players on the behavior scale was very high.
- The female Kabaddi players had average level of Anxiety and there is no relationship between Anxiety & Behaviour.

**DISCUSSIONS:**

Hypothesis formulated for present analysis is accepted as analyses formulated that there is non-significant relationship between Anxiety and sports Behaviour of Inter-Collegiate Men Kabaddi players.

The nature of Kabaddi games is explosive and dynamic players Behaviour. Also modify the nature of the game. The Men Kabaddi players are not apart from this quality. Also they modify their Behaviour in sports and they will be different from normal females. The Anxiety level is recovered to different degrees for different sports. It is proved that Anxiety is needed to achieve in sports. The Men Kabaddi players during matches may increase their Anxiety level. As match gets highly competitive, but their Behaviour won't change according to the situation. Because Behaviour factors need a long duration to develop in a person. These facts of Anxiety and Behaviour may be the reason for present study results.

## CONCLUSION

Anxiety is definitely required in all sports performance but players have to control level of Anxiety as per the requirement of the game. Behaviour also plays an important role on sportspersons in all the situations because mind is the controller of Behaviour factors. During training coaches and trainers include psychological aspects of Anxiety and Behaviour in their training schedule to enhance the performance.

## RECOMMENDATIONS:

1. A study can be carried out on large number of players in both categories to find out why there is no relationship between Behaviour and Anxiety.
2. It was recommended that psychological variables may be tested with the other sport.
3. The levels of Anxiety and Behaviour among sportspersons at different levels of competitions may be pursued by the future investigators.
4. The University authorities shall advice the coaches and managers who train the sports persons to adopt suitable strategy to enhance Anxiety and Behaviour among players.
5. Similar studies may be undertaken in different age groups and gender.

## REFERENCES

- Alderman (1974)" Psychological Behaviour in Sports
- Megan M. Buning, (2015)'' Coaching Behaviours and Athlete Motivation: Female Softball
- Mohammad Ahsan, (2014)''. A Study of Competitive Sport Anxiety in Young Soccer Players April 2014
- **jitandra Mohan (2015) al** "sports psychology, alti met spring board of excellent 41(3),50
- **.Dr Suneeta devi(2017)al** "the effects of ball badminton game on the rallying ability of the badminton players at inter college level issn..2277- 9655

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# EXPLORING THE ROLE OF OUTDOOR EDUCATION IN PHYSICAL EDUCATION PROGRAMS"

**M. Rahul[1]**
**Research Scholar**
**Dept of Physical Education and Sports Science**
**Vijayanagara Sri Krishnadevaraya University Ballari**

**Dr. Sampath Kumar[2]**
**Assistant Professor**
**Dept of Physical Education and Sports Science**
**Vijayanagara Sri Krishnadevaraya University Ballari**

**ABSTRACT:**

Physical education is an essential component of a well-rounded education, encouraging physical health, teamwork, and overall well-being. While standard physical education sessions are often held indoors, outdoor education provides a unique and enriching option. In this essay, we'll look at the aspects of outdoor education as part of physical education. This study is to provide a complete review of the substantial global research on outdoor learning and its benefits to human growth, well-being, and advancement. Insights from the comprehensive review will assist frontline educators, educational policymakers, and teacher-training institutions in improving students' educational experiences, particularly in Physical Education. In this paper, we will discuss. Examining the role of outdoor education in physical education curriculum. **Keywords:** Outdoor Education, Physical Education, Well-Being, Children, Developmental Process, Physical Activity, Environmental Growth, Experiential Learning, Outdoor Sports Tournaments, Adventure-Based Challenges, Fitness Trails, Teamwork, Mental Health, Resilience

## INTRODUCTION:

To effectively design spaces for children, one must first understand the child, their needs and demands, their developmental process, the nature of their relationship with their environment, and the opportunities presented by the environment to meet those needs and demands. Spaces should then be developed in accordance with the design concepts. At this moment, it is critical to investigate the following concepts while developing outdoor learning environments for children. Physical education is a discipline that must be studied outside. Physical education is the core of any broad school physical activity program. Physical education provides cognitive content and instruction that aims to improve motor abilities, knowledge, and

behaviors for physical activity and fitness. It is an academic topic differentiated by a carefully organized, sequential K-12 curriculum (course of study) based on national physical education standards. Students can get the skills and confidence to be physically active for the rest of their life if schools support the implementation of daily physical education programs. As a result, instructors should prioritize engaging in physical activity outside. [1]

Outdoor education plays an important role in physical education programs as it provides an outdoorsy atmosphere for students to participate in physical activity, promoting comprehensive growth through procedures like exploring, paddling, as well as nature walks, which not only improve physical fitness but also promote critical thinking, teamwork, awareness of the environment, and psychological health, while offering an exciting departure from traditional indoor gym settings; essentially, it allows

Outdoor Education is an immersive learning technique that takes place outside. Hiking, camping, rock climbing and canoeing are among the activities used to encourage personal growth, social skills development, and physical and mental health improvement. Adventure, in its most basic form, can be defined as anything that forces you to leave your comfort zone. Outside education is more than just teaching things in an outside setting. It is a comprehensive strategy that seeks to promote personal, social, and environmental development through experiential learning. Students who participate in a range of outdoor activities create a stronger connection with nature, gain practical skills, improve their problem-solving ability, and build resilience in the face of adversity. [2]

## PHYSICAL EDUCATION OUTDOOR ACTIVITIES

Outdoor activities in physical education foster physical fitness, teamwork, and personal development in a natural setting. Consider the following examples:

**Outdoor sports tournaments:** Organize tournaments or friendly matches for popular outdoor sports such as soccer, basketball, and cricket. Focus on skill development, fair play, teamwork, and sportsmanship. Align these activities with physical education standards that address skill acquisition, cooperation, or healthy lifestyles.

**Adventure-based challenges:** Introduce pupils to adventure-related activities such as rock climbing, orienteering, and ropes courses. These exercises promote problem-solving abilities, risk assessment, resilience, and personal development. Align these activities with criteria for adventure education, personal development, and risk management.

**Fitness trails or obstacle courses:** Create outdoor fitness trails or obstacle courses that will test pupils' strength, endurance, and agility. Incorporate exercises, challenges, or stations that address various fitness components. Align these activities with criteria for physical fitness, skill development, and goal setting. [3]

## CHARACTERISTICS OF OUTDOOR EDUCATION AS PART OF PHYSICAL EDUCATION:

**1. Experiential Learning:** Outdoor education is fundamentally based on experiential learning, a teaching method that goes beyond the limits of regular classroom environments. Rather of simply reading about ecosystems in a textbook, students are taken to the heart of nature, where they may interact directly with their environment.

**2. Connection with Nature:** Spending time outside allows pupils to form a deep and lasting relationship with the natural world.

**3. Physical Fitness and Health:** Outdoor education is highly effective in developing physical fitness and general health.

**4. Teamwork and Social Skills:** One of the primary benefits of outdoor education is its natural promotion of teamwork and the development of important social skills.

**5. Confidence and Resilience:** The problems encountered in an outdoor schooling setting frequently go beyond physical abilities.

**6. Environmental Awareness:** Outdoor education programs are uniquely positioned to teach essential lessons about environmental awareness and sustainability. [4]

## THE BENEFITS OF ADVENTURE/OUTDOOR EDUCATION

**Personal Development:** Participating in outdoor activities increases self-confidence and resilience. It pushes people outside of their comfort zones and inspires them to face challenges full on, resulting in a sense of personal accomplishment.

**Social Skills:** Adventure/outdoor education are frequently a group activity that fosters teamwork, leadership, and communication skills. It teaches people how to communicate efficiently and respect others' points of view.

**Physical Health:** The dynamic nature of outdoor activities gives an excellent workout, increasing cardiovascular health, flexibility, and strength. Physical activity also leads to greater academic performance.

**Mental Health:** The vast outdoors is a natural stress reliever. It relaxes the mind and improves mood, which aids in the treatment of anxiety and depression.

**Connection with Nature:** Adventure/outdoor education raise environmental awareness and build a strong connection to nature. This link instils a sense of responsibility to protect our natural surroundings.

**Resilience:** Adventure promotes resilience, teamwork, problem-solving abilities, and self-confidence. Hands-on exercises in real-world settings apply classroom concepts to real-life situations. [5]

## REVIEW OF LITERATURE:

Outdoor learning is based on the concept of going outside rather than learning in an inside classroom setting. While specific descriptors and categorizations may differ, in this article, we have adopted a definition for outdoor learning based on the Nordic definition of outdoor life (Sandseter Citation2018) to characterize outdoor learning in which children can move, play, design, investigate, construct, and express their ideas. An outdoor learning environment is defined as either an intentionally built place or a natural, undisturbed location in which students can engage in authentic and immersive learning experiences. [6]

The impacts of spending time in outside areas have been examined over a wide age spectrum. Nature and outdoor environs have been demonstrated to have a calming influence on people and can help with repair (Simkin Citation 2020). There is evidence that these circumstances can lower stress while increasing energy, creativity, and happiness. [7]

Digitalization is a broad intellectual and philosophical tendency in modern civilization. It has had a significant impact on both primary and secondary education, albeit to varying degrees and extents. This is equally true for the subject of physical education, physical education teacher education, and how outdoor education is conducted (e.g., Barker et al., Citation2016). The opportunities and problems of incorporating digital technology into outdoor education are well recognized. It has been proposed that digital technology can supplement outdoor education and increase young people's interest in outdoor education. [8]

Students' Learning: According to Acar, H. (2014), learning environments can be utilized to analyze environmental education themes and the function of the environment in education. "Environmental education aims to create behaviour in humans toward these processes, including informing, raising consciousness, warning, balancing, development, and protection," according to the report. The 1977 Tbilisi Conference on Environmental Education emphasised that "a successful environmental education should make a human being more aware of the environment in which he lives, more responsible, more knowledgeable, more experienced, more skilled, and more participatory." It also focuses on identifying and distinguishing the values, attitudes, and concepts associated with human biophysical and social settings. Furthermore, learning outdoors is described as bringing kids outside to teach them crucial curriculum topics in their immediate or adjacent environment. There are four possible learning environments: school grounds, local neighborhoods, day trips, overnight stays/residential camps, and expeditions. [9]

**OBJECTIVES:**

- Examining the role of outdoor education in physical education programs.
- Investigated students' motivation and learning outcomes after using the sports education paradigm.
- Explain outdoor learning methodologies.

**RESEARCH METHODOLOGY:**

This study's conclusions, which examine the significance of outdoor education in physical education programs, are based on secondary data collected from trustworthy sources such as journals, books, magazines, and the internet. The research design for the study is essentially descriptive. Readings from journals these credible publications were located using search engine platforms like Google Scholar, worldwide economics and business journals, open educational materials, and other well-known websites.

