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Analysis Of University Physical Education Curriculum And Design Of Management System Based On Decision Tree Algorithm

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Abstract
with the deepening of informatization, the operation and maintenance management of campus network and information system and the construction and development of new system are becoming more and more. College physical education teaching and management process has produced a large number of attendance, testing, evaluation and other information resources. In order to mine the above information data and improve the quality of physical education, the design and application of decision tree algorithm in the analysis and management of college physical education curriculum is proposed. This paper analyzes the data mining method-c 4.5 decision tree algorithm, and gives the framework of course analysis and management system and its database design. Finally, ASP.NET development language is adopted to implement the system. The database is SQL Server 2008 and the development environment is Visual Studio 2010. The test results show that the designed analysis and management system of college physical education curriculum performs well in terms of running time and accuracy, providing data support in terms of efficiency and quality for the process management of college physical education curriculum.

Key words: college sports; Decision tree; ASP.NET; Management system; Course analysis

Introduction

With the advent of the era of big data, computer technology continues to progress, and teaching informatization continues to develop and update. Colleges and universities begin to gradually popularize various modern teaching equipment and relevant management systems, such as blue ink cloud class, MOOC, intelligent classroom interaction, etc.(Yiting Zhang&Fu Xiong&Chen Lei,2012). However, the development and implementation of information-based teaching inevitably produces a large number of teaching management data. If these large quantities of information data are not used, it is bound to cause a huge waste of resources. Nevertheless, if manual means are adopted for analysis and processing, it will bring more time and higher labor costs. Therefore, it is necessary to use computers to liberate teachers from a lot of complicated and repetitive labor(Ru Feng&Xiaohong Peng&Ligang Hou, 2016). How to extract the necessary connections and potential relationships in these data according to the properties and requirements of different courses has become the research direction and hotspot of various course teaching management systems.

Data mining, as a rapidly emerging interdisciplinary discipline in the world recently, has collected research results from machine learning, pattern recognition, database, statistics, artificial intelligence and other fields (Joseph&Hlomani&Letsholo,2016). The large-scale popularization of computers has produced massive data. Data mining can process and analyze massive data by integrating the technical achievements of the above disciplines. At present, the application of data mining in the teaching management system is in the initial stage, and there is not much research in this area. Therefore, there are few cases applied to the teaching of college physical education. Yu hongying put forward an evaluation scheme of business English practice teaching effectiveness based on ID3 decision tree in the paper

"evaluation of business English practice teaching effectiveness based on decision tree" published in the bulletin of science and technology(Hongying Yu. 2016). That is to say, the existing achievement management system of university physical education course has no performance analysis function, so it cannot provide powerful technical support for the improvement of the efficiency and quality of university physical education teaching.

Using decision tree algorithm of data mining to extract characteristics and relationships of data in university physical education curriculum work, combined with comprehensive evaluation analysis such as check on work attendance and form students' personalized information for reference, which provides valuable data support for physical education teachers to teach students in accordance of their aptitude, in order to effectively improve the quality and efficiency of university physical education teaching and management. Therefore, the application of decision tree algorithm in the analysis and management of college physical education curriculum is proposed. Firstly, this paper studies the demand of the process performance analysis, such as attendance and examination, and gives the analysis of college physical education curriculum, the framework of management system and the design of its database. Then, the optimized C4.5 decision tree algorithm is used to realize specific data mining. This system USES the ASP.NET development language, of which the database is SQL Server 2008, the development environment is Visual Studio 2010.

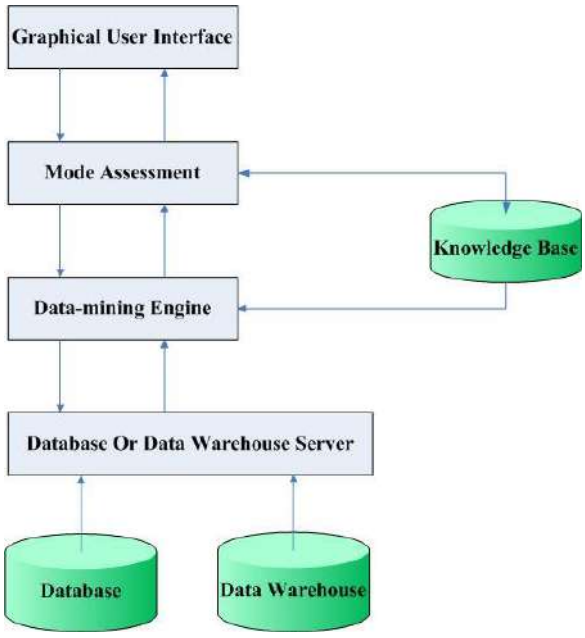
Analysis And Interpretation Of The Data

2.1. Technology and method of data mining

2.1.1 Data Mining Technology

Data mining is a high-level treating process to extract potential, effective and understandable patterns from massive data according to established business objectives. It makes use of the existing database management system's query, retrieval and reporting function, combines with multi-dimensional analysis and statistical analysis method to carry on on-line analysis processing, thus obtains the statistical analysis data for the decision-making reference. Data mining patterns are mainly divided into:Classification, Clustering, Regression, Association, Sequential, etc. Its standard data mining system structure is shown in figure 1.

Figure 1. Standard Data Mining System Structure



2.1.2 C4.5 Decision Tree Data Mining Method

At present, data mining methods are mainly divided into: inductive learning method, clustering method, statistical analysis method, fuzzy mathematical method, bionics technology, etc. Information theory method (decision tree method) is commonly used in inductive learning method, among which ID3 and C4.5 algorithms are the most typical decision tree classification algorithms(Safavian&Landgrebe,2002).The data mining method adopted in this paper is C4.5

algorithm. Compared with ID3 algorithm, C4.5 algorithm improves continuous attributes and default state and accelerates the ripening speed of tree pruning. Different from ID3 algorithm, C4.5 selects the split attribute through the information gain ratio, that is, the training data set is divided into several sub-data sets according to the value of attribute A. The "split information" of attribute A is(Gligorov&Williams,2012):

$$SplitInfo_A(S) = -\sum_{j=1}^{m} \frac{|S_j|}{|S|} \log_2 \frac{|S_j|}{|S|} \tag{1}$$

Among it, S is the training data set, m is the number of sub-data sets, $|S_j|$ is the number of samples in the jth sub-data set, and $|S|$ is the total number of samples in the data set before partition.

After the splitting step of attribute A, the information gain of the sample set can be expressed as:

$$InfoGain(S, A) = E(S) - E_A(S) \tag{2}$$

Among it, $E(\cdot)$ is the information entropy, and $E_A(\cdot)$ is the information entropy classified by attribute A as the root.

After the splitting step of attribute A, the information gain ratio of the sample set can be expressed as:

$$InfoGainRation(S, A) = \frac{InfoGain(S, A)}{SplitInfo_A(S)} \tag{3}$$

In the implementation of C4.5 algorithm, the top-down PEP(Pessimistic Error Pruning) pruning method is adopted(Barros R C&Freitas A A.,2012), with the following pruning requirements:

$$ErrorMean + ErrorSTD \geq ErrorMean' \tag{4}$$

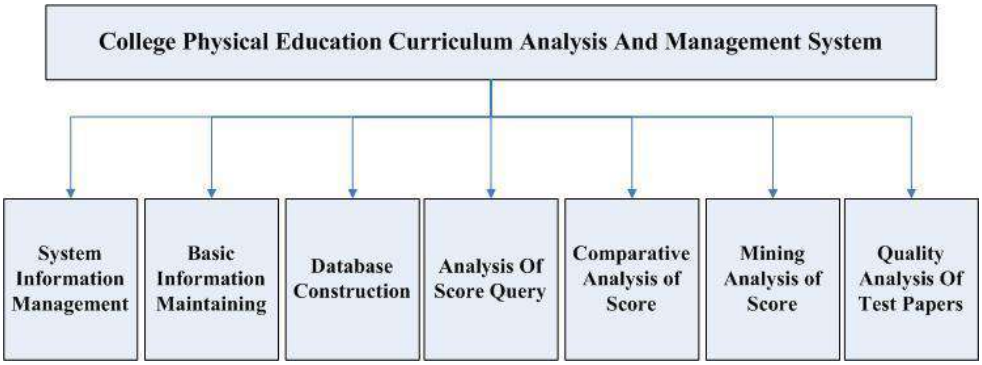
Among it, $ErrorMean'$ is the mean value of the miscalculation times of leaf node on the subtree, $ErrorMean$ is the mean value of the miscalculation times, and $ErrorSTD$ is the standard deviation of the miscalculation times.

2.2. Analysis Of College Physical Education Curriculum And Design Of Management System

2.2.1 Overall Framework Design Of The System

In view of the problems frequently encountered in the management of university physical education teaching, by using advanced information means combined with appropriate data mining methods, a large amount of relevant data of physical education courses can be counted and analyzed intelligently, so as to complete the inquiry and analysis of students' college physical education results. Using such a system can not only quickly and accurately to carry on the statistics and analysis of the course grade, such as sorting, and query of the grade, but also reasonably plan the activity table of physical education according to the results of different sports items selected by students to fit students' interests and physical qualities, so as to strengthen students' enthusiasm to participate in sports activities of different sizes, and finally complete the organic combination of basic teaching and personalized education. The framework of university physical education curriculum analysis and management system is shown in figure 2.