**RESULT AND DISCUSSION:**

The current study established physical education activities and investigated students' learning motivation and outcomes during the implementation of the sports education model. The study also looked at how students felt after applying the sports education model, as well as the challenges and coping strategies that teachers faced when implementing the model. Figure 1 illustrates the structure:

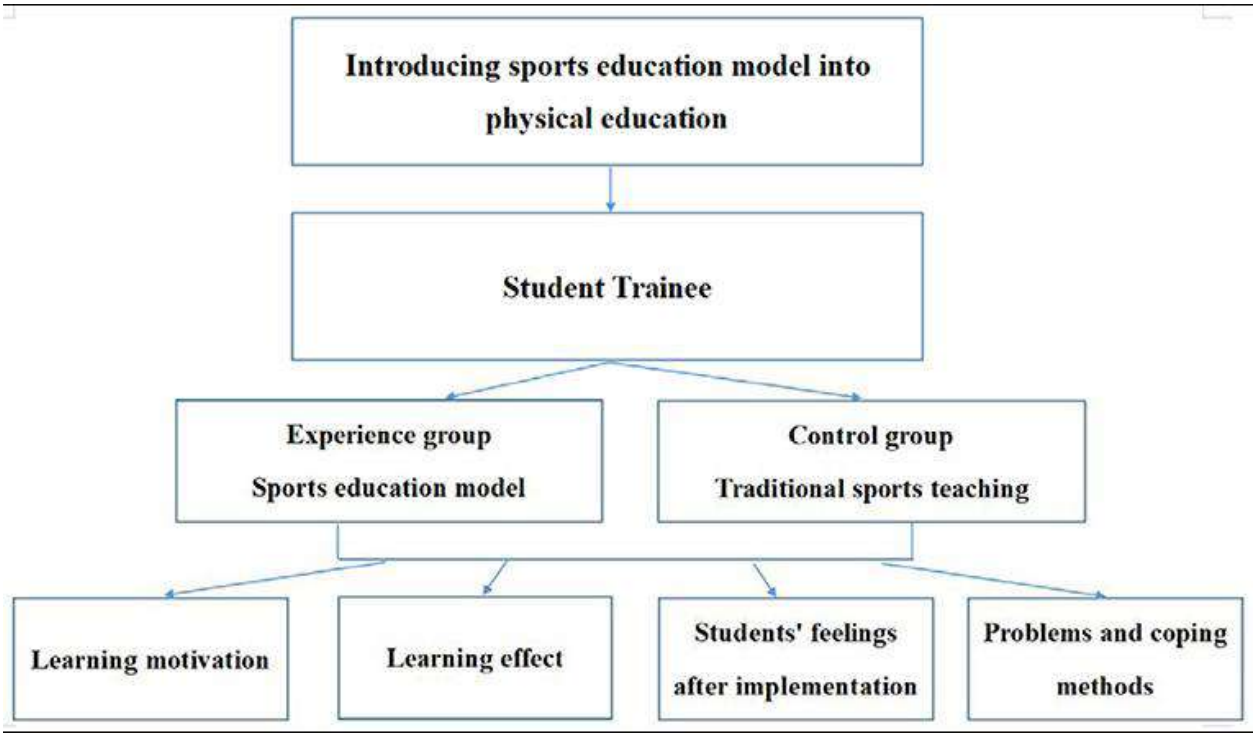

**Figure 1: physical education activities and explored the learning motivation and learning outcomes of students during the implementation of the sports education model.** (Source: https://www.frontiersin.org/)

To better understand the changes in learning outcomes and motivation following the implementation of the sports education model, this study employs both qualitative and quantitative evaluation methodologies. (1) The ARCS Learning Motivation Scale; (2) The Physical Education Affective Scale; (3) An interview; (4) A study sheet; and (5) A teaching checklist. [10]

**PHYSICAL & OUTDOOR EDUCATION:**

A dynamic team creates and provides chances for every learner to be effectively engaged in the development of their physical skills, knowledge, practices, and values, inspiring them to lead a lifetime of active, healthy living in order to be useful.

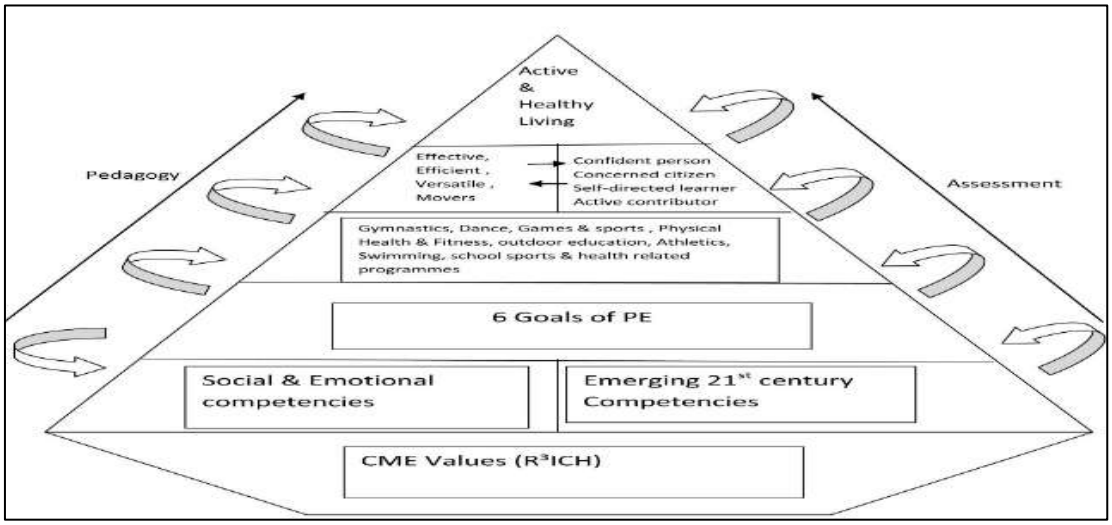


**Figure 2: Physical & Outdoor Education** (Source: www.zhenghuapri.moe.edu.sg)

The school's physical education curriculum seeks to provide a variety of exercise activities to help students build their bodies, minds, and souls. It also seeks to foster a foundation and interest in an active lifestyle. The lower elementary level curriculum emphasizes the teaching and mastery of fundamental motor skills and concepts. The school believes that a comprehensive set of fundamental motor skills and concepts are essential building blocks for the acquisition of specialized talents in a variety of physical activities. Upper primary levels emphasize the refinement of basic movement patterns as well as the development of combination abilities that will allow students to move with increasing complexity, diversity, and versatility in order to take on increasingly challenging movement activities and tasks. [11]

## Outdoor Learning and Theories of Learning

Outdoor learning is a wide notion with no defined boundaries. It can include a number of approaches and activities, as shown in Table 1. Outdoor education and learning are distinct from environmental education, which can also occur outside. Outdoor learning can encompass any subject, not simply the environment, and it can be geared toward a variety of age groups.

**Table 1: Outdoor Learning Approaches**

| Outdoor Learning Approaches | Examples Include: |
|---|---|
| School grounds/gardens/community projects | Eco schools |
| Outdoor therapeutic and learning projects | Wilderness therapy interventions |
| Outdoor visits | School visits/trips to a forest classroom or green space |
| Regular outdoor learning | Forest School, nature kindergartens, practical environmental volunteering, and more targeted projects for people with certain disabilities or social problems |
| Guided walks/events | Fungi foray's, nature walks, bird watching. |
| Environmental education | Trips to field study centers, residential courses |
| Outdoor play – particularly for young children | Nature kindergartens, nature in school grounds, Forest School |
| Modern apprenticeships | Training and skills development in nature through specific programs |
| Adventure and recreation activities | Outward Bound[1] and residential courses |

This is not an entire list, but it does demonstrate the variety of ways that can fall under the category of outdoor learning. Not all of these categories are mutually exclusive; for example, an outdoor therapeutic learning method may involve adventure or wilderness activities.

However, because of its therapeutic features, it will have a distinct focus from organizations that provide adventure and amusement activities to challenge young people. Outdoor learning can be formal, taking place in schools, universities, or specific courses, and it is frequently guided by specific curriculum and learning outcomes. These activities are overseen by teachers, biologists, nature interpreters, lecturers, guides, and

instructors. Parents, guides, therapists, and rangers can encourage informal learning for general curiosity and enjoyment, as well as health and social consequences.

This article discusses outdoor education and learning in nature. We use the term nature to refer to people's relationships with the environment, which ranges from the countryside and rural areas to urban green spaces in densely populated places and gardens or green spaces on school grounds. We contend that outdoor schooling in natural settings can potentially lead to a range of health and well-being benefits via two distinct mechanisms:

1) Through broad exposure to nature and active participation in nature, which is a fundamental component of outdoor education, there is potential for improvements in physical health, mental well-being, and healing. As a result of being in nature, outdoor learning can provide health and well-being benefits; similar benefits can also be obtained through other activities such as outdoor recreation.

2) Outdoor learning provides active 'hands-on' and intensive or extended engagement with nature, resulting in attitude and behaviour modification, new skills and competences, increased confidence and self-esteem, and interpersonal and social skills. For example, intensive, 'hands on', and/or long-term outdoor learning modalities have distinct health and well-being benefits (Figure 3). [12]

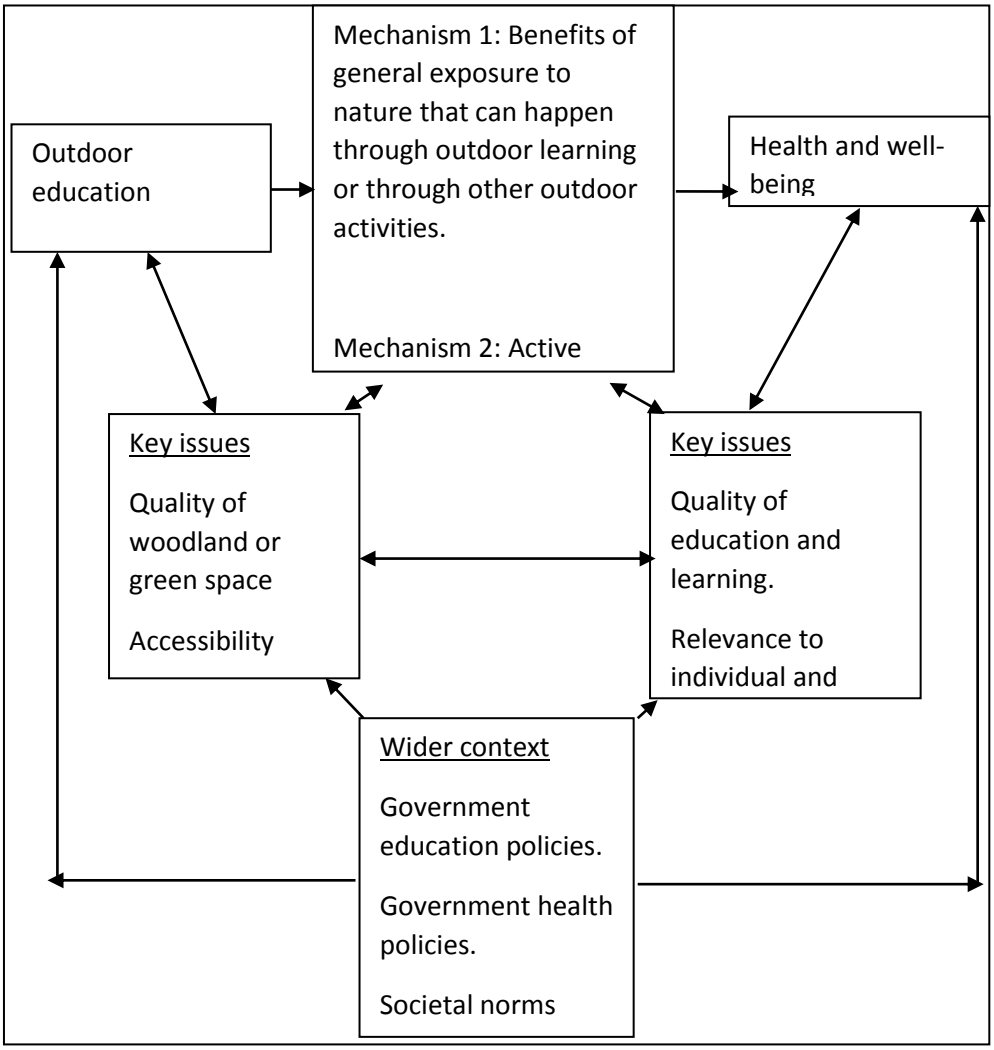


**Figure 3: Potential ways in which outdoor education can impact on health and well-being [13]**

In this study, we claimed that outdoor learning in nature can result in health and well-being benefits and outcomes via two potential mechanisms: 1) general exposure to nature, and 2) active 'hands on' learning ways in nature. We believe that people of all ages and backgrounds from a variety of nations can benefit. However, the accumulation of any health and well-being advantages will be determined by factors such as the length of time spent engaging in outdoor learning, the intensity of people's experiences, what is taught/learned, and the connections created between what is learned outdoors and other aspects of people's life. [14]

Outdoor learning complements indoor teaching and learning. The goal is to encourage lifelong learning through exposure to natural settings, culture, and society.

School life is hectic and often fraught with competing priorities. Schools and staff might find themselves in a delicate balancing act, juggling a wide range of activities from mandatory academic requirements to creative

displays such as the annual school performance. However, one important factor is sometimes overlooked: physical education (P.E.) and outside play. In this piece, I challenge the frequent cancellations or sacrifices of physical education and outdoor play for a variety of events, activities, and even the weather, pushing educators and the ‘system' to re-evaluate priorities.

**Figure 4: The Role of Outdoor Play** (Source: https://nexus-education.com)

Outdoor play, which is an important part of a child's development, is also at risk of being lost. Due to the unpredictability of the weather and the prioritizing of other events, children are losing precious opportunities for unstructured play. Outdoor play not only promotes physical fitness, but it also improves cognitive abilities, creativity, and social development. It also gives children the necessary downtime to focus on more regimented tasks during the day. [15]

## CONCLUSION:

The purpose of physical education is to increase physical competence by developing specific knowledge, skills, and understanding. Physical education serves a unique role in school and is a vital component of the learning process. Nature provides numerous benefits to children's development, including enhanced physical health, social-emotional, and intellectual growth. Outside education enhances physical education programs by providing a dynamic learning environment that fosters physical fitness, social development, environmental awareness, and general well-being through engaging outside activities. Outdoor education provides a complete and stimulating approach to physical education. It not only improves physical fitness, but also promotes environmental awareness, social development, life skills, and a deep appreciation for nature. By incorporating outdoor education into the curriculum, kids can receive a well-rounded education that prepares them for a diverse and ever-changing world.

**REFERENCES:**

1. Knight, S. (2018). Outdoor adventure education: Foundations, theory, and research. Routledge.
2. Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and outward bound: Out-of-class experiences that make a lasting difference. Review of Educational Research, 67(1), 43-87.
3. Dyment, J. E. 2005. "Green School Grounds as Sites for Outdoor Learning: Barriers and Opportunities." International Research in Geographical & Environmental Education 14 (1): 28–45.
4. Caballero P., Velo C., Hernández E. (2020). Desarrollo de competenciasprofesionales y personales a través de un programabasado en la pedagogía de la aventura en alumnadouniversitario. In Escaravajal J. C., López J., Baños R (Eds), Actividades en el Medio Natural y Deportes de Aventura (pp. 33–48). AsociaciónAndaluza de docencia e investigación en EF.
5. Gray, T. (2018). Outdoor Learning: Not new, just newly important. Curriculum Perspective. 38, 145–149
6. Sandseter, E. B. H., and O. B. Lysklett. 2018. "Outdoor Education in the Nordic Region." In International Handbook of Early Childhood Education, edited by M. Fleer and B. Oers, 889–905.
7. Simkin, J., A. Ojala, and L. Tyrväinen. 2020. "Restorative Effects of Mature and Young Commercial Forests, Pristine Old-Growth Forest and Urban Recreation Forest - a Field Experiment." Urban Forestry & Urban Greening 48:126567.
8. Barker, D., Barker-Ruchti, N., Carlén, U., Maivorsdotter, N., Nielsen, J., &Wahlström, M. (2016). Pedagogical narrative: Working with technology as student teachers. In A. Casey, V. Goodyear, & K. Armour (Eds.), Pedagogical cases: Digital technologies in youth physical activity, physical education & sport (pp. 231–246). London: Routledge.
9. Acar, H. (2014). Learning environments for children in outdoor Spaces. Procedia - Social and Behavioral Sciences. Volume 141, Pages 846-853
10. Goodyear, V.A.; Armour, K.M.; Wood, H. Young people learning about health: The role of apps and wearable devices. Learn. Media Technol. 2019, 4, 193–210.
11. Hilmo, I., Holter, K. and Langholm, G. 2006. Naturfagsnikksnakk. *Barnehagefolk* No.4.
12. Valentine, G. 1996. Angels and devils: moral landscapes of childhood. Environment and Planning D, Society and Space. 14: 581-599.
13. Vygotsky, L. 1986. Thought and Language. London: The MIT Press Cambridge, Massachusetts.
14. Kaarby, K. M., Eid, N. E. and Ronny, L. 2004. Hvordan påvirker naturen barns lek. (Children's play in nature). *Barnehagefolk* No 4.
15. Stasiuk, P. (2016). Early nature lessons in Denmark's forest preschools. The Official Website of Denmark.

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# HEALTH AND WELLNESS THROUGH YOGIC PRACTICE AMONG EMPLOYEES IN PUBLIC EDUCATIONAL INSTITUTIONS: FIELD EVIDENCE FROM TELANGANA, INDIA

**Dr. K Mallikamba**

**Assistant Professor, Siddhartha College of Physical Education**

**Suryapet, Telangana**

**Dr. Srinivas Reddy Yampalla**

**Assistant Professor (Contract), Department of Physical Education,**

**Mahatma Gandhi University, Nalgonda, Telangana**

**Email ID:muralisports2@gmail.com,**

## ABSTRACT

This study investigates how practicing yoga impacts the physical and emotional well-being of staff in public educational institutions in Telangana. We analyzed physical and mental health factors from 50 yoga practitioners and 50 non-practitioners before and after yoga sessions. Statistical analyses, such as paired sample t-tests and correlation analyses, were performed to assess the data. Results demonstrate significant improvements in physical health indicators following yoga practice. Reductions in body fat levels ($t = 12.74$, $p < 0.001$) and weight ($t = 13.34$, $p < 0.001$), along with enhancements in flexibility measures such as shoulder reach ($t = -12.65$, $p < 0.001$) and sit-and-reach capabilities ($t = -24.02$, $p < 0.001$), highlight yoga's efficacy in addressing obesity and musculoskeletal concerns prevalent among educators. Regarding mental health, significant decreases in anxiety ($t = 16.020$, $p < 0.001$) and anger ($t = 13.470$, $p < 0.001$) levels post-yoga practice were observed, alongside notable increases in work satisfaction ($t = -11.602$, $p < 0.001$) and happiness ($t = -11.176$, $p < 0.001$). These results highlight the ability of yoga to reduce stress and promote good emotional states in educational professionals, indicating its potential to reduce burnout and improve psychological well-being. The study highlights the significance of incorporating yoga into workplace wellness programs designed for educational institutions. Yoga provides a comprehensive method for enhancing employee well-being and productivity by addressing both physical and mental health issues. This information helps improve our understanding of how yoga can effectively be used to improve employee health and happiness in educational environments, enabling the creation of specific and effective workplace

wellness programs. **Key words:** Yogic practice, mental wellbeing, physical wellness, public sector employees, paired sample t test.

## INTRODUCTION

Workplace wellness initiatives have become more prominent as firms acknowledge the need to promote employee health and wellbeing. Yoga is a popular and successful wellness activity for enhancing physical and emotional health among employees (Büssing et al., 2012). Yoga, rooted in ancient Indian practices, integrates physical poses, breathing techniques, and meditation methods to promote overall well-being (Sreekumar, Nagendra, and Ilavarasu, 2021). This introduction is to investigate the impact of yoga practice on the physical and emotional well-being of employees, specifically in public educational institutions in Telangana.

### 1.1 Benefits for physical health

Engaging in yoga practice provides several advantages for physical well-being, such as enhancements in flexibility, strength, and cardiovascular fitness. Yoga positions target different muscle groups, improving flexibility, mobility, muscle tone, and strength. Moreover, integrating controlled breathing techniques into yoga helps enhance respiratory function and oxygen absorption, which promote cardiovascular health (Mishra et al., 2020). Furthermore, research indicates that consistent yoga practice can aid with weight control by boosting calorie burn and encouraging mindful eating behaviours. The physical health advantages are especially important for personnel in public educational institutions, where inactive work settings and elevated stress levels can make people more susceptible to musculoskeletal problems and diseases associated with their lifestyle (Mishra et al., 2020).

### 1.2 Psychological Benefits

Yoga is well-known for its favorable impact on mental health and overall well-being, in addition to its physical benefits (Pai, and Alathur, 2019). Yoga is based on mindfulness and meditation, promoting awareness of the present moment, and reducing stress. Studies repeatedly demonstrate that practicing yoga helps reduce symptoms of anxiety, depression, and stress, leading to increased emotional resilience and improved psychological wellness (Tran et al., 2001). Moreover, yoga's focus on self-awareness and introspection can enhance self-esteem and foster a feeling of inner calm and satisfaction. Yoga is a beneficial technique for employees in public educational institutions to manage stress and promote emotional equilibrium, especially in environments with high job demands and interpersonal pressures that can lead to burnout and mental health issues (Lin et al. 2011; and Tran et al., 2001).

Although yoga is increasingly popular in workplace wellness programs, there is a lack of thorough study on its impact on the physical and emotional health of employees, especially at public educational institutions in Telangana. Although some research has investigated the advantages of yoga in different work environments, there is a gap in the literature about its effects on employees in educational institutions. This report intends to investigate the effects of yoga practice on physical and mental health outcomes among employees in public educational institutions in Telangana. This study aims to examine the impact of yoga on factors like flexibility, fat levels, anxiety, anger, work satisfaction, and happiness to understand the advantages of incorporating yoga into workplace wellness programs in the educational field. The current research aims to enhance comprehension of how yoga can enhance employee health and wellbeing. This will help in creating more efficient workplace wellness programs customized for educators and staff in educational institutions.

## REVIEW OF LITERATURE

Mishra et al. (2020) investigated how yoga's advantages are seen and the obstacles to its incorporation into daily practice and work environments in various regions of India. The study findings showed that individuals from various age groups mostly viewed yoga as improving physical fitness, relaxation, and stamina. Barriers like lifestyle constraints, family commitments, and the limited availability of adequate venues for practice were found to be major obstacles to widespread adoption. This study emphasizes the importance of overcoming practical barriers to fully utilize the potential advantages of yoga in various situations.

Bonura and Tenenbaum (2014). This randomized controlled experiment evaluated the effects of a yoga intervention on the psychological well-being of older people, yielding significant findings. Participants who practiced chair yoga showed substantial enhancements in psychological markers when compared to both the chair exercise and control groups. Effect sizes (Cohen's d) varied from 0.27 to 1.10, showing significant improvements in anger, anxiety, depression, well-being, and self-efficacy areas. Changes in self-control were discovered to influence enhancements in psychological well-being. The results highlight yoga's potential as a therapeutic method for improving mental health in older adults.