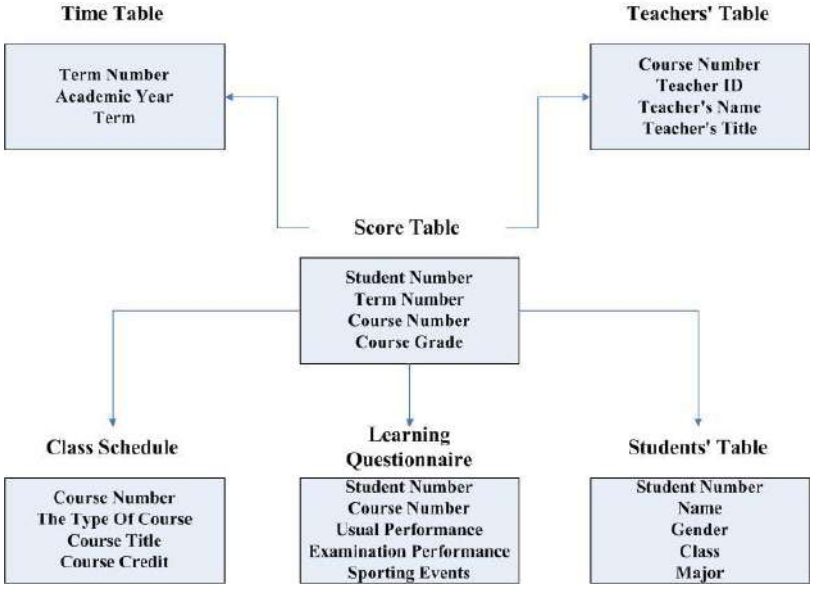
Figure 2. System Frame Diagram



2.2.2 Database Design

SQL Server 2008 software is used in the database design of the system. The data model of the analysis system is shown in figure 3. Students' tables, schedules, learning questionnaires, teachers' tables and course schedules are associated with each other centering on student performance tables, which fully covers all aspects of data in college physical education teaching activities.

Figure3.Analysis System Data Model Diagram



2.3. System Implementation And Test

The programming work of this design system is carried on in the Microsoft Windows 7 operating system platform, and the database management software is Microsoft SQL Server 2008 simplified Chinese enterprise edition. The development language is ASP.NET and B/S architecture is adopted.

2.3.1 Application Of C 4.5 Algorithm In Physical Education Curriculum Analysis System

In this paper, the results of college physical education courses of the students of 2018 from a university are taken as an example to conduct data mining analysis, and the C 4.5 algorithm is specifically applied in the analysis system of college physical education courses.

The sports test data of 735 students selected by the class of 2018 are shown in table 1.

Table1. Statistical Table Of Sports Test Data

School Enrollment Number	Sporting Events				Course Grade
	Basketball	Sprint	Broad-jump	Rope Skipping	
18063	72	83	87	90	A
18064	69	74	82	87	B
18065	65	90	84	76	B
…	…	…	…	…	
18797	62	66	65	63	D
18798	66	71	72	68	C

According to the test data of sports items shown in table 1, C4.5 algorithm is used to generate the decision tree. Some codes of the program are as follows:

```
print('Start training...')
tree = train(train_features, train_labels, list(range(feature_len)))
time_3 = time.time()
print('training cost %f seconds' % (time_3 - time_2)
print('Start predicting...')
test_predict = predict(test_features,tree) time_4 = time.time()
print('predicting cost %f seconds' % (time_4 - time_3))
```

2.3.2 Result Of System Test

The functional test and performance test of the university physical education curriculum analysis and management system are carried out. In the functional test, the system runs well with smooth operation and good man-machine interaction effect. The basic information maintenance interface of students in the system is shown in figure 4. In the performance test, compared with the course performance analysis system based on ID3 algorithm(Hongying Yu,2016), the time required for data processing of this system is reduced by about 12%, and the accuracy of data set analysis is improved by about 8%.

Figure4. Operation Interface Diagram Of University Physical Education Curriculum Analysis And Management System

Conclusion

In the era of big data, information technology is used to manage college physical education courses, which provides effective data support for the improvement of college physical education teaching connotation. In order to solve the problems of physical education course attendance, test and other process scores, this paper puts forward a physical education course analysis and management system based on decision tree algorithm. The system USES decision tree algorithm to extract data features and relationships in physical education curriculum, and combines the analysis of college physical education curriculum results to form personalized information of students for reference, which provides valuable data support and theoretical reference for physical education teachers to teach students in accordance of their aptitude. The system can effectively improve the quality and efficiency of physical education teaching and management, and provide scientific and reasonable data support for the concrete construction and practice approach of college physical education connotation.

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Active Education: Growing Evidence On Physical Activity And Academic Performance

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Abstract
The Institute of Medicine has called on school leaders to offer more opportunities for children to be physically active before, during and after the school day. Further, both childhood obesity and poor academic performance tend to be clustered in schools with a high percentage of lower-income, minority students, creating a student health issue that is especially problematic in that communities.There is a growing body of evidence indicating that physical activity and fitness can benefit both health and academic performance for children. These research brief reviews published scientific articles that examine how physical activity and fitness may help school-aged children maximize their academic performance. It also provides an overview of the effects of physical activity on the developing brain.
Keywords:- Growing, Evidence, Physical Activity and Academic Performance

Introduction:-
One of every three children in the United States is overweight or stout. Fat youth have raised hazard for medical issues like coronary illness, type 2 diabetes, hypertension, unfortunate blood cholesterol designs, and other wellbeing dangers identified with cardiovascular infection. Corpulence can likewise have genuine repercussions for children's psychological improvement and influence school participation. Because kids invest such a great amount of energy at school, schools have a remarkable chance to enable kids to turn out to be increasingly sound and dynamic. The Institute of Medicine has approached school pioneers to offer more open doors for kids to be physically dynamic previously, during and after the school day. Further, both youth corpulence and poor scholarly execution will in general be grouped in schools with a high level of lower-pay, minority understudies, making an understudy medical problem that is particularly tricky in those communities. There is a developing assemblage of proof demonstrating that physical action and wellness can profit both wellbeing and scholastic execution for kids.

This exploration brief surveys distributed logical articles that look at how physical movement and wellness may help school-matured kids expand their scholastic execution. It likewise gives a diagram of the impacts of physical action on the creating mind. Together, the exploration shows that giving physical action to understudies is in accordance with schools' scholastic mission, and that schools have numerous open doors for helping youngsters to be progressively dynamic. Single sessions of physical movement can upgrade consideration and memory. Following only one session of physical movement, youngsters can build their consideration and memory, and diminish wrong conduct, for example, being unfocused and making others turned out to be diverted. The impacts of physical movement on mind wellbeing may clarify enhancements in scholastic execution. Mind procedures, for example, guiding one's consideration, exchanging consideration among undertakings, and moving data from short-to long haul memory are vital activities for learning. As of late, researchers have been analyzing the hidden cerebrum works that may clarify a portion of the quick and progressively slow scholastic advantages of physical movement.

Effect of Afterschool Physical Activity Program on Children's

Neural ActivityThis realistic delineates the distinctions in kids' normal measure of neural movement toward the start and following nine months of taking part in an afterschool physical action program. The pictures, taken from the highest point of the head, utilize blue to speak to low neural movement and red for high cerebrum action. Physically fit youngsters exhibit memory and proficiency of the cerebrum (i.e., by distributing all the more working memory to finish a given assignment) through two learning methodologies: social memory, which includes recollecting objects by utilizing a signal, for example, turn left after you pass the school, and working memory, which includes moving data from the short-to long haul memory. This is significant on the grounds that youngsters use connections, for example, understanding that "three gatherings of three" and "multiple times three" are both math certainties with a similar answer, to recollect and review data.

Conclusions:-

Regular participation in physical activity and higher levels of physical fitness have been linked to improved academic performance and brain functions, such as attention and memory. These brain functions are the foundation for learning. Long-term studies have demonstrated that increases in physical activity, resulting from greater time spent in physical education, were related to improved academic performance. Even single sessions of physical activity have been associated with better scores on academic tests, improved concentration, and more efficient transfers of information from short- to long-term memory. Children participating in physical activity are better able to stay focused and remain on task in the classroom, thus enhancing the learning experience.

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Ideological and Philosophical Themes in Physical Education

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Abstract
This paper examines what are referred to as the 'philosophies' of physical education (PE) In the main, teachers' 'philosophies' revolved around a number of recognisable categories of meaning in terms of the ideological themes of 'sport', 'health', 'academic value' and, albeit to a lesser extent, 'education for leisure'. One leitmotif, in particular, emerged from the interview data and that was an overriding concern, on the part of the teachers in the study, with pupils' 'enjoyment' of PE. As an academic discipline, the philosophy of sport has been in existence for a relatively short period. Although the philosophy of sport as an academic endeavour is relatively young, the philosophical view of sport itself is not new. Although sport was a major activity according to the Greeks and Romans, it lost its importance during the Middle Ages. After the Renaissance, education came to be seen as a necessity. With its incorporation and utilisation in the educational curriculum, physical education obviously became more common in the curricula of the Renaissance and Reformation than it had been in the Middle Ages.
Key words: Ethics, Values, Renaissance, Physical education and Sports.

Introduction

The ancient educational system was imitated during the Renaissance, and in the 15th and 16th centuries, school physical training began again. Hieronymus Mercurialis, an Italian humanist, wrote “De Arte Gymnastica” by gathering information related to Greek gymnastic culture from old Greek and Roman sources just as in 16th century, when scholars had differentiated Ancient Greek gymnastics into forms pertaining to health, paramilitary training and athletic/competition; in this work, gymnastic practices were again categorized according to various periods and thought systems (Yildiran, 2005). Reform pedagogues of the age of enlightenment, philanthropists such as Basedow, Salzmann, GutsMuths etc. laid the scientific foundations of modern physical training during the 18th century and heavily influenced the intellectuals of the next century deeply (Yildiran, 2005). The aim of this study is to examine the “Evolution of Physical Training from the Renaissance to the Enlightenment”, which is important because the foundations of current physical training and sport perceptions are based on this concept.