Chobe (2012) performed a comprehensive analysis of the effects of yoga-based therapies on cognition and mental health in older adults. 13 randomized control trials (RCTs) were included in the analysis out of a total of 3388 records. Findings indicate that yoga therapies have the potential to enhance attention and executive functioning and reduce depression in older people. Additional study is required to comprehensively grasp the impact of yoga on cognitive and mental health outcomes in this group.

Kumar and Poonia (2017) investigate the relationship between yoga and positive psychology, highlighting the significance of comprehensive mental health care that goes beyond just alleviating symptoms. Their

meta-analysis examines how yoga affects mental health, particularly in the context of chronic physical problems. The study enhances our understanding of how yoga practices might help people with chronic health concerns by emphasizing this sometimes-neglected feature. This study highlights the capacity of yoga to improve mental well-being in individuals with physical health issues.

Telles et al. (2009) An assessment was conducted on obese persons participating in a 6-day residential program that integrated yoga and nutritional adjustments. The findings showed a notable decrease in BMI by 1.6%, as well as decreases in waist and hip circumferences and fat-free mass. Additionally, there were enhancements in postural stability and grip strength. Total cholesterol fell by 7.7%, mainly due to a decline in HDL cholesterol by 8.7%. Additionally, fasting serum leptin levels decreased significantly by 44.2%. The program showed positive effects on physical metrics and metabolic markers. However, the study highlights the need to carefully assess potential dangers, especially those related to quick interventions and changes in lipid profiles.

## DATA AND METHODOLOGY

The study uses primary data obtained from 50 yoga practitioners and 50 yoga non-practicers. Further, the data is collected from the yoga participants before and after the yoga practice. The employees working in public educational institutions in the state of Telangana were surveyed before and after yoga training and recorded the data on their physical and mental health-related variables. We use statistical methods such as paired sample t-tests to evaluate data collected before and after training, focusing on various health and wellness-related factors.

The study employed the paired sample t test. A paired t-test is a statistical test that is used to see if there is a big difference between the means of two groups that are linked (Ross, and Willson, 2017; andZimmerman,1997). The Ho stands for the "null hypothesis," which says that the average difference is 0. Ha stands for the other theories. In this case, there are three possible answers: mean(diff) = 0 (one-tailed left), mean(diff)= 0 (two-tailed), and mean(diff) > 0 (one-tailed right)(Mee, 1991).

## RESULTS AND DISCUSSION

**Table 1: Descriptive statistics of physical wellbeing variables before and after yoga.**

| Variable | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|
| Fat Before Yoga | 12.180 | 0.748 | 0.106 |
| Fat After Yoga | 9.820 | 1.039 | 0.147 |

| | | | |
|---|---|---|---|
| Shoulder Reach Before Yoga | 5.560 | 1.643 | 0.232 |
| Shoulder Reach After Yoga | 8.120 | 2.387 | 0.338 |
| Sit and Reach Before Yoga | 12.080 | 1.957 | 0.277 |
| Sit and Reach After Yoga | 17.100 | 2.384 | 0.337 |
| Weight Before Yoga | 62.648 | 5.915 | 0.836 |
| Weight After Yoga | 58.978 | 5.256 | 0.743 |

Source: Field data.

The table 1 presents a detailed summary of the descriptive data for different physical wellbeing factors before and after engagement in yoga. The results indicate that practicing yoga has beneficial impacts on various elements of physical health, such as fat levels, flexibility, and weight. The average fat content reduced dramatically from 12.180 before yoga to 9.820 after yoga. Practicing yoga may help reduce body fat. The substantial drop, combined with a low standard deviation, indicates a consistent trend among participants, suggesting that yoga practice may be useful in promoting fat loss.

Secondly, both shoulder reach and sit-and-reach measurements demonstrate significant enhancements after practicing yoga. The average shoulder reach rose from 5.560 to 8.120, demonstrating improved shoulder flexibility. The average sit-and-reach score increased from 12.080 to 17.100, indicating improved flexibility in the lower back and hamstring muscles. These enhancements suggest that yoga might successfully improve flexibility in important muscle groups essential for overall mobility and range of motion. It is noteworthy that there were higher standard deviations observed after yoga in both shoulder reach and sit and reach measures, suggesting increased variability in individual responses. The diversity may stem from variations in baseline flexibility levels, the frequency of yoga practice, or individual anatomical characteristics.

The average weight reduced dramatically from 62.648 before practicing yoga to 58.978 after practicing yoga. This decline indicates that consistent yoga practice may aid in weight reduction. Although the decrease in weight is significant, it is important to consider the very

high standard deviations before and after practicing yoga, which suggest a substantial diversity in individual weight loss outcomes. Variables like food, yoga practice intensity, and initial weight can impact the amount of weight reduction seen in individuals.

The descriptive statistics demonstrate the various advantages of yoga for physical health, such as decreased body fat, enhanced flexibility, and weight reduction. It is important to recognize that people respond differently to yoga practice, highlighting the significance of tailored methods and regular involvement to get optimal health results.

**Table 2: Pairwise Correlation between physical wellbeing variables.**

| Paired Variables | Correlation | Sig. |
|---|---|---|
| Fat Before Yoga and After Yoga | -0.049 | 0.733 |
| Shoulder Reach Before Yoga and After Yoga | 0.810 | 0.000 |
| Sit and Reacg Before Yoga and After Yoga | 0.786 | 0.000 |
| Weight Before Yoga and After Yoga | 0.946 | 0.000 |

Source: Field data.

Table 2 presents the associations between physical wellbeing factors can offer insights into their linkages pre- and post-yoga practice. The correlation between fat levels before and after yoga is close to zero (-0.049), suggesting that there is no meaningful relationship between initial fat levels and changes after practicing yoga. Significant relationships exist between flexibility assessments (shoulder reach and sit and reach) before and after yoga, with correlation coefficients of 0.810 and 0.786, respectively. These robust positive correlations indicate that people with higher levels of flexibility prior to practicing yoga are more likely to have significant enhancements following their participation in yoga. There is a substantial positive correlation (0.946) between initial weight and weight after yoga, suggesting that initial weight is a robust predictor of weight changes after practicing yoga. Participants generally saw large decreases in weight.

**Table 3: Results of paired sample t test for physical health related variable for before and after yoga practice by employees working in public educational institutions, Telangana.**

| Pair-wise comparisons pre and post test | Mean | Std. Dev | Std. Erro | t | Sig. (2-tailed) |
|---|---|---|---|---|---|
| Fat Before Yoga and After Yoga | 2.36 | 1.31 | 0.19 | 12.74 | 0.00 |
| Shoulder Reach Before Yoga and After Yoga | -2.56 | 1.43 | 0.20 | -12.65 | 0.00 |
| Sit and Reacg Before Yoga and After Yoga | -5.02 | 1.48 | 0.21 | -24.02 | 0.00 |
| Weight Before Yoga and After Yoga | 3.67 | 1.94 | 0.28 | 13.34 | 0.00 |

Source: Field data.

The paired sample t-tests done on physical health-related variables before and after yoga practice among personnel at public educational institutions in Telangana provide strong evidence of the positive effects of

yoga on different health measures, which are presented in Table 4. The results show a statistically significant decrease in fat levels and weight after participating in yoga sessions. The average change in fat levels pre- and post-yoga practice is 2.36, with a standard deviation of 1.31. The average weight change before and after practicing yoga is 3.67. The results are consistent with previous research (Mishra et al., 2020; Pai, and Alathur, 2019; Sreekumar, Nagendra, and Ilavarasu, 2021; Büssing et al., 2012; Lin et al. 2011; and Tran et al., 2001), suggesting that yoga can aid in weight control and fat reduction through enhancing calorie burn, boosting metabolism, and raising awareness of eating behaviours. The considerable results highlight yoga's potential as an effective strategy for addressing obesity and enhancing body composition in employees at educational institutions.

The results show notable enhancements in flexibility, especially in the shoulder and lower back areas, after practicing yoga. The average change in shoulder reach before and after yoga is -2.56, suggesting an improvement in shoulder flexibility. The average difference in sit and reach before and after yoga is -5.02, indicating significant improvements in lower back and hamstring flexibility. These enhancements are essential for averting injuries, encouraging proper posture, and improving overall physical performance. Regularly participating in yoga classes can improve flexibility, which is especially advantageous for people with sedentary lives or those in employment involving extended sitting or physical strain.

Finally, the constant pattern of significant findings across all evaluated criteria highlights the extensive influence of yoga on the physical health of staff in public educational institutions.

The significant results in fat levels, weight, and flexibility measures suggest that practicing yoga can improve various aspects of physical health at the same time. The results have significant implications for workplace wellness programs, indicating that introducing yoga programs in educational institutions could result in considerable advantages for staff health and productivity. The results emphasize the significance of advocating comprehensive health promotion strategies at workplaces, focusing on including physical activity, stress management, and mindfulness techniques such as yoga to help employees attain maximum health and wellbeing.

**Table4: Descriptive statistics of mental wellbeing variables before and after yoga.**

| Variable | Mean | Std. Dev | Std. Error |
|---|---|---|---|
| Anxiety Before Yoga | 3.940 | 0.767 | 0.108 |
| Anxiety After Yoga | 1.640 | 0.598 | 0.085 |
| Anger Before Yoga | 3.640 | 0.749 | 0.106 |
| Anger After Yoga | 1.700 | 0.707 | 0.100 |

| | | | |
|---|---|---|---|
| Work Satisfaction Before Yoga | 1.840 | 0.766 | 0.108 |
| Work Satisfaction After Yoga | 3.800 | 0.782 | 0.111 |
| Happiness Before Yoga | 1.860 | 0.756 | 0.107 |
| Happiness After Yoga | 3.960 | 0.903 | 0.128 |

Source: Field data.

Examining the descriptive statistics of mental wellness factors before and after yoga practice offers useful insights into the potential psychological advantages of participating in yoga. The substantial decreases in anxiety and rage levels after practicing yoga are remarkable, as shown in table 4. The average anxiety level decreased from 3.940 to 1.640 before and after yoga, respectively. Similarly, the average anger score decreased from 3.640 to 1.700. Engaging in yoga sessions could significantly reduce negative emotional states like anxiety and rage. The reductions in standard deviation and standard error suggest that the enhancements in mental health are uniform among participants, strengthening the reliability of the observed advantages.

Secondly, the findings also show improvements in positive emotions and job satisfaction after engaging in yoga sessions. The average happiness score rises from 1.860 to 3.960 after practicing yoga, indicating a notable improvement in overall happiness levels. Work satisfaction significantly increased from a mean score of 1.840 before yoga to 3.800 after yoga. These data indicate that practicing yoga can decrease negative emotions, promote good psychological states, and enhance overall work satisfaction. The decrease in variability and margin of error suggest that the enhancements are uniform among individuals, underscoring yoga's promise as a comprehensive method for enhancing mental wellness in different areas of life, such as work-related contentment and joy.

**Table 5: Pairwise Correlation between mental wellbeing variables.**

| Pairwise correlation | | |
|---|---|---|
| Pair of variables | Correlation | Sig. |
| Anxiety Before and After Yoga | -0.093 | 0.523 |
| Anger Before and After Yoga | 0.023 | 0.873 |
| Work Satisfaction Before and After Yoga | -0.191 | 0.184 |
| Happiness Before and After Yoga | -0.277 | 0.051 |

Source: Field data.

Examining the associations between mental wellness measures before and after yoga practice can provide valuable information about the potential connections and alterations in psychological states after participating in yoga, presented in Table 5. The relationships between anxiety and anger levels before and after yoga are minimal, with coefficients of -0.093 and 0.023, respectively, and p-values above 0.05. The

results indicate that there is no notable correlation between the initial levels of anxiety or anger and the changes observed following participation in yoga sessions. The enhancements in mental wellness, including the reduction of anxiety and anger, may be attributed to the practice of yoga rather than original psychological conditions.

The relationships between work satisfaction and happiness before and after yoga are moderately negative, with values of -0.191 and -0.277, respectively. The link between work satisfaction before and after yoga is not statistically significant ($p = 0.184$), while the correlation between happiness before and after yoga is approaching significance ($p = 0.051$). These results indicate that those with lower baseline levels of work satisfaction and happiness are more likely to see larger improvements in these areas after practicing yoga. The lack of a significant link to work satisfaction suggests that factors other than yoga practice may impact improvements in work-related satisfaction. The results indicate that practicing yoga can enhance different aspects of psychological health, such as work satisfaction and happiness, regardless of initial mental wellbeing states.

**Table 6: Results of paired sample t test for physical mental related variable for before and after yoga practice by employees working in public educational institutions, Telangana.**

| Pairwise comparisons of means pre and post teat | Mean | Std. Dev | Std. Error | t | Sig. (2 tailed) |
|---|---|---|---|---|---|
| Anxiety Before and After Yoga | 2.300 | 1.015 | 0.144 | 16.020 | 0.000 |
| Anger Before and After Yoga | 1.940 | 1.018 | 0.144 | 13.470 | 0.000 |
| Work Satisfaction Before and After Yoga | -1.960 | 1.195 | 0.169 | -11.602 | 0.000 |
| Happiness Before and After Yoga | -2.100 | 1.329 | 0.188 | -11.176 | 0.000 |

Source: Field data.

Paired sample t-tests on physical and mental wellbeing factors before and after yoga practice among personnel in public educational institutions in Telangana show significant changes in all assessed parameters, presented in Table 6. Initially, in relation to mental health, significant reductions are noted in anxiety and rage levels after participating in yoga sessions. The average anxiety level drops from 2.300 to 1.015 before and after yoga, respectively. Similarly, the average anger score decreased from 1.940 to 1.018. The results show a notable decrease in negative emotions like anxiety and anger, implying that practicing

yoga could be a beneficial method for enhancing mental health in workers. The high t-values and low p-values (all < 0.001) confirm the strength and statistical importance of these observed enhancements.

Additionally, the findings show notable improvements in job satisfaction and happiness after engaging in yoga. The average work satisfaction score rises from -1.960 to 1.195 following yoga, and the average happiness score climbs from -2.100 to 1.329. The results indicate significant improvements in positive psychological states and overall work satisfaction among the participants. The high t-values and low p-values (all < 0.001) show that the observed changes are statistically significant, demonstrating the effectiveness of yoga practice in enhancing good mental wellbeing outcomes, such as greater work satisfaction and happiness. These findings support the findings of (Büssing et al., 2012; Sreekumar, Nagendra, and Ilavarasu, 2021; Mishra et al., 2020; Pai, and Alathur, 2019; Lin et al. 2011; and Tran et al., 2001).

The results of the paired sample t-tests highlight the significant favorable effects of yoga on the physical and emotional well-being of personnel at public educational institutions. The significant increases in anxiety, anger, work satisfaction, and happiness suggest that practicing yoga can successfully enhance different aspects of psychological wellbeing.

The findings imply that introducing yoga programs in educational institutions can have significant positive effects on employee mental health and job satisfaction through workplace wellness initiatives. The important results highlight the significance of advocating for comprehensive strategies to enhance employee wellbeing, including physical and mental health interventions to help employees attain peak health and productivity.

## CONCLUSION

Conclusively, the thorough examination of the tables produced today offers significant insights into the various benefits of yoga practice among personnel at public educational institutions in Telangana. The results regularly show positive changes in several physical wellbeing indicators, such as fat levels, flexibility, and weight, after participating in yoga sessions. Decreases in fat levels and weight indicate that yoga may help with weight control and enhancements in body composition. Yoga has a key role in improving physical mobility and minimizing the likelihood of musculoskeletal problems, especially in the shoulder and lower back areas. The results highlight yoga's potential as an effective strategy for improving physical health outcomes in employees, advocating for the inclusion of yoga programs in workplace wellness efforts.

Moreover, the examination of mental wellbeing factors shows notable enhancements in anxiety, anger, job contentment, and happiness after engaging in yoga. Reductions in adverse emotional conditions like anxiety and rage indicate that yoga can successfully alleviate stress and enhance emotional control in employees.

Furthermore, improvements in work satisfaction and happiness highlight the beneficial influence of yoga on total job satisfaction and subjective wellbeing. The results emphasize the overall advantages of yoga for promoting mental health in working environments, underscoring the need to incorporate mind-body practices such as yoga into employee wellness initiatives to enhance psychological well-being. The tables provide strong data supporting the beneficial effects of yoga on physical and mental health outcomes. This suggests that yoga should be a key element in staff health promotion efforts in public educational institutions.

## REFERENCES

Bonura, K. B. (2007). The impact of yoga on psychological health in older adults. The Florida State University.

Bonura, K. B., & Tenenbaum, G. (2014). Effects of yoga on psychological health in older adults. Journal of physical Activity and Health, 11(7), 1334-1341.

Büssing, A., Michalsen, A., Khalsa, S. B. S., Telles, S., & Sherman, K. J. (2012). Effects of yoga on mental and physical health: a short summary of reviews. *Evidence-based complementary and alternative medicine*, *2012*.

Chobe, S., Chobe, M., Metri, K., Patra, S. K., & Nagaratna, R. (2020). Impact of Yoga on cognition and mental health among elderly: A systematic review. Complementary therapies in medicine, 52, 102421.

Kumar, V., & Poonia, P. (2017). Impact of yoga on psychological health. Int J Yogic Hum Mov Sport Sci, 2, 248-50.

Lin, K. Y., Hu, Y. T., Chang, K. J., Lin, H. F., & Tsauo, J. Y. (2011). Effects of yoga on psychological health, quality of life, and physical health of patients with cancer: a meta-analysis. *Evidence-Based Complementary and Alternative Medicine*, *2011*.

Mee, R. W., & Chua, T. C. (1991). Regression toward the mean and the paired sample t test. The American Statistician, 45(1), 39-42.

Mishra, A., Chawathey, S. A., Mehra, P., Nagarathna, R., Anand, A., Rajesh, S. K., ... & Nagendra, H. R. (2020). Perceptions of benefits and barriers to Yoga practice across rural and urban India: Implications for workplace Yoga. *Work*, *65*(4), 721-732.

Pai, R. R., & Alathur, S. (2019). Assessing awareness and use of mobile phone technology for health and wellness: Insights from India. *Health Policy and Technology*, *8*(3), 221-227.

Ross, A., & Willson, V. L. (2017). Paired samples T-test. In Basic and advanced statistical tests (pp. 17-19). Brill.

Sengupta, P. (2012). Health impacts of yoga and pranayama: A state-of-the-art review. International journal of preventive medicine, 3(7), 444.

Sreekumar, T. S., Nagendra, H. R., & Ilavarasu, J. V. (2021). Effect of yoga intervention on mindfulness, perceived stress, emotion regulation and affect: a study on senior managers in an Indian multinational corporate. International Journal of Indian Culture and Business Management, 22(1), 37-52.

Telles, S., Naveen, V. K., Balkrishna, A., & Kumar, S. (2009). Short term health impact of a yoga and diet change program on obesity. Medical Science Monitor, 16(1), CR35-CR40.

Tran, M. D., Holly, R. G., Lashbrook, J., & Amsterdam, E. A. (2001). Effects of Hatha yoga practice on the health- related aspects of physical fitness. *Preventive cardiology*, *4*(4), 165-170.

Zimmerman, D. W. (1997). Teacher's corner: A note on interpretation of the paired-samples t test. Journal of Educational and Behavioral Statistics, 22(3), 349-360.

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# ROLE OF YOGA FOR SPORTS RECOVERY: POST-TRAINING AND POST-INJURY REHABILITATION

**Meenakshi**
**Sports Physiotherapist, NCOE Rohtak, Sports authority of India**
**E mail- meenaxidhaka133@gmail.com**

**Anjali**
**Counselling psychologist MA, Dept of Psychology, MDU**

**Geetika**
**Research Scholar, Department of Psychology, Central university of Haryana**

## ABSTRACT
Yoga, a holistic practice encompassing physical postures, breathwork, and mindfulness, has gained significant attention in recent years as a complementary approach to sports rehabilitation and recovery. It has emerged as a valuable tool in sports rehabilitation, particularly for post-training and post-injury recovery. This paper explores the integration of yoga into recovery protocols, emphasizing its potential to support the healing process and enhance rehabilitation outcomes. Through specific postures and breathwork, yoga aids in increasing flexibility, improving muscle strength, and promoting the restoration of joint mobility—all essential components of effective recovery. This review synthesizes current research on the physiological and psychological benefits of yoga in sports recovery, highlighting its role in facilitating muscle repair, enhancing circulation, and improving functional movement. The paper also examines practical considerations for incorporating yoga into post-training and post-injury recovery programs, positioning it as a complementary therapy alongside traditional rehabilitation practices. Overall, the findings suggest that yoga offers a holistic and effective strategy for optimizing recovery and supporting athletes throughout the rehabilitation process. **Keywords**: physiotherapy, sports injuries, yoga, rehabilitation, post injury recovery

## INTRODUCTION
Sports recovery is an essential aspect of athletic performance, encompassing the strategies and practices that help athletes restore their physical and mental state after intense training or competition. Effective recovery not only prevents overtraining but also accelerates muscle repair, enhances performance, and minimizes the risk of injuries. For athletes, incorporating recovery techniques into their routine is critical to sustaining long-term success and well-being. Yoga, an ancient practice rooted in physical postures, breath control, and mindfulness, has gained immense popularity among athletes as a recovery and rehabilitation tool. Unlike conventional recovery methods that primarily target physical recovery, yoga's holistic approach addresses both the physical and mental dimensions of well-being. Athletes across various disciplines, from runners to basketball players, have embraced yoga to improve flexibility, reduce stress, and support injury recovery.
The practice of yoga may provide an additional training option to enhance performance for college athletes as well (Polsgrove et al., 2015). Yoga's impact on specific components of fitness in relation to sport-specific tasks, or a comparison of athletes from the same sport, could further demonstrate yoga's potential to improve sports performance. (Polsgrove et al., 2015). The growing evidence on yoga's therapeutic potential has led some researchers to explore its applications for athletes and individuals recovering from sports-related injuries. While traditional rehabilitation approaches often focus on strength training and cardiovascular

exercise, yoga's emphasis on controlled movements, balance, and muscle activation may complement these modalities and facilitate a more holistic recovery process. (Curtis et al., 2017). Yoga postures have been shown to activate specific muscle groups, including the core stabilizing muscles that play a crucial role in athletic performance and injury prevention. Targeted yoga practices may therefore be useful for restoring strength and function following an injury, as well as optimizing neuromuscular control for injury-prone athletes.