The Study: The aim of this study is, then, to throw sociological light on the extent to which, as well as the manner in which, the everyday 'philosophies' of PE teachers are underpinned by particular ideologies (e.g. 'health' and 'sports performance'); ideologies that are, in turn, a reflection of wider ideological, economic and cultural forces. Thus, the central object of the study is an attempt to identify and examine PE teachers' 'philosophies' in order to locate these within the broader social context in which PE teachers find themselves.

THE NATURE AND VALUES OF PHYSICAL EDUCATION

There has always been an air of suspicion about those who think philosophically about the nature and values of physical education. On the one hand, physical education teachers are apt to claim that theirs is essentially a practical vocation; a calling to the teaching of physical activities that can help students to live better lives. What need have they of a philosophy? On the other hand, philosophers of education, notably in the liberal-analytical tradition, have often sought to cast a dim light on physical education, thinking it valuable (on good days at least) – but not educationally so. I shall try in this chapter to say something about the nature and values of physical education; the knowledge and the values that are inherent within its activities and those external ones which can be gained from them. The chapter revolves around a critique of some recent theoretically sophisticated attempts to discuss the nature and educational status of physical education by three philosophers David Carr (1997), Jim Parry (1998) and Andrew Reid (1996a, 1996b, 1997). I try to show where their arguments are both helpful but ultimately inadequate for the task of illuminating what physical education ought properly to consist of and how it might better prove its educational status and value. In particular, I try to show how it is absolutely necessary to think philosophically about the nature and values of activities that are thought to constitute physical education.

On Analytical Philosophy Of Education And Physical Education

Before embarking on an account of the nature of physical education, and its knowledge and values claims, it is necessary to first take a short detour and second, offer an apology. First, it is necessary – if we are to have a reflective view of the philosophical terrain in which sense can be made of the concept of physical education – to understand a little of the nature of philosophical thinking. Second, the account here is itself situated within a particular tradition of thoughtThat same worthwhile knowledge was continuous with the various forms of knowledge that Hirst had delineated by his own set of epistemological criteria. The Petersian thesis was summarised thus:education' implies the transmission of what is worth-while to those who become committed to it;education' must involve knowledge and understanding and some kind of cognitive perspective, which are not inert; and 'education' at least rules out some procedures of transmission, on the grounds that they lack wittingness and voluntariness on the part of the learner. (Peters, 1966: 45)

The first two conditions have been referred to as the axiological and epistemological conditions by two other philosophers, Andrew Reid (1996a, 1996b, 1997) and David Carr (1997), both of whom have sought to conceptualise physical education in similar ways, but who have come to rather different conclusions about its educational potential. The third criterion refers to the processes by which such transmission was ethically acceptable. I will comment on the analytical and epistemological dimension of Carr's and Reid's articles and then examine the axiological dimension of Reid's work which is the bedrock of his justification for the educational status of physical education.

Axiology And Physical Education

What Reid attempts, more generously than other liberal philosophers of education, is to connect the ways in which different kinds of knowledge in physical education activities embody different kinds of value. He sets out a fuller list of the sources of value and attempts to relate physical education to them. In addition to arguments about the value of theoretical knowledge, he articulates the following range: intellectual, ethical, aesthetic, economic, hedonic and health. As we have seen, anyone attempting to argue for the educational value of physical education on the grounds that the playing of games conferred a wide-ranging cognitive perspective on the world would be barking up the wrong tree. The point remains, however, that despite these benefits, the value-arguments for physical education ought not to be erected on exactly the same grounds as other curriculum subjects that are palpably different in nature. This inspires Reid's search for a broader range of values.

Conclusion

Arguably, the data from the extensive literature and investigative surveys provide a distorted picture of school physical education in India. Without doubt, there are examples of positively implemented programmes and good practices in physical education in most, if not all, countries across the region. Furthermore, there is an array of individual and institutional endeavours to optimise the quality of physical education delivery and so enhance the experiences of children in schools. Equally there is evidence to generate continuing disquiet about the situation. It is clear that in too many schools in too many countries children are being denied the opportunities to experience quality physical education provision. The health and fitness benefits from being physical active are not as marked as observed with adults, but are favourable nonetheless. The current level of physical activity experienced by many children is, however, cause for concern and shows no signs of improving. Encouraging our school children to become more physically active, will promote potential health benefits during childhood, and may facilitate a positive attitude towards physical activity which will be sustained throughout adult life.

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Effectiveness of Boxing Performance Interrelation with Skill Related Physical Fitness Components

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Abstract
The intention of this study was Effectiveness of Boxing Performance Interrelation with Skill Related Physical Fitness Components. The 120male boxers were selected Inter- University and Junior Nationals represented in Andhra Pradeshon non-randomly by purposive sample was used. Karl Pearson coefficient of correlation was used to Analysis of the collected data on skill related Physical Fitness Components wereSpeed(0.492*), Complex reaction ability(0.539*), Explosive strength(0.462*),Muscular endurance(0.381*),Anaerobic fitness(0.379*), Agility (0.291*), Coordination (0.573*), Dynamic Balance(0.364*),Dynamic Flexibility (0.249*) and Cardiovascular endurance(0.299*) coefficient of correlation with Effectiveness of Boxing Performancehad been positively with significant level 0.05.Remaining skill related Physical Fitness Componentsdid not correlate on this current study.
Key words: Boxing, Performance, Fitness Components, Skill Related Fitness.

Introduction

Boxing is a combat sport dates back to the ancient Egypt civilizations and is likely one of the oldest martial arts in the historiography of combating (Jordan & Herrera, 2008). Boxers wear official gloves, engaged at equal weight category, fighting in a timed contest (3 rounds x 3 min) with one-minute interval between rounds (AIBA, 2017). At each round, judges evaluate scores of both boxers in accordance with the sum of clean punches directed the target area of the opponent with the knuckle part of the glove (Osman, 1993). Performing attacks and defenses using from variety of movements and positions that incorporate offensive and defensive actions as well as counter-attack movements necessitate a high extent of physical capacity (Davis, Wittekind, & Beneke, 2013; EL-Ashker, 2011).

The performance of players is influenced by many factors such as physical, physiological and psychological variables, technique, tactics, physique, body size, body composition and application of biomechanical principles (Ortega et al., 2008). No doubt the performance of player influenced by many factors but still Physical fitness components are the primary factors among these entire factors. Fitness is a condition in which an individual has sufficient energy to avoid fatigue and enjoy life. It is necessary for elderly people to maintain and improve their physical fitness in order to satisfy healthy, high quality of daily life (Tanaka et al., 2004).

Fitness is classified two types one is health related fitness and second is skill related fitness. Skill related physical fitness refers to an individual's athletic ability in sports such as tennis, cricket, kabaddi, volleyball etc. and encompasses skill-related attributes like dynamic balance, power, speed and agility; the health-related aspect is a measure of cardiovascular endurance, muscle strength, endurance and flexibility and body composition (Hopkins & Walker, 1988).The present study intention to skill related physical fitness components interrelation with effectiveness of boxing performance.

Methodology

Intention of the Study: This study had been decidedthe Effectiveness of Boxing Performance Interrelation with Skill Related Physical Fitness Components.

Selection of the Subjects:The 120 male boxers selected Inter- University and Junior Nationals represented in Andhra Pradeshon non-randomly by purposive sample was used.

Figure-I: Skill –Related Physical Fitness Components and Tests

S. No	Skill -RelatedPhysical Fitness Components	Test
1	Complex Reaction Ability	Nelson Reaction Test
2	Speed	30 Mts Run
3	Explosive Strength	Standing Broad Jump
4	Muscular Endurance	Pull Ups
5	Anaerobic Fitness	Margaria-Kalamen Test
6	Agility	Shuttle Run
7	Coordination	Baseball throw Test
8	Cardiovascular Endurance	Cooper 12mits Run/Walk
9	Dynamic Balance	Balance Test
10	Dynamic Flexibility	Flexibility Test
11	StaticBalance	Balance Test
12	Simple Reaction Ability	Nelson Reaction Test
13	Endurance	600 Yard Dash
14	Static Flexibility	Sit and Reach Test
15	Maximum Strength	1RM Test
16	Speed Endurance	300Mts Run
17	Aerobic Endurance	6Mints Walk Test

Collection of the Data and Tools

The data had been collected by administrating the standard procedures for taking Skill related physical fitness components as well as boxer's performance and tools had been used stopwatches, horizontal bar for pull ups, 400Mts marking track baseball and Flexible measuring tape for flexibility. The score recorded time in the nearest one tenth of the seconds and nearest centimeters.

Statistical Analysis and Discussions

In order to find out the interrelation of skill related physical fitness components with boxing performance with the Karl Pearson coefficient of correlation had been used and testing the Hypothesis the level of confidence is 0.05.