Post-training and post-injury recovery are critical components of athletic performance and overall health. As athletes push their bodies to achieve peak performance, the processes that occur after intense physical exertion or injury play a crucial role in determining long-term success and well-being. Recovery encompasses various physiological and psychological aspects, including muscle repair, inflammation reduction, and mental rejuvenation. Recent research has highlighted the importance of tailored recovery strategies in optimizing athletic performance and preventing future injuries (Smith & Johnson, 2020).

The field of sports science has made significant strides in understanding the complex mechanisms underlying post-training and post-injury recovery. Advances in areas such as nutrition, sleep science, and rehabilitation techniques have provided athletes and healthcare professionals with a broader range of tools to enhance recovery processes (Brown et al., 2019). However, despite these advancements, there remains a need for further investigation into the most effective recovery strategies for different sports and individual athletes.

The objective of this review is to explore the role of yoga in aiding recovery post-training and post-injury. By examining its physiological and psychological benefits and its integration into athletic routines, this article aims to highlight yoga's potential as a comprehensive recovery strategy for athletes.

## YOGA FOR POST-TRAINING RECOVERY

Post-training recovery is critical for sustaining athletic performance and preventing overuse injuries. This phase allows the body to repair microtears in muscle fibres, restore glycogen levels, and return the nervous system to a balanced state. While traditional recovery methods often focus on physical rest and nutrition, yoga offers a comprehensive approach by addressing both the body and the mind, enhancing the overall recovery process.

Yoga postures (asanas) also increase flexibility and joint range of motion, contributing to faster muscle recovery and preventing injuries (Cowen & Adams, 2005). For example, Child's Pose (Balasana) and Supine Twist (Supta Matsyendrasana) stretch and release tension in the lower back, hips, and hamstrings, while poses like Legs-Up-the-Wall (Viparita Karani) reverse blood flow, reducing swelling and restoring energy.

Yoga helps athletes manage muscle tightness caused by repetitive motion and high-impact activities. Dynamic and static stretches like Downward Dog and Pigeon Pose prevent stiffness and improve joint mobility, reducing injury risk and maintaining functional flexibility.

Intense training often activates the sympathetic nervous system, triggering the "fight or flight" response. Chronic activation of this system can elevate cortisol levels, impair recovery, and increase fatigue. Yoga helps counteract this by promoting parasympathetic activation through breath control and mindfulness, encouraging a state of rest and repair. Pranayama (breathing exercises) improve respiratory efficiency, boost oxygen delivery to muscles, and support the recovery process (Sengupta, 2012). Techniques such as Nadi Shodhana (alternate nostril breathing) and Ujjayi Pranayama regulate the heart rate, lower blood pressure, and induce relaxation, helping athletes enter a recovery-optimized state for muscle repair and energy restoration.

Recovery is not only about physical healing but also about building mental and emotional resilience. Yoga practices like meditation and mindfulness help athletes cope with the psychological challenges of injury and

recovery (Gard et al., 2014). Training schedules, competition stress, and performance pressure can lead to mental fatigue and burnout. Yoga's meditative practices, like guided relaxation and mindfulness meditation, help athletes manage stress, sharpen focus, and maintain a positive mindset. Incorporating Yoga Nidra into recovery routines can reduce stress and improve sleep quality.

## YOGA FOR POST-INJURY REHABILITATION

Yoga has been increasingly recognized as an effective form of physical rehabilitation for individuals recovering from various injuries. Yoga postures, or asanas, have been shown to activate specific muscle groups that can aid in the recovery process (Rathore et al., 2017).

One key aspect of yoga's efficacy in rehabilitation is its holistic approach. Yoga exercises challenge the body in varied ways, engaging the entire musculoskeletal system (Grabara & Szopa, 2015). This holistic challenge can help optimize body functioning and minimize movement constraints. (Polsgrove et al., 2015) For example, the Warrior 2 pose requires an upright torso twisted inward, with the hips and head twisted in the opposite direction, engaging various muscle groups simultaneously. (Polsgrove et al., 2015)

Yoga's benefits extend beyond the physical realm. Yoga has traditionally been viewed as a relatively safe form of exercise, with practices aimed at aligning, strengthening, and balancing the structure of the body. Furthermore, yoga has been used to enhance dynamic control of core stabilizing muscles, which can help reduce lower back pain through increased hip and spinal flexibility. (Rathore et al., 2017).

## INTEGRATING YOGA INTO REHABILITATION PROTOCOLS

Yoga has gained significant attention in the realm of rehabilitation and physical therapy in recent years. The therapeutic potential of yoga has been explored for various medical conditions, including spinal cord injuries and conditions affecting older adults. (Curtis et al., 2017)

Recent studies have suggested that yoga can be as effective as traditional stretching and strengthening exercises in improving functional fitness outcomes (Gothe & McAuley, 2015). This finding holds important implications, as yoga may serve as an accessible and enjoyable form of physical activity for individuals who may have difficulty performing conventional exercises. (Gothe & McAuley, 2015)

Individuals with spinal cord injuries have reported a need for highly individualized treatment approaches, including complementary health therapies for SCI-related pain (Curtis et al., 2017). Yoga, with its focus on physical postures and deep concentrative awareness, may be a promising intervention for this population. Furthermore, studies have demonstrated that regular yoga practice can enhance flexibility, strength, balance, and body posture, which are all important considerations for individuals with spinal cord injuries. (Grabara & Szopa, 2015; Gothe & McAuley, 2015).

The benefits of yoga may extend beyond physical improvements, as it has the potential to positively impact psychological well-being. Factors such as self-compassion and psychological flexibility, which are theoretically relevant for individuals with SCI, have yet to be explored in the context of rehabilitation interventions.

## CONCLUSION

Yoga is a powerful and holistic tool in sports recovery, offering benefits beyond traditional methods. It integrates both physical and mental aspects of recovery, making it an ideal complement to other techniques. Through postures, breathwork, and mindfulness, yoga accelerates muscle recovery, improves flexibility, reduces injury risk, and promotes psychological resilience. However, there is a need for further research to fully understand its long-term impact on athletic performance. Comparing yoga's benefits to other recovery

modalities and assessing its long-term effects on injury prevention and performance enhancement are essential next steps.

Athletes from diverse disciplines can benefit from sport-specific yoga programs that target their unique recovery needs. By tailoring yoga routines to specific sports, athletes can benefit from enhanced muscle recovery, improved flexibility, and reduced injury risks, leading to better performance outcomes and a lower incidence of overuse injuries.

As sports recovery continues to evolve, integrating yoga as a standard practice in athletic training regimens has the potential to revolutionize recovery strategies. Research and practical application should work together to ensure athletes have access to the best tools for maintaining peak performance. Yoga's ability to enhance both physical and mental well-being makes it a vital recovery strategy that athletes cannot afford to overlook.

## REFERENCES

Cowen, V. S., & Adams, T. B. (2005). Physical and perceptual benefits of yoga asana practice: results of a pilot study. Journal of bodywork and movement therapies, 9(3), 211-219.

Curtis, K., Hitzig, S. L., Bechsgaard, G., Stoliker, C., Alton, C., Saunders, N., ... & Katz, J. (2017). Evaluation of a specialized yoga program for persons with a spinal cord injury: a pilot randomized controlled trial. *Journal of pain research*, 999-1017.

Gard, T., Hölzel, B. K., & Lazar, S. W. (2014). The potential effects of meditation on age- related cognitive decline: a systematic review. *Annals of the New York Academy of Sciences*, *1307*(1), 89-103.

Grabara, M., & Szopa, J. (2015). Effects of hatha yoga exercises on spine flexibility in women over 50 years old. *Journal of physical therapy science*, *27*(2), 361-365.

Gothe, N. P., & McAuley, E. (2016). Yoga is as good as stretching–strengthening exercises in improving functional fitness outcomes: Results from a randomized controlled trial. *Journals of Gerontology Series A: Biomedical Sciences and Medical Sciences*, *71*(3), 406-411.

Gura, S. T. (2002). Yoga for stress reduction and injury prevention at work. *Work*, *19*(1), 3-7.

Polsgrove, M. J., Eggleston, B. M., & Lockyer, R. J. (2016). Impact of 10-weeks of yoga practice on flexibility and balance of college athletes. *International journal of yoga*, *9*(1), 27-34.

Rathore, M., Trivedi, S., Abraham, J., & Sinha, M. B. (2017). Anatomical correlation of core muscle activation in different yogic postures. *International journal of yoga*, *10*(2), 59-66.

Sengupta, P. (2012). Health impacts of yoga and pranayama: A state-of-the-art review. *International journal of preventive medicine*, *3*(7), 444.

Tran, M. D., Holly, R. G., Lashbrook, J., & Amsterdam, E. A. (2001). Effects of Hatha yoga practice on the health- related aspects of physical fitness. *Preventive cardiology*, *4*(4), 165-170.

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# ANALYSIS OF EXPLOSIVE STRENGTH AMONG HANDBALL AND VOLLEYBALL INTER COLLEGIATE FEMALE PLAYERS

**Suma Tadavalakar**
**Research Scholar**

**Prof. D. M. Jyoti**
**Research Guide**

**Department of Studies in Physical Education and Sports Sciences,**
**KARNATAKA STATE AKKAMAHADEVI WOMEN'S UNIVERSITY, VIJAYAPURA.**

## ABSTRACT
Purpose of the study was to Analysis of explosive strength of KSAW, University, Vijayapura Karnataka State inter-collegiate Handball and Volleyball players. For this purpose a total 24 subjects (N=12 from respective game) age between of 18-25 years were selected as the subject for the study. The collected data on explosive strength were analysed through descriptive statistics, independent t-test at the level of confidence 0.05. Significance difference was found in explosive strength among Female Handball and Volleyball inter-collegiate. On the basis of the results and findings it was concluded that Volleyball Female players have more than the handball Female Players of vertical explosive strength at intercollegiate level.
**Keywords:** Explosive strength, Handball and Volleyball, inter-collegiate Female Players

## INTRODUCTION
Physical education is one of the most ancient arts of the humanities. In its broadest interpretation physical education is defined as the art and science of voluntary purposeful and active human movement. It is clear that physical education is concerned with a fundamental mode of human expression. Likewise, it is an essential form of non verbal communication which can be communicated very effectively depending and does, express a wider range of emotions while participating in a group towards the activities of physical education (john Nixon, 1980).

The team handball game of today was formed by the end of the 19th century in northern Europe, primarily Denmark, Germany, Norway and Sweden. The Dane Holger Nielsen drew up the rules for modern handball (håndbold) in 1898 and published them in 1906, and R.N. Ernst did something similar in 1897. The International Handball Federation was formed in 1946. Men's field handball was played at the 1936 Summer Olympics in Berlin at the request of Adolf Hitler. It was removed, to return as team handball for the 1972 Summer Olympics in Munich. Women's team handball was added at the 1976 Summer Olympics. Since the 1995 world championship in Iceland, the competition has been every two years. The women's world championship has been played since 1957.

Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules.[1] It has been a part of the official program of the Summer Olympic Games since Tokyo 1964. Beach volleyball was introduced to the program at the Atlanta 1996 Summer Olympics. The adapted version of volleyball at the Summer Paralympic Games is sitting volleyball.

## PURPOSE

The purpose of the study was to Analysis of explosive strength of Female Handball and Volleyball inter-collegiate players of KSAW, University, Vijayapura Karnataka State.

## HYPOTHESES

It was hypothesized that there is a significant difference between Female Handball and Volleyball inter-collegiate players of KSAW, University, Vijayapura Karnataka State on their explosive strength.

## SELECTION OF SUBJECT

Total 24 Female subjects (i.e., N=12 in each group) were selected from KSAW, University, Vijayapura Karnataka State. The age of subjects ranged between 18-25 years. Further, simple random sampling technique was applied in selection of subjects.

## SELECTION OF VARIABLES

**Dependent Variable:** Explosive strength
**Independent Variable**: Handball and Volleyball inter-collegiate players
**Criterion Measures**
Vertical jump Test was used to assess the explosive strength of the subjects and score was recorded in centimeters.

## ADMINISTRATION OF TEST

### Vertical Jump (Sergeant Jump) Test

**PURPOSE**: To measure the explosive power ability

**Tool:** wall, powder, steel-tape

**PROCEDURE:** The athlete stands side on to a wall and reaches up with the hand closest to the wall. Keeping the feet flat on the ground, the point of the fingertips is marked or recorded. The athlete then stands away from the wall, and leaps vertically as high as possible using both arms and legs to assist in projecting the body upwards. Attempt to touch the wall at the highest point of the jump. The difference in distance between the standing reach height and the jump height is the score. The best of three attempts is recorded.

**Scoring:** The jump height is usually recorded as a distance score vertical jump technique was recorded in centimeter as score.

### Collection of data

Data on explosive strength were taken with the permission of the authorities. Further, the data on explosive strength variables were collected in a structured manner by considering the subject's engagement in the university.

**Statistical Technique**

Descriptive statistics, t-test were applied for the analysis of the selected Motor fitness variable between Handball and Volleyball inter-collegiate Female players and the level of significance was set at 0.05 level respectively.

**Table 1: Analysis of explosive strength between Handball and Volleyball inter-Collegiate Players of KSAW, University, Vijayapura Karnataka State.**

| Variable | Group | Mean | SD | Degree of Freedom | T-Ratio | Sig. Value |
|---|---|---|---|---|---|---|
| **Explosive Strength** | **Handball** | 40.8554 | 5.33750 | 49 | 4.387 | **.000** |
| | **Volleyball** | 44.3990 | 6.82922 | | | |

*Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level with df1, 49 was at 2.02).

**Table 1** indicated that the mean values of inter-Collegiate Female Handball and Volleyball players on Explosive Strength were 40.8554 and 44.3990 respectively. The obtained t-ratio value of 4.387 was greater than required table value 2.02 for significance at 0.05 level of confidence with df 1, 49.The results of the study shows that there was a significant difference that exist among inter-Collegiate Female Handball and Volleyball players on Explosive Strength. The mean values of inter-Collegiate Female Handball and Volleyball players on Explosive Strength were graphically represented in Figure 1.

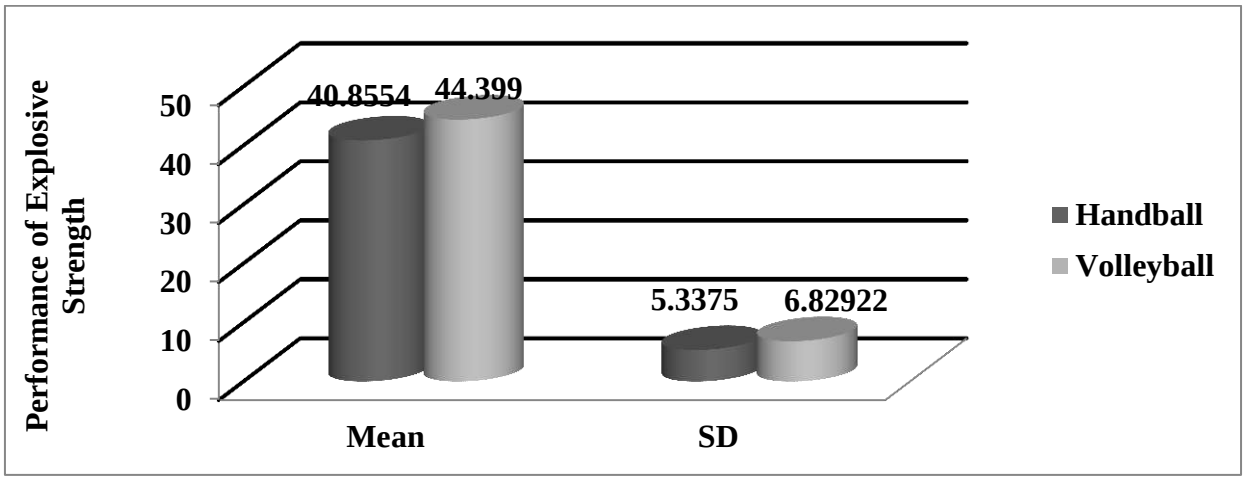


Figure No. 1 (a) the above graph shows the graphical representation of mean scores of Explosive Strength among Handball and Volleyball inter-collegiate Female players on Explosive Strength.

**DISCUSSION OF FINDINGS**

This study was conducted to compare the explosive strength between Female Handball and Volleyball players from of KSAW, University, Vijayapura Karnataka State at intercollegiate level. Further, from table no- 1 the findings of the descriptive analysis were reveals that volleyball intercollegiate players have greater mean value on explosive strength than Handball players. Moreover, table no-1 were also reveals the analyses of independent t- test and significance difference were found among Female Handball and volleyball intercollegiate players of KSAW, University, Vijayapura Karnataka State.

## DISCUSSION OF HYPOTHESIS

There was a significant difference that exists among intercollegiate Female Handball and Volleyball player on explosive strength. Volleyball players have better performance than the Handball players on explosive strength. Thus the hypothesis was accepted.

## CONCLUSION

The result of the study shows the insignificant difference between Female Handball and Volleyball players of KSAW, University, Vijayapura Karnataka State intercollegiate level. Further, it was concluded that Volleyball Female players have more than the handball Female Players vertical explosive strength at intercollegiate level.

## REFERENCES

- Baker D, Nance S, Moore M. The load that maximizes the average mechanical power output during jump squats in power-trained athletes. J Strength Cond Res. 2001;15(1):92-7.
- Dhake PB. The study of comparison of explosive power between volleyball and basketball players. Int J Phys Educ Sports Health. 2017;4(4):337-339.
- Hermoso GA, Redondo CI, Vélez RR, Ruiz JR, Ortega FB, Lee DC, et al. Muscular strength as a predictor of allcause mortality in an apparently healthy population: A systematic review and meta-analysis of data from approximately 2 million men and women. Arch Phys Med Rehabil. 2018; 99:2100-2113.
- Mane S, Jyoti DM. Comparative study on explosive strength of basketball and volleyball players. Int J Physiol Nutr Phys Educ. 2018;3(2):607-609.
- McBride JM, Nimphius S, Erickson TM. The acute effects of heavy-load squats and loaded countermovement jumps on sprint performance. J Strength Cond Res. 2005;19(4):893-7.
- Pavasini R, Guralnik J, Brown JC, di Bari M, Cesari M, Landi F, et al. Grip strength predicts cardiac adverse events in patients with cardiac disorders: An individual patient pooled meta-analysis. Heart. 2019; 105:834-841.
- Ramkumar. Comparison of Explosive Power between Male Volleyball and Basketball Players. Int J Phys Educ Fit Sports. 2014;3(1):61-64

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# EFFECT OF MEDICINE BALL EXERCISES ON SHOULDER STRENGTH AND STRENGTH ENDURANCE AMONG UNIVERSITY MEN STUDENTS

**A.Ravi Kumar**
**Research Scholar, Department of Physical Education,**
**Osmania University, Hyderabad**
**Email: ravisports88@gmail.com**

**Sr. Prof. L.B. Laxmikanth Rathod**
**Dean, Faculty of Education, Osmania University, Hyderabad**

## ABSTRACT
The purpose of the study was designed to examine the effect of Medicine ball exercises on shoulder strength and strength endurance of university men students. For the purpose of the study, thirty men students from the colleges affiliated to Osmania University, Hyderabad, Telangana, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Medicine ball exercises for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables namely shoulder strength and strength endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using pull ups and bend knee situps respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any between the groups. 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 difference between Medicine ball exercises group and control group on shoulder strength and strength endurance. And also it was found that there was a significant improvement on shoulder strength and strength endurance due to twelve weeks of Medicine ball exercises. Keywords: Medicine Ball Exercises, shoulder strength and strength endurance etc.

## INTRODUCTION
Medicine balls were originally used in Europe in the 1920s for the rehabilitation of muscle function in older patients. A few years later, medicine balls became popular in the United States when White House physician Admiral Joel Boone invented a game with medicine balls to keep President Hoover physically fit. The game was called Hoover Ball and was played with teams of two to four players who tossed a 6-lb medicine ball over a net 8 ft high on a court similar to volleyball. Nowadays, fitness professionals, youth sport coaches, and physical education teachers are rediscovering the many benefits that can be achieved by incorporating medicine ball training into youth fitness classes, personal training sessions, and sport programs". Like other types of physical activity, regular participation in a medicine ball training program has the potential to positively influence many health and fitness measures. Medicine ball training can be used to enhance muscle strength, muscle power, coordination, agility, balance, and speed.

## METHODOLOGY
The purpose of the study was designed to examine the effect of Medicine ball exercises on shoulder strength and strength endurance of university men students. For the purpose of the study, thirty men students from

the colleges affiliated to Osmania University, Hyderabad, Telangana, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Medicine ball exercises for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables namely shoulder strength and strength endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using pull ups and bend knee situps respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any between the groups. 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.

## ANALYSIS OF THE DATA

**Shoulder strength:** The analysis of covariance on shoulder strength of the pre and post test scores of Medicine ball exercises group and control group have been analyzed and presented in Table I.

**TABLE I**
**ANALYSIS OF COVARIANCE OF THE DATA ON SHOULDER STRENGTH OF PRE AND POST TESTS SCORES OF MEDICINE BALL EXERCISES AND CONTROL GROUPS**

| Medicine ball exercises group | Control Group | Source of Variance | Sum of Squares | df | Mean Squares | Obtained 'F' Ratio |
|---|---|---|---|---|---|---|
| **Pre Test** | | | | | | |
| Mean 34.53 | 33.27 | Between | 12.03 | 1 | 12.03 | 3.04 |
| S.D. 2.03 | 2.15 | Within | 110.67 | 28 | 3.95 | |
| **Post Test** | | | | | | |
| Mean 41.67 | 33.53 | Between | 496.13 | 1 | 496.13 | 22.73* |
| S.D. 1.81 | 1.75 | Within | 611.20 | 28 | 21.83 | |
| **Adjusted Post Test** | | | | | | |
| Mean 41.27 | 33.93 | Between | 364.19 | 1 | 364.19 | 137.76* |
| | | Within | 71.38 | 27 | 2.64 | |

* Significant at .05 level of confidence.
(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table I shows that the adjusted post-test means of Medicine ball exercises group and control group are 41.27 and 33.93 respectively on shoulder strength. The obtained "F" ratio of 137.76 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on shoulder strength. The results of the study indicated that there was

a significant difference between the adjusted post-test means of Medicine ball exercises group and control group on shoulder strength.