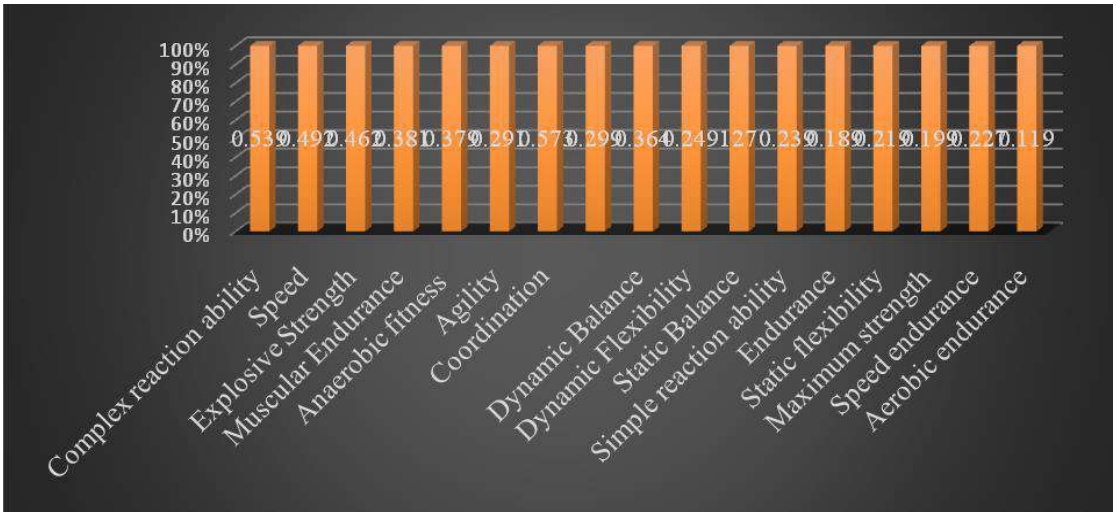
Figure-II:Skill related Physical Fitness Components Interrelation with Effectiveness of Boxing Performance

S. No	Skill RelatedPhysical Fitness Components	Coefficient of Correlation 'r'
1	Complex Reaction Ability	0.539*
2	Speed	0.492*
3	Explosive Strength	0.462*
4	Muscular Endurance	0.381*
5	Anaerobic Fitness	0.379*
6	Agility	0.291*
7	Coordination	0.573*
8	Cardiovascular Endurance	0.299*
9	Dynamic Balance	0.364*
10	Dynamic Flexibility	0.249*
11	StaticBalance	127
12	Simple Reaction Ability	0.239
13	Endurance	0.189
14	Static Flexibility	0.219
15	Maximum Strength	0.199
16	Speed Endurance	0.227
17	Aerobic Endurance	0.119

N=120, r.05 (150) =0.247, *Significant at 0.05 level.

An analysis and interpretation of the above table reveals that boxers had been significantly interrelation to skill related physical fitness components were Speed (0.492*), Complex reaction ability (0.539*), Explosive strength (0.462*),Muscular endurance (0.381*),Anaerobic fitness(0.379*), Agility (0.291*), Coordination (0.573*), Dynamic Balance(0.364*),Dynamic Flexibility (0.249*) and Cardiovascular endurance (0.299*) as obtained values of correlation were greater than the value of r= 0.247 the correlation to be significant at 0.05 skill related physical fitness components were Endurance, Maximum Strength, Static Flexibility, Simple reaction ability, Aerobic endurance, StaticBalanceand speed endurance as their correlation values are less than the value of r=0.247 need for significance at 0.05 level of confidence.

Figure-III:Skill relatedPhysical Fitness Components Interrelation with Effectiveness of Boxing Performance



As for the results finally, the study exposes that Boxing performance would be significantly interrelation toskill related physical fitness componentswere Speed (0.492*), Complex reaction ability (0.539*), Explosive strength (0.462*),Muscular endurance (0.381*),Anaerobic fitness(0.379*), Agility (0.291*), Coordination (0.573*), Dynamic Balance(0.364*),Dynamic Flexibility (0.249*) and Cardiovascular endurance (0.299*). As per the analysis, this study suggestion to the coaches, Physical Directors, Physical Education Teachers, Physical Instructors to focus on the above Skill related physical fitness components while selecting or screening for boxers in a basic level. It would be given effective and good performance in a particular competition.

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Effect Of Periodized High And Moderate High Intensity Aerobic Training On Fatigue Index Among Premier League Soccer Players In Sri Lanka

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Abstract:

Soccer players have to sprint frequently and run in a high intensity mode with smaller rest period to tolerate the match demand to succeed a game. The objective of this study was to find out the effect of Periodized High and Moderate intensity aerobic training on Fatigue Index (FI). To achieve the purpose forty five (N=45) soccer players were selected from University of Jaffna, Sri Lanka, and their age were ranged between 20 to 24 years (RHR 63± 3). The subjects were randomly divided in to three groups of fifteen each, group I underwent High Intensity Training [(HIT) (n=15, 50-60 min / day / three days / week over the period of twelve weeks)], group II underwent Moderate Intensity Training [(MHIT) (n=15, 50-60 min / day / three days / week over the period of twelve weeks)], and group III acted as control. Exercise intensity starts from 70 % and 80% of the maximum heart rate of the MHIT and HIT respectively. 2% rule was implemented in every two weeks. The Data were collected on Fatigue index by using sprint fatigue test before and after the intervention programme. Collected data were statistically analyzed by using dependent 't' test to find out the pre and post test different, and one way ANOVA, 0.05 level of confidence was fixed to test the significance. When the obtained 'F' ratio was significant, Scheffe's post hoc test was used to find out the paired mean difference. Results of this study reveal that, there was a significant (f=15.96) difference between pre and post test mean of two experimental groups due the high and moderate high intensity training. However high intensity training (t= 8.18*) shows better improvement than Moderate high intensity training (t=3.21*). And scheeff's post hoc result reveals that, there was significant mean difference between High intensity aerobic training and moderate high intensity aerobic training, and High intensity aerobic training and control. From the results it was concluded that, high intensity training is better than moderate high intensity training on fatigue index. Hence it was recommended that that, High intensity traditional based training is best to improve fatigue index to tolerate the extreme game demand during soccer match. Keywords: Aerobic, fatigue index, High Intensity Aerobic, Moderate High Intensity

Introduction

Soccer is beautiful complex game which leads the peoples to sit on the pin point throughout the match. The physical and physiological work rate in a soccer match is very high and needs subsequent changes in sprinting, jogging, high intensity running throughout the game. Intensity and demand during soccer match increasing due to the advancement of the prodigious sports training inventions. Acclimatize to the demand of the competitions needs training modifications to tolerate extreme pressure during the competition. In a match, 70% of the times the players are jog/ walk, but the match is decided/ tempered by balance 20% high intensity running and 10% sprinting. Hence, the beauty of the soccer match and high work rate demands are endured by high intensity running and sprinting. Majority of the research reveals that the high intensity aerobic training enriches the quality of the game and increases the chances of winning the game. Therefore, the aim of this study was to find out how players get benefited from this training and the amount of training load necessary to improve speed endurance.

Endurance refers to the capacity of retaining performance quality in particular duration. The performance of endurance attributes to the central nervous system function, maximum oxygen uptake and the body's energy reserves and utilization. In several ballgames, skills, Physiological and physical performance of an individual player are the most important factors that contribute to the competitive success of a whole team. Physiological and physical changes are take place according to the energy based training. In respect to the physical performance the endurance requirements of contact games seems to be rather similar (Hakkinen, 1989, Viitasalo et al., 1987).

During the soccer game aerobic energy system works majority of the time, but the increased tempo and the pressure tolerate by anaerobic energy system. In soccer game player who sprint, run jump faster with smaller recovery period often dominate the game. So the players need to prepare according to the nature and energy system of the game. To succeed in tactical game plan players need to improve fitness. Therefore the traditional training for aerobic and anaerobic energy system with intensity controlled based may lead to good physical preparation. Achieving the fitness goals through practicing traditional Aerobic training may solely develop the main objective of the training.

The fatigue index is a concept used in the study of the development of fatigue during anaerobic exercise. Anaerobic exercise uses glycogen rather than oxygen for fuel. The index number indicates the rate at which an athlete's power output declines. It can be used as an indicator of an athlete's aerobic endurance. The higher the fatigue index, the lower your ability to maintain power over a series of sprints. During intense exercise, muscle and blood lactate can rise to very high levels. Lactate accumulation causes an increased concentration of hydrogen ions and corresponding acidosis, a primary factor in muscle fatigue. Athletes with high fatigue index numbers should train to improve lactate tolerance in order to promote quicker recoveries from explosive bursts of speed and power. Lactate tolerance training usually starts midway through the pre-season, after an aerobic base has been built with continuous or interval training (Pavlović, Mihajlović, & Radulović, 2015). Anaerobic capacity is the maximum amount of adenosine triphosphate that can be resynthesized via anaerobic metabolism (both alactic and lactic systems) during maximal exercise (Minahan, Chia, & Inbar, 2007).

RESEARCH PROBLEM

Football is the definition of beauty. All over the world large numbers of peoples are watch, play and enjoy this game, because of the duration, fluidity and feasibility. Soccer game is decided and become highly tempered by frequent sprints and high intensity running. This type of physical exertion may fatigue the players and loose the pressure of the match. So adequate and appropriate training on physiological as well as physical variables may influence on soccer to become beautiful game. Fitness is important for all games especially football. In Sri Lanka, players are playing football as a game without appropriate training for fitness. According to FIFA standings, Sri Lankan football has been far behind compared to other Asian countries such as Maldives and Singapore. So prepare the players according to the demand of the match will be effectively produce globally challenging players. Therefore the present investigation intend to research on fatigue index among football players.

OBJECTIVES OF THE STUDY

The research question was raised on endurance which essential for soccer players that lacks in Sri Lankan footballers. The common myth of the new ideology is that the university players are less fit and they are unable to reach high intensity heart rate rapidly during soccer match. Therefore the objective of the present study was intent to find out the Effect of periodized high and moderate high intensity aerobic training on Fatigue index among university soccer players.