**STRENGTH ENDURANCE**

The analysis of covariance on strength endurance of the pre and post test scores of Medicine ball exercises group and control group have been analyzed and presented in Table II

**TABLE II: ANALYSIS OF COVARIANCE OF THE DATA ON STRENGTH ENDURANCE OF PRE AND POST TESTS SCORES OF MEDICINE BALL EXERCISES AND CONTROL GROUPS**

| Test | Medicine ball exercises group | Control Group | Source of Variance | Sum of Squares | df | Mean Squares | Obtained 'F' Ratio |
|---|---|---|---|---|---|---|---|
| **Pre Test** | | | | | | | |
| Mean | 41.53 | 41.80 | Between | 0.53 | 1 | 0.53 | 0.31 |
| S.D. | 1.20 | 1.71 | Within | 48.13 | 28 | 1.72 | |
| **Post Test** | | | | | | | |
| Mean | 48.47 | 42.07 | Between | 307.20 | 1 | 307.20 | 23.13* |
| S.D. | 1.33 | 1.18 | Within | 371.87 | 28 | 13.28 | |
| **Adjusted Post Test** | | | | | | | |
| Mean | 48.57 | 41.97 | Between | 323.32 | 1 | 323.32 | 235.69* |
| | | | Within | 37.04 | 27 | 1.37 | |

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table II shows that the adjusted post-test means of Medicine ball exercises group and control group are 48.57 and 41.97 respectively on strength endurance. The obtained "F" ratio of 235.69 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on strength endurance. The results of the study indicated that there was a significant difference between the adjusted post-test means of Medicine ball exercises group and control group on strength endurance.

**CONCLUSIONS**

1. There was a significant difference between Medicine ball exercises group and control group on shoulder strength and strength endurance.
2. And also it was found that there was a significant improvement on selected criterion variables such as shoulder strength and strength endurance due to Medicine ball exercises.

## REFERENCES

Deborah A. Wuest and Charles A. Bucher (2010) Foundations of Physical Education, Exercise Science, and Sports. New Delhi: Tata McGraw- Hill.

Frederick C. Hatfield (2011) Fitness Complete Guide. International Sports Science Association, Carpinteria.

Lorne Goldenberg and Peter Twist (2007) Strength Ball Training. United States, Human Kinetic Publishers, INC, p.1.

Szymanski DJ, et.al., (2007) Effect of twelve weeks of medicine ball training on high school baseball players, Journal of Strength and Conditioning Research

Tonnessen E, et.al., (2012) The effect of 40-m repeated sprint training on maximum sprinting speed, repeated sprint speed endurance, vertical jump, and aerobic capacity in young elite male soccer players, Journal of Strength and Conditioning Research.

Tous-Fajardo J, et.al., (2015) Change of Direction Speed in Soccer Players is Enhanced by Functional Inertial Eccentric Overload and Vibration Training, International Journal Sports Physiology Performance.

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# EFFECT OF HILL RUNNING AND CIRCUIT TRAINING ON THE DEVELOPMENT OF LEG EXPLOSIVE POWER AMONG SOCCER PLAYERS OF OSMANIA UNIVERSITY, HYDERABAD, TELANGANA

**M.A. Rasheed**
**Ph. D Scholar, Department of Physical Education**
**Osmania University, Hyderabad, Telangana**
**Email: iipfinfo1@gmail.com**

**Prof. P. Venkat Reddy**
**Professor (Retd) Department of Physical Education**
**Osmania University, Hyderabad, Telangana**

**ABSTRACT:**
The objective of the study is to determine the effect of Hill Running and Circuit Training on the development of Leg Explosive Power among Soccer Players of Osmania University. To achieve the purpose of this study, forty-five soccer players of Osmania University were randomly selected between the age group of 18 to 21 Years. The selected subjects were randomly assigned into three groups. Group I 15 Members acted as experimental group which Hill Running (HT), Group II 15 Members acted as experimental group which Circuit Training (CT) Group III did not participated in any special training and were strictly under control (CG). The Treatment is given to Soccer Players for twelve weeks. To assess the Leg Explosive Power, the Standing Broad Jump Test were used in the Pre Test and Post Test of the Study. This study shows that the Experiment Group of Circuit training and HillTraining both performed equally than control group. It is concluded that due to Circuit and Hillo Training there is a improvement of Explosive Power among Soccer Players. Key words: Circuit Training, Hill Running, Explosive Power, Soccer etc.

## INTRODUCTION:

Football players frequently perform different rapid and sudden movements as quick development of force, sprinting, jumping, changing direction, high power shooting, different body impacts, etc. Therefore, the players require high-intensity anaerobic capacity. It is the ability to perform at maximal capacity for short periods and to minimize the amount of lactic acid production in the working muscle at a level of insufficient oxygen availability.

Dr. G. Syam Kumar (2023) The objective of the study is to determine the effect of Hill Running for development of explosive Power among Kabbadi Players of J.N.T.U. Kakinada between the age group of 18 to 25 Years.The sample for the present study consists of 30 Male Kabbadi Players out of which 15 are experimental group and 15 are controlled group. Hill Running were given to the Experimental Group along with general training of Kabbadi and control group has doing general Training of Kabbadi for Twelve weeks. To assess the explosive power in legs Standing Broad Jump Test were used in the Pre Test and Post Test of the Study. This study shows that the Experiment Group increase the explosive power compare to the control group. It is concluded that due to Hill Running there is a improvement of explosive power among Kabbadi Players. Key words: Hill running, Kabbadi, explosive power etc

Rajesh Kumar (2023) studied the Effect of Hill Running and Circuit Training for Development of Aerobic Fitness among Marathon Runners Marathon is long distance running of 42.195 KM on road. Hill Running

and Circuit Training are important training methods to develop Aerobic fitness among Marathon Runners. The Purpose of the study was to find Aerobic Fitness among Marathon Runners of Telangana State in India. Methods: Male Marathon Runners of Telangana State in India who participated in different Marathon events aged 25 to 30 Years were divided into three groups of fifteen each, experimental group of Hill running (n = 15), Circuit Training group (n = 15) and a control group (n= 15). Both experimental groups trained on alternate days for twelve weeks 1 hour per session and control group underwent general training of Marathon on alternate days. Pre Test and Post Test were conducted among three groups for 12 Min Run Cooper Test to find the maximum distance covered in 12 Min. Results: The results of the study represented by mean and SD showed in pre and post-test a reading of 2391.83±102.57 & 2678.50±109.11 in hill training group with an F ratio of 129.92 at 0.000 level of confidence, whereas circuit training group with mean and SD of 2365.00±90.45 in pre & 2518.30±79.78 in the post with F ratio of 129.92 significant at 0.000 level of confidence indicating that hill training group had noteworthy improvements in performance than circuit training and control groups. Circuit Training group also showed improvements. It is concluded that Hill Running is the good training method to develop the aerobic fitness

**PURPOSE OF RESEARCH:**

The Purpose of the study is to determine the effect of Hill Running and Circuit Training on the development of Speed among Soccer Players of Osmania University

**METHODOLOGY.**

To achieve the purpose of this study, forty-five soccer players of Osmania University were randomly selected between the age group of 18 to 21 Years. The selected subjects were randomly assigned into three groups. Group I 15 Members acted as experimental group which Hill Running (HT), Group II 15 Members acted as experimental group which Circuit Training (CT) Group III did not participated in any special training and were strictly under control (CG). The Treatment is given to Soccer Players for twelve weeks. To assess the Speed 30 M Run were used in the Pre Test and Post Test of the Study.

**Results and Discussion:**

**TABLE – 1: ANALYSIS OF VARIANCE OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON LEG EXPLOSIVE POWER**
**(Units in Meters)**

| Test | HT | CT | CG | SV | SS | df | MS | 'F' Ratio | P-Value |
|---|---|---|---|---|---|---|---|---|---|
| Pre Test | | | | | | | | | |
| Mean | 2.11 | 2.10 | 2.10 | Between | 0.05 | 2 | 0.002 | 0.61 | 0.55 |
| SD | 0.06 | 0.06 | 0.06 | Within | 0.33 | 87 | 0.004 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Post Test | | | | | | | | | |
| Mean | 2.19 | 2.19 | 2.06 | Between | .356 | 2 | 0.18 | 44.79 | 0.00 |
| SD | 0.08 | 0.05 | 0.05 | Within | .346 | 87 | 0.004 | | |

*Significant (P<0.05).

**RESULTS OF LEG EXPLOSIVE POWER:**

Table 1shows the analyzed data of Leg Explosive Power. Pre-test: The M ± SD of the Group – 1,2 & 3 pre-test leg explosive power scores are 2.11 ± 0.06, 2.10 ± 0.06 and 2.10 ± 0.06 respectively. The 0.61 pretest F value obtained was less than the 0.55 P-value needed. "As a result, the pre-test men's importance of Hill Training (HT), Circuit Training (CT) and control group of leg explosive power prior to the start of the respective treatments were found to be insignificant at 0.05 level of trust for degrees 2 and 87 of freedom, Post-test: The M ± SD of the Group - 1, 2 & 3 post-test scores are 2.19 ± 0.08, 2.19 ± 0.05and 2.06 ± 0.05respectively. The 44.79value obtained after test F was greater than the 0.00 p-value. For the degrees of freedom 2 and 87, thus, the mean leg explosive power after the test showed significant confidence at 0.05. Accordingly, the results obtained showed that the intervention of HT and CT on leg explosive power significantly improved among treatment groups.

**TABLE – 2: SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON LEG EXPLOSIVE POWER AMONG DIFFERENT GROUPS**
**(Units in Meters)**

| G1-HT | G2-CT | G3-CG | Mean Differences | P-Value |
|---|---|---|---|---|
| 2.19 | 2.19 | | 0.00 | 1.00 |
| 2.19 | | 2.06 | 0.13* | 0.00 |
| | 2.19 | 2.06 | 0.13* | 0.00 |

*The table 2 shows a paired means difference on leg explosive power*

**RESULTS OF POST HOC TEST ON LEG EXPLOSIVE POWER SIGNIFICANT COMPARISONS:**

1. Hill Training and Control Groups
2. Circuit Training and Control Groups.

The mean difference values of above comparisons were 0.13 and 0.13 respectively, which is higher than the p-value 0.00. This indicates that these comparisons were significant. Hence, these pair wise comparisons have shown different effect on leg explosive power.

**CONCLUSIONS:**

This study shows that the Experiment Group of Circuit and Hill training performed better than control group. It is concluded that due to Circuit and Hill Training there is a improvement of Explosive Power among Soccer Players.

**RECOMMENDATIONS:**

Coaches and trainers should consider integrating Circuit Training and Hill running into their regular training regimens for Soccer players. Tailoring the training to the specific demands of the sport and monitoring player progress will help optimize performance outcomes.

**REFERENCES:**

Rajesh Kumar(2023) studied the Effect of Hill Running and Circuit Training for Development of Aerobic Fitness among Marathon Runners, MIKI 13 (1) (2023): 1-5 p-ISSN 2088-6802 | e-ISSN 2442-6830 Media Ilmu Keolahragaan Indonesia https://journal.unnes.ac.id/nju/index.php/miki

Rajesh Kumar and Erika Zemková (2022) The Effect of 12-Week Core Strengthening and Weight Training on Muscle Strength, Endurance and Flexibility in School-Aged Athletes*Appl. Sci.* **2022**, *12*(24), 12550; **Impact Factor:** 2.838 (2021); 5-Year Impact Factor: 2.921 (2021) **ISSN: 2076-3417**

Dr. G.Shyam Kumar(2023) Effect of Hill Running for development of Explosive Power among Kabbadi Players of JNTU Kakinada, A.P. © 2023, IRJEdT Volume: 05 Issue: 05 | May-2023