High Intensity Training*:* HIT is the concept where one performs a short burst of high-intensity (or max-intensity) exercise followed by a brief low-intensity activity, repeatedly, until too exhausted to continue. (**Wikipedia 2019**). HIT requires that you perform 20 minutes or more, depending on your sports, at an intensity level well above aerobic threshold and the intensity at 90-95 percentage and ending 100% MHR. (**Benson,R., and Connolly, D.2011**). ***Moderate high intensity training:*** MHIT means the work outs are practiced within the 75-85 percent maximum heart zone often called moderate high intensity training. Interval training is a type of physical training that involves bursts of high-intensity work interspersed with periods of low-intensity work. The high-intensity periods are typically at or close to anaerobic exercise, while the recovery periods may involve either complete rest or activity of lower intensity.

High intensity aerobic training is a form of cardiovascular exercise. Usual high intensity aerobic training sessions may vary from 9–20 minutes. These short, intense workouts provide improved athletic capacity and condition, improved glucose metabolism, and improved speed endurance.

The ***fatigue index*** is a measure of anaerobic capacity, or endurance. It is the rate at which power declines in each individual athlete; in other words, it signifies the rate at which tired the athletes when sprinting. The higher fatigue index leads the athletes to maintain power over a series of sprints. **(Livestrong.com.2019)** Hence the purpose of the study was to find out how the high and moderate high intensity aerobic training affect on fatigue index.

Methodology

To achieve the purpose forty five (N=45) soccer players were selected from University of Jaffna, Sri Lanka, and their age were ranged between 20 to 24 years (RHR 63± 3). The subjects were divided at random in to three groups of fifteen each, group I underwent High Intensity Training [(HIT) (n=15, 50-60 min / day / three days / week over the period of twelve weeks)], group II underwent Moderate Intensity Training [(MHIT) (n=15, 50-60 min / day / three days / week over the period of twelve weeks)], and group III acted as control. Exercise intensity starts from 70 % and 80% of the maximum heart rate of the MHIT and HIT respectively. 2% rule was implemented in every two weeks. The Data were collected on Fatigue index by using sprint fatigue test before and after the intervention programme. Collected data were statistically analyzed by using dependent 't' test to find out the pre and post test different, and one way ANOVA, 0.05 level of confidence was fixed to test the significance. When the obtained 'F' ratio was significant, Scheffe's post hoc test was used to find out the paired mean difference.

RESULTS

Table – I:COMPARISON OF PRE AND POST TEST ON FATIGUE INDEX OF HIGH AND MODERATE HIGH INTENSITY TRAINING AND CONTROL GROUPS

Group		**Mean**	**SD**	**SE**	**'t'**
Group I (HIT)	**Pre**	7.02	0.19	0.05	8.18*
	Post	6.33	0.25	0.06	
Group II (MHIT)	**Pre**	6.91	0.42	0.11	3.21*
	Post	6.77	0.30	0.08	
Group III Control	**Pre**	6.94	0.33	0.07	0.81
	Post	6.89	0.31	0.08	

*__Significant at .01 level of confidence. with df (1, 14) is 2.62__

Table II:ANALYSIS OF VARIANCE ON FATIGUE INDEX OF HIGH AND MODERATE HIGH INTENSITY TRAINING AND CONTROL GROUPS

	High Intensity training	**Moderate high Intensity training**	**Control Group**	**S o V**	**Sum of Squares**	**df**	**Mean squares**	**'F' ratio**
Post test Mean	6.33	6.77	6.89	B	2.65	2	1.33	15.96*
SD	0.25	0.30	0.31	W	3.49	42	0.08	

*table value at 0.01 level of confidence with (2,42) is 5.15

Table III : SCHEFFE'S POST HOG TEST ON FATIGUE INDEX AMONG HIGH AND MODERATE HIGH INTENSITY TRAINING AND CONTROL GROUPS

HIT	MHIT	Control	MD	CI
6.33	6.77		0.44*	0.32
	6.77	6.89	0.12	
6.33		6.89	0.56*	

*at 0.01 level

Table I shows that there was a significant difference between pre and post test mean of two experimental groups due the high and moderate intensity training. However high intensity training (t= 8.18*) shows better improvement than moderate high intensity training (t=3.21*). The table II shows there was a significant difference between groups on fatigue index (f=15.96*). Hence the scheeff's post hoc result reveals that, there was significant mean difference between High intensity training and moderate high intensity training, and High intensity training and control.

Discussion

High intensity running is mostly influence on soccer game and 20% of the total distance in a match covered by high intensity activity. So training for high intensity may contribute to enhance the ability to handle extreme game pressure. Trainers and coaches are straggling to achieve the training goals through the intensity based tactical preparation. So training in a traditional way of running with different proportion of intensity may contribute to succeed the training objectives. Currently, the maximum accumulated oxygen deficit (MAOD) is considered the gold standard to estimate anaerobic capacity. In addition to being sensitive to anaerobic training, MAOD is correlated with performance in high intensity efforts and it is used to validate other methods that evaluate anaerobic conditioning (**Pilianidis, Mantzouranis, Smirniotou, Zaggelidis, & Proios, 2016**).

The fatigue index is a concept used in the study of the development of fatigue during anaerobic exercise. Anaerobic exercise consists of fast twitch muscle fiber activities such as sprinting, running high intensities and lifting weights that are rely on glycogen rather than oxygen for fuel. The fatigue index can be measured with a series of low distance sprints. The results can help the football coach to areas which need to focus training.

Many athletes attribute their success to interval training. With the spacing of exercise and rest periods, a tremendous amount of work can be accomplished that would not normally be completed in a workout in which the exercise was performed continuously. Repeated exercise bouts can vary from a few seconds to several minutes or more depending on the desired outcome. The interval training prescription can be modified in terms of intensity and duration of the exercise interval, the length and type of relief interval, the number of work intervals and the number of repetition blocks or set per work out.

Jan Percival concluded that every individual has different level of fitness, which may change from time to time, it may also change from place to place and sometimes it may changes with work or situation also. Physical fitness variables are very important to soccer player and form a condition for higher performance. The physical fitness components like strength, speed, endurance, flexibility and the various coordinative abilities are essential for a high technique and tactical efficiency. Depending upon the demand of the game, each factor of physical fitness should be optimally developed. The present study reveals that there was a significant difference on fatigue index between the High intensity training group and control group, also high intensity training group and moderate high intensity training group due to the effect of twelve weeks of high and moderate high intensity training.

Conclusion

Hence it was concluded that High intensity training is essential to extend fatigue thereshold level as well as ability to tolerate high pressure in game situation.

Recommendation

Traditional High Intensity trainings have to include in training schedules to supports to the players to improve physiological status, ability to tolerate different positional demand and reduce fitness related injuries.

Implication

High intensity aerobic training may effective when it applied with game / sport oriented training. Further advance scientific research needed for this study.

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Using The New Technologies In The Physical Education Lessons

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Introduction

All the subjects of the Spanish Educative System have to contribute to develop the key competences. They were established by the European Union and we have the concretion of them in the Spanish executive order called LOMCE (2013). Between the key competences we can find the Basic Science and Technology competence and the Digital competence.Physical Education is an obligatory subject in the Spanish Education System in Primary and Secondary School. For this reason, it has to help to get the different competences. In this article we will explain how we are going to develop those competences from the Physical Education.

Using New Technologies In The Physical Educations Lessons

Firstly, we have to say that all students of our secondary school have a personal computer. Students use this at home and so in the class. The mobile phone is only permissible in the free time and when teachers decide that the students need it for doing activities.

Physical Education programme keeps in mind this situation and the possibilities of these technologies in the lessons. The main objectives to use the technologies in the PE is, besides to contribute to the key competence development, to motive the student to the physical activity and take advantage for the physical practice (don't lost time with theoretic explication).

Moodle

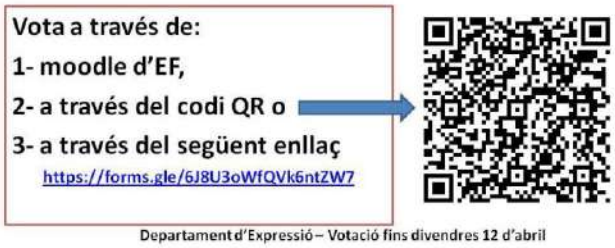
One of the most important technological software for using in the school is Moodle. Moodle is free code software that creates virtual teaching and learningenvironments. In this platform, the Physical Education teachers present the units, the rules of the subject, videos, theoretical lessons and so on. This platform affords us to use the flipped classroom methodology. Sometimes we put in the platform some videos or abilities or sports techniques and we invite to the students to see them. So, when the students arrive to the class they have some knowledge about these. Also, we use it for sending message to the students and for remembering or ordering tasks.

Google drive

Other application is Google drive. It's an accommodation files service. In this the teachers have some options for working: classroom, sites, photos, documents and so on. But one of the most used options, in our class, is *Google forms*. With this option we create some forms with different possibilities. For example: we have one form for writing the marks of the students in the test of physical condition. So, when the students finish the test, they fill yours marks in one form that they can find in the moodle; we also designed a form in order than the students can fill in with the research result about the traditional games. They have a lot possibilities.

Code QR

Code QR is a system for keeping the information. It uses a lot of small squares and you can read them with the camera of your mobile phone and with the specific application. We use it, for example, for choosing the best poster of the Athletics meeting. In this case, the students design a poster and we put them in the school advertisement table and in the website. Students, teachers, families... can choose their prefer poster. When you make the photo with the application to the code QR, it sends you to a form where you can choose the best drawing.



Other possibility is using them for an orientation race. When you arrive to the code QR, you read it with your mobile phone and it will open a site where you will find the next lean.

Kahoot

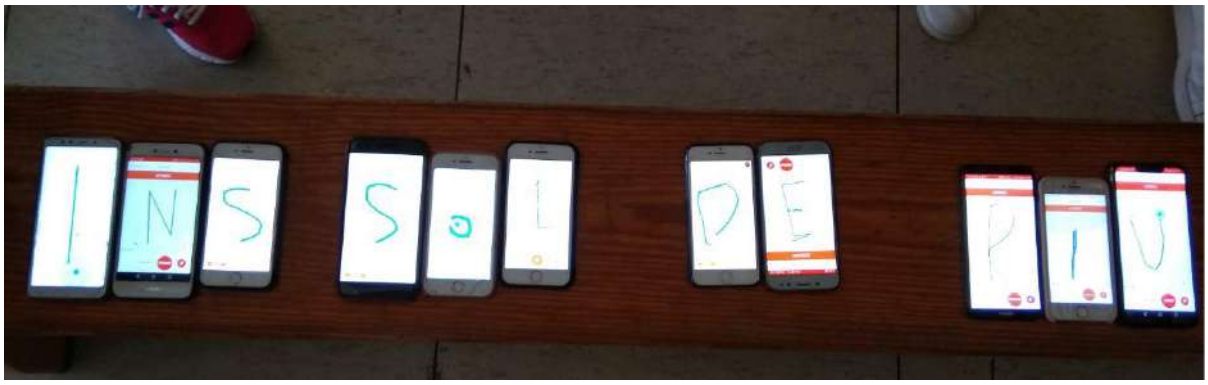
Kahoot is a free platform that the people use to build evaluation test. The special character of this is that you can fill the test as a game, contest or competition. But in our case, we use it for improving the theoretic knowledge about physical condition and, it make it specially, we use it for improving the endurance and the flexibility of our students. In this platform you can make some questions and you can choose the answer time. When we want to improve the anaerobic endurance we choose 2 min. We create a question that students have to resolve it in this time. For example: How many trees can we find in the school? How many torches can we find outside the main building? For answering, the students have to run quickly because they win points for getting right and for answering quickly. This is similar to an interval training but in this case, the students are playing in groups, improving their physical condition, their knowledge and enjoying a lot.

When the game is finished, we can find the results of the different group and you can export this to excel.

Strava

Strava is a mobile app and website. It connects different runners and cyclists and it has a free version. With this app, basically, you can run and it draws your itinerary, calculate your running rhythm, the velocity… and you can share this with your friends and other students. In our case, in the Physical Education lessons, we use this app for 2 things. The first is for motivate to the

students to run. We propose some activities as: Could you draw a triangle? Could you write the name of the school? Could you run to the marathon record rhythm? And the second is for evaluating the physical activity practice outside the school. For this, we created with the application a club called “Sòl-de-Riu”. The students go to this virtual club and when they go to run, they switch on the app and it registers this activity. This activity is shared with all members club. So, the teacher can look the outside activity of his students.



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Conclusion

New technologies are a great opportunity to motive to the secondary school students. In the Physical Education lessons, we can use them to motive to practice and to improve their physical condition, abilities and skills. Besides, we contribute to development some key competences as Basic Science and Technology competence and the digital competence.

Although they are a great opportunity, the new technologies also create some problems: not responsibility control use for the students; make different social class; steal and lost the mobile phone in the school; and so on. For this reason we have to teach to use them with responsibility and with respect.

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The Effects Of Coaches' Behaviors On Thesatisfaction And Burnout Of Athletes

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Abstract

This study aimed to find out the effects of the coaches' behaviors on the satisfaction and burnout among basketball athletes who competed in the 2018 Mindanao State University System Athletic Association (MSUSAA) Meet during the 2nd semester A.Y. 2017 – 2018 at MSU – General Santos City campus.The study was conducted among 42 basketball athletes from 7 competing teams, conveniently selected to assess their coaches' behaviors using the Leadership Scale for Sports or LSS by Chelladurai and Saleh (1980), which has five dimensions: Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback. TheAthlete Satisfaction Questionnaire or ASQ developed by Riemer and Chelladurai (1998) was used tomeasure athletes' satisfaction. The Athlete Burnout Questionnaire orABQ developed by Raedekeand Smith (2001) was used to measure burnout in terms of Emotional/Physical Exhaustion, Reduced Sense of Accomplishment, and Devaluation.Descriptive statistics was used in the form of frequency and percentage distribution while for the relationship between variables, Pearson *r* was employed. It was revealed that majority of the respondents perceived their coaches as "Very Good" in terms of training and instruction; majority rated their coaches as "Very Democratic" and most perceived them as "Moderately Autocratic." In addition, they were also perceived to have "Very Good" social support and positive feedback. In terms of athletes' satisfaction, majority were "Satisfied" and "Very Satisfied" while for the athletes' burnout, majority experienced "Low" and "Very Low" emotional/physical exhaustion, reduced sense of accomplishment, and devaluation.For the correlation of the variables, it was found out that only training and instruction had a significant relationship with athletes' satisfaction (p=.000). On the other hand, the coaches' behaviors do not affect the athletes' burnout.This illustrates that the coaches' behaviors aimed at improving the athletes' performance by emphasizing and facilitating hard and strenuous training,instructing them in the skills, techniques and tactics of the sport, and clarifying the relationshipamong the members can lead to athletes being satisfied with their sport and their teams.

Keywords: coaches' behaviors, satisfaction, burnout

Introduction

A leader is a person who significantly influences the thoughts, behaviors, and feelings of others. A coach as associated with a leader ensures that each athlete must attain team success by monitoring the team members' daily sport activities, motivation, and realization of goals. Team members need a leader who is confident, self-controlled, disciplined, trusting, credible, knowledgeable, decisive, understanding, and communicative. For most athletes involved, their coach is an influential element of the competitive experience. The Sport in America survey found that coaches are the leading positive influencers on today's youth. Across all major demographic groups, coaches rank as the number one positive influence on youth today (The Importance of Coaches and Coaching, n.d.).

Nazarudin et al. (2009) added that being a successful coach is an enormous challenge. Successful coaching is much more than just winning. Successful coaches help athletes master new skills, enjoy competing with others, and feel good. Successful coaches are not only well-versed in the skills of their sport: they also teach and model the skills needed for successful living in society.

Furthermore, coaching in sports requires more than simply bringing the balls in the playing field and letting players play. The most important role of a coach is to help athletes to improve their athletic ability in a wide range of tasks from sequential development and mastery of basic skills, to the more specialized physical, technical, tactical, and psychological preparations. Effective coaching behavior varies across specific contexts as the characteristics of athletes and the prescribed situation change. The context of the sport situation and characteristics of the coach and the athletes themselves dictate appropriate leadership behavior. To achieve improvement in athletic performance, it may be necessary for the coach to engage in coaching behaviors to which their athlete is receptive (Altahayneh, 2003).

According to Vealey et al. (1998), the coach-athlete relationship is an integral part of sport, and anecdotal evidence frommany athletes indicates that this relationship is essential to the ultimate quality and perceivedsuccess of their competitive sport careers. In terms of provider-recipient relationship in sports, coaches represent the providerand athletes represent the recipient. Coaches provide their athletes with feedback andreinforcement about performance that athletes use to correct, motivate, and reinforce skills andbehaviors. The dynamics of the sport domain encourage frequent andintense interactions between coaches and athletes.

According to Maday as cited by Sarani et al (2014), satisfaction is an integral part of sport participation and enjoyment. Without satisfaction,athletes would turn to other sources for potential success and enjoyment. The importance of satisfaction cannot be underestimated at any age. Chelladurai (1984) indicated that"the degree of satisfaction expressed by athletes in relation to their performance and that of theteam taps the degree to which performance reached or failed to reach expected levels." It was also suggested that the level of satisfaction an athlete maintained during sportinvolvement also played a role in perception of performance.

On the other hand, interactions with athletes are reported as onecontributor to coach burnout. Similarly, athletes have identifiedtheir interactions with coaches as one potential source of feelings of burnout (Altahayneh, 2003).

Burnout, according to Raedeke et al. as cited by Cox (2002), is “a withdrawal from sport noted by a reduced sense of accomplishment, devaluation/resentment of sport, and physical/psychologicalexhaustion.” Similarly, Pines and Aronson as presented by Altahayneh (2003) gave a broader definition of burnout. Theydescribed burnout as “a state of physical, emotional, and mental exhaustion caused by long-terminvolvement in situations that are emotionally demanding.” Physical exhaustion ischaracterized by low energy, chronic fatigue, weakness, and a wide variety of physical andpsychosomatic complaints. Emotional exhaustion involves feelings of helplessness, hopelessnessand entrapment. Finally, mental exhaustion refers to the development of negative attitudestowards one’s self, work and life itself.According to Fender as cited by Henschen (2001), individuals most prone to burnout are “those who work too hard, too long, too intensely and are extremely dedicated to what they are doing.” Considering the type of person susceptible to burnout, it is easy to understand why many athletes may be at risk.

In these regards, this study, conducted during the 2018 Mindanao State University System Athletic Association (MSUSAA) Meet held at the MSU – General Santos City campus, tried to find out the leadership behaviors of basketball coaches as perceived by their athletes and how these behaviors contribute to players’ satisfaction and burnout.

Research Design

The research method used in this study is descriptive-correlational in nature which aimed to determine the relationship between the perceived coaches’ behaviors to athletes’ satisfaction and burnout.

Scope of Research

This was a survey research to study the effects of the basketball coaches’ behaviors on the satisfaction and burnout of their athletes. This was conducted during the 2018 MSUSAA Meet held last April 25 – 29, 2018 in MSU – General Santos City campus.

Research Respondents

In this study,there were forty-two (42) chosen respondents, six (6) each from the seven (7) different competing campuses of the 2018 MSUSAA Meet. These respondents were athletes from the MSU – General Santos, MSU – IIT, MSU – Sulu, MSU – Tawi-tawi, MSU – Maguindanao, MSU – Maigo, and MSU – LNAC basketball teams.

Research Instruments

The Leadership Scale for Sports or LSS by Chelladuraiand Saleh (1980) was used to measure the coaches’ behaviors. The LSS consists of 40 items representing different aspects of leadership behavior. Theresponse for each item is on a 5-point Likert-type scale ranging from 1 (never) to 5 (always).The LSS measures five dimensions of coaching behaviors: training andinstruction, democratic behavior, autocratic behavior, socialsupport, and positive feedback.

The Athlete Satisfaction Questionnaire (ASQ) is a multidimensional scale developed by Riemer and Chelladurai (1998) tomeasure athlete satisfaction. The ASQ contains items grouped into subscales withrespondents using a 7-point Likert-type scale ranging from 1 (not satisfied at all) to 7 (extremelysatisfied).

The Athlete Burnout Questionnaire(ABQ) developed by Raedekeand Smith (2001) was used to measure athletes' burnout.The ABQ is a 15-item multidimensional questionnaire that measures components ofburnout in athletes: emotional/physical exhaustion, reduced sense of accomplishment, and devaluation. Each subscale consists of 5 items measured on a 5-point Likert-type scaleranging from 1 (almost never) to 5 (almost always).

Data Collection

The researcher collected the data in the following order:

Request-letters were sent to the coaches of the different basketball teams which took part in the 2018 MSUSAA Meet in MSU – General Santos City campus;Upon approval, research assistants were involved to distribute as well as retrieve the questionnaires from the basketball athletes;Data analysis followed after scoring and tallying the responses of the respondents.

Statistics Used in Data Analysis

The data were analysed by frequency and percentage distribution, while for the relationship between variables, Pearson Product Moment of Correlation or Pearson *r* was employed.

Research Results and Research Discussions

Table 1.1 Frequency and Percentage Distribution in terms of Training and Instruction (N=42)

Training and Instruction Score Range	Qualitative Description	Frequency (f)	Percentage (%)
12 – 22	Very Poor	2	4.8
23 – 33	Poor	1	2.4
34 – 44	Average	3	7.1
45 – 55	Good	13	31.0
56 – 66	Very Good	23	54.8
Total		42	100.0

Table 1.1 showed that majority (54.8%) of the respondents perceived their coaches to have a "Very Good" behavior in terms of training and instruction.

The result revealed that coaches were perceived by their athletes as "Very Good" in terms of Training and Instruction. These coaches were believed to have been able to explain very well the techniques and tactics of playing basketball, as well as pay special attention to correcting athletes' mistakes. The coaches point out each athlete's strengths and weaknesses and see to it that athletes work to their capacity.

Table 1.2 Frequency and Percentage Distribution in terms of Democratic Behavior (N=42)

Democratic Behavior Score Range	Qualitative Description	Frequency (f)	Percentage (%)
7 – 13	Very Poor	0	0
14 – 20	Poor	1	2.4
21 – 27	Average	2	4.8
28 – 34	Good	12	28.6
35 – 41	Very Good	27	64.3
Total		42	100.0

Table 1.2 showed that majority (64.3%) of the respondents perceived their coaches to have a “Very Good” democratic behavior.

The result in Table 1.2 showed that majority (64.3%) of the respondents perceived their coaches to be very democratic. This would mean that coaches ask for the opinion of the athletes on strategies for competitions, get group approval on important matters before going ahead, and let the athletes share in decision making.

Table 1.3 Frequency and Percentage Distribution in terms of Autocratic Behavior (N=42)

Autocratic Behavior Score Range	Qualitative Description	Frequency (f)	Percentage (%)
23 – 27	Very Autocratic	3	7.1
18 – 22	Autocratic	7	16.7
13 – 17	Moderately Autocratic	12	28.6
8 – 12	Very Slightly Autocratic	9	21.4
3 – 7	Not Autocratic	11	26.2
Total		42	100.0

Table 1.3 showed that most (28.6%) of the respondents perceived their coaches as displaying a “Moderately Autocratic” behavior.

It is revealed in Table 1.3 that most (28.6%) of the respondents perceived their coaches to be moderately autocratic. There may be a few times that coaches refuse to compromise on a point and may not be able to explain his actions to the athletes

Table 1.4 Frequency and Percentage Distribution in terms of Social Support (N=42)

Social Support Score Range	Qualitative Description	Frequency (f)	Percentage (%)
7 – 13	Very Poor	0	0
14 – 20	Poor	1	2.4
21 – 27	Average	5	11.9
28 – 34	Good	15	35.7
35 – 41	Very Good	21	50.0
Total		42	100.0

Table 1.4 showed that half (50.0%) of the respondents perceived their coaches to have a “Very Good” behavior in terms of social support.

In Table 1.4, it is shown that half of the respondents perceived their coaches to be “Very Good” in terms of Social Support. This would mean that these coaches help athletes with their personal problems, express any affection felt for the athletes, as well as encourage close and informal relations with athletes.

Table 1.5 Frequency and Percentage Distribution in terms of Positive Feedback (N=42)

Positive Feedback Score Range	Qualitative Description	Frequency (f)	Percentage (%)
3 – 7	Very Poor	0	0
8 – 12	Poor	0	0
13 – 17	Average	5	11.9
18 – 22	Good	16	38.1
23 – 27	Very Good	21	50.0
Total		42	100.0

Table 1.5 showed that half (50.00%) of the respondents perceived their coaches to have a "Very Good" display of positive feedback behavior.

In Table 1.5, it is shown that half of the respondents perceived their coaches to be "Very Good" in terms of Positive Feedback. This may be manifested when these coaches give credit when credit is due.

Table 2 Frequency and Percentage Distribution in terms of Athletes' Satisfaction (N=42)

Satisfaction Score Range	Qualitative Description	Frequency (f)	Percentage (%)
14 - 30	Very Dissatisfied	4	9.5
31 – 47	Dissatisfied	5	11.9
48 - 64	Moderately Satisfied	11	26.2
65 - 81	Satisfied	12	28.6
82 - 98	Very Satisfied	10	23.8
Total		42	100.0

Table 2 showed that most of the respondents were "Satisfied" and "VerySatisfied" (28.6% and 23.8%, respectively) with their coaches as well as with their sport and team.

The table revealed that most of the respondents were "Satisfied" and "Very Satisfied" with the training and instruction they received from their coaches. Aside from that, the respondents showed satisfaction with the improvement of their skill level and performance level as well as the degree to which they have reached their performance goals during the year.

Athlete satisfaction is a positive effect resulting from a complex evaluation of structure, processes, and outcome associated with the athletic experience. Satisfaction is "the difference between the perception of what the athletes received and what they want" (Chelladurai&Riemer,1997). Athlete satisfaction is derived from the physical, psychological, and environmental aspects that are associated with athletes. The level of satisfaction is an indicator of the athlete's feelings about the sport team environments (Chelladurai&Riemer, 1997).

Table 3 Frequency and Percentage Distribution in terms Emotional/Physical Exhaustion, Reduced Sense of Accomplishment, and Devaluation (N=42)

Score Range	Qualitative Description	Emotional/Physical Exhaustion		Reduced Sense of Accomplishment		Devaluation	
		f	%	f	%	f	%
5 – 8	Very Low	12	28.6	10	23.8	19	45.3
9 – 12	Low	13	31.0	20	47.6	18	42.8
13 - 16	Moderate	15	35.7	10	23.8	5	11.9
17 – 20	High	1	2.4	2	4.8	0	0
21- 25	Very High	1	2.4	0	0	0	0
Total		42	100.0	42	100.0	42	100.0

Table 3 showed that majority of the respondents experienced “Very Low” and “Low” burnout.

Table 3 revealed that majority of the respondents were not really emotionally and physically exhausted by the demandsof training and competition. Furthermore, it is revealed that these respondents were still accomplishing many worthwhile things in basketball and were still achieving much in sport, generally. Other than that, the respondents did not really show any loss of interest in basketball and sport in general.

This result negates the findings of Altahayneh (2003) that athletes have identifiedtheir interactions with coaches as one potential source of feelings of burnout.

Table 4 The Correlation Between Variables

Coaches’ Behavior	Satisfaction		Burnout	
	r-value	p-value	*r*-value	p-value
Training and Instruction	**.539 ****	.000	.046	.050
Democratic Behavior	.039	.808	.104	.514
Autocratic Behavior	.043	.787	.001	.995
Social Support	.198	.210	.264	.091
Positive Feedback	-.119	.454	.202	.200

It is revealed in Table 4 that only Training and Instruction had a significant relationship with athletes’ satisfaction as shown by p=.000. This illustrates that the coaches’ behaviours aimed at improving the athletes’ performance by emphasizing and facilitating hard and strenuous training, instructing them in the skills, techniques and tactics of the sport, and clarifying the relationship among the members can lead to athletes being satisfied with their sport and their teams. On the other hand, the coaches’ behaviours do not affect the athletes’ burnout.

Research Recommendations

Coaches can help their players improve their skills, perform to their best ability, develop strong character, and gain confidence. That is, they can maximize the positive value of sport, and they can enhance the intrinsic motivation to play sport. The intrinsic values of sport and the experience of mastery are more likely to generate fair play and good sportsmanship.

Thus, the following are the recommendations of this research:

Basketball coaches, specifically, and all other coaches, in general, of the Mindanao State University System (MSUS), should participate regularly in coaching trainings and accreditations to always update themselves with the current trends in coaching;

Further studies should be conducted with a larger population and involving coaches in other sports.

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An Introduction To Some Biomedical Indicators In Evaluating Performance Of road Bicycle Racing Male Athletes Aged 16-18 in Ho Chi Minh City

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Abstract
The article, employing research methods commonly used in sports, identified 07 biomedical indicators (05 aerobic indicators, 02 anaerobic indicators) including: VE: Pulmonary Ventilation During Exercise (liters/minute); VO2/HR: Oxygen - pulse indicator (ml/beat); VO2 max/kg (ml/ph/Kg): Relative oxygen consumption volume; % VO2max at anaerobic threshold; EE: Energy Efficiency (kcal/minute) and RPP: anaerobic capacity lactate (w/kg); RMP: anaerobic lactate (w/kg) to evaluate performance of 16-18-year-old male athletes in road bicycle racing (RBR) inHo Chi Minh City. Keywords: Biomedical indicators, training standards, road bicycle racing, male, athlete, Ho Chi Minh City.

1. Introduction

Training performance (TP) is a multi-element combination consisting of medicine – biology, psychology, technique – tactic, physical strength; which are directly enhanced by the long-term effects of training and competing volume and intensity (VI) as well as others supportive exogenous therapies. In modern sports, the TP evaluation of an athlete is significantly important in the long-term training process which need to carry out comprehensively on various forms, functions, psychology and sport abilities of each athlete. Accordingly, his coach receives scientific information necessary for developing a suitable training plan,thus, contributing to improving his performance. In order to evaluating TP accurately, comprehensively and scientifically; it is necessary to employ appropriate evaluating criteria. Therefore, defining the TP evaluating criteria has a critical role in determining TP of an athlete. With all the reasons mentioned, this paper namely “An introduction to some biomedical indicators in evaluating performance of road bicycle racing male athletes aged 16-18 in Ho Chi Minh City” has been conducted.

Research methods:

and foreign researchers. Documents review, interviews, biomedical examination, mathematical statistics.

Study object: 20 male athletes of road bicycle racing aged 16-18 in Ho Chi Minh City

2. Research findings and discussion

2.1 Identify biomedical indicators to evaluate performance of road bicycle racing male athletes aged 16 to 18 in Ho Chi Minh City

The procedure includes the following steps:

Step 1: Collect and record biomedical indicators which were used to evaluating the TP of Vietnamese and foreign road bicycle racing athletes, for instance: Christopher John Gore, PhD (2000), Viet Nam Cycling Union (1998), 鄭福進 (1998), Nguyen Ngoc Cu and colleagues (1998), Nguyen The Truyen (2001), Omri Inbar (1999), Bui Van Duc (2000), B Darmet – D Mellet (1998), Endra Wenzel – René Wenzel (2003), Edmund R. Burke, PhD/Mary M.Newsom, MLS, (2001) with statistical results in Table 1.

Table 1: Systematizing the biomedical indicators used to evaluateTPby some Vietnamese

Indicator \ Researcher		1	2	3	4	5	6	7	8	9	10	Percentage %
1	Heart rate (beats/minute)	X		X				X			X	40
2	% Maximum heart rate (%)									X		10
3	Cardiac functiontest (HW)								X			10
4	Blood pressure (mmHg)							X				10
5	Pulmonary Ventilation (litre/minute)	X						X			X	30
6	Breathsper minute (times/minute)							X				10
7	Respiratory quotient										X	10
8	Volume of air circulation (l/ph)							X				10
9	%VO2max at anaerobic threshold	X								X		20
10	Vital capacity (ml)			X	X			X				30
11	VO2max (ml/minute)	X	X	X	X			X	X	X	X	80
12	VO2max/weight(ml/ph/kg)		X		X			X				30
13	VCO2max (ml/minute)										X	10
14	RPP (w/kg)					X	X					20
15	RMP (w/kg)					X	X					20

Notes: (1) Christopher John Gore, PhD, (2) Viet Nam Cycling Union, (3) China, (4) Nguyen Ngoc Cu, (5) Nguyen The Truyen, (6) Omri Inbar, (7) Bui Van Đuc, (8) France, (9) Endra – Rene Wenzel, (10) Edmund R Burke – Mary M. Newsom.

Table 1 shows that researchers have used various indicators to evaluate TP of road bicycle racing cyclists and some of these indicators are inconsistent and not unified.

This study employs the TP evaluation indicators based on two principles:

The most commonly used indicators (over 50% researchers)

The less common yet appropriate indicators with road bicycle racing characteristics of the research objects and practical situation in Viet Nam.

Based on these principles, the following indicators have been selected: Blood pressure (mmHg); Heart rate (times/minute) (base, quiet, cardiac function test); Vital capacity (ml); Absolute VO2max (ml/ph); VO2max/kg (ml/ph/Kg); % VO2 max at anaerobic threshold; anaerobic capacity lactate (RPP); anaerobic lactate(RMP); Pulmonary ventilation (litre/minute); Oxygen-vascular index (systolic) (ml/beat); VCO2 (ml/ph); EE: energy efficiency (kcal/minute); respiratory quotient (R).

Step 2: Interview 11 experts, including 6 coaches, 2 referees, 2 managers in Ho Chi Minh City and other cities and provinces in Viet Nam, about the biomedical indicators summarized in Step 1. All interviewees agreed to choose 7 biomedical indicators as follows:

To evaluate the aerobic capacity: VE: Lung ventilation (litre/minute), VO2/HR (O2 pulse): Oxygen-vascular index (systolic) (ml/beat), VO2max/kg (ml/ph/Kg),% VO2max (% VO2max Values @ LT), EE: energy efficiency(kcal/minute).

To evaluate the anaerobic capacity: RPP: anaerobic capacity lactate (w / kg), RMP: anaerobic lactate (w/kg).

Step 3: Test the reliability and notifiability of the chosen indicators

Reliability testing:

The reliability test was not conducted on these biomedical indicators for their consistency andhaving measuredwith high reliability by modern and accurate devices.

Notifiability testing:

The notifiability of biomedical indicators is the accurate levelupon measuring each element to identify a certain specification (quality, capacity, particularity, etc.). To test the notifiability of research indicators, calculate the correlation between performance of these indicators and competition result rankings using the Spirmen formula. The results are presented in Table 2.

Table 2: Correlation between biomedical indicators to evaluate the TP of male road racing cyclists aged 16 to 18 and competition result ranking (n=20)

No.	Factor	Indicator	r	P
1	Physiological function	VE (l/minute)	0.93	<0.01
		VO2/HR (ml/md)	0.94	<0.01
		VO2max/kg (ml/ph/Kg)	0.98	<0.01
		% VO2max Values@LT	0.94	<0.01
		EE (kcal/minute)	0.92	<0.01
		RPP (w/kg)	0.96	<0.01
		RMP (w/kg)	0.94	<0.01

Table 2 shows that there is a strong correlation between 7 indicators and competition ranking ($r>0.7$ and $P<0.05$). These indicators have sufficiently reliability and notifiability to be chosen for evaluating research objects.

Step 4: Study the correlation between biomedical indicators used to evaluate the TP of male road racing cyclists aged 16 to 18. The results are showed in Table 3.

Table 3: Correlation between biomedical indicators to evaluate the TP of male road racing cyclists aged 16 to 18

	VE (l/ph)	VO2/HR (l/ld)	O2@LT: Ratio (%)	VO2max/kg (ml/ph/Kg)	EE: Energy efficiency (kcal/minute)	RPP (w/kg)	RMP (w/kg)
VE (l/minute)		0.79	0.82	0.67	0.85	0.76	0.73
VO2/HR (l/ld)			0.8	0.62	0.84	0.71	0.76
O2@LT: Ratio(%)				0.69	0.85	0.79	0.72
VO2max/kg (ml/ph/Kg)					0.65	0.83	0.64
EE: Energy efficiency (kcal/minute)						0.79	0.75
RPP (w/kg)							0.87
RMP (w/kg)							

Table 3 shows a strong correlation among 7 indicators r> 0.4238 and P< 0.05.

Using data from in-depth interviews, seminars, notifiability testing, and indicators correlation; we selected 7 biomedical indicators to evaluate the TP of male road racing cyclists aged 16 to 18 in Ho Chi Minh city, including:

Five indicators to evaluate aerobic capacity: VE: Lung ventilation (liters/minute), VO2/HR: Oxygen-vascular index (ml/beat), VO2max/kg (ml/ph/Kg): Relative volume of oxygen consumption, % VO2max at anaerobic threshold, EE: energy efficiency (kcal/minute).

Two indicators to evaluate anaerobic capacity: RPP: anaerobic capacity lactate (w/kg), RMP: anaerobic lactate (w/kg).

Regarding indicators to evaluate aerobic capacity:

Every living cell has a complex system of chemical reactions that generateand consume energy. In energy-generating reactions, participation level of oxygen and absorptionability of the human body depend on his respiratory system and circulatory system which are responsible for transporting oxygen from the outside air to the body. Accordingly, the research selects some aerobic capacity evaluation indicators related to the respiratory, circulatory and energy metabolism systems, including:

The respiratory system:

VE: Lung ventilation (l/minute) is the volume of air circulating through the lungs in one minute. The oxygen demand of an athlete is huge in practice and competition period, hence the respiratory system has a critical role. The higher the VE is, the higher the volume of oxygen circulating through the lungs will be, which enhances the absorption of O_2 and release of CO_2.

The circulatory system:

The oxygen vascular indicator (VO_2/HR) aims to assess the oxygen supply (mlO_2) by each systole (cardiac contract). The oxygen vascular indicatorassesses both the cardiovascular ability and the respiratory system in transferring oxygen. When oxygen is transferred into the lungs, it will be transported by the circulatory system to every cell involved in the oxidation process that provides energy for every human living activity. Accordingly, oxygen exchange in the lungs increases along with the cardiovascular activity,thus maximizingthe amount of vascular oxygen. The higher the VO_2/HR is, the more oxygen is carried to the blood each times the heart contracts. As a result, the tissue and cell organization are provided with more oxygen. An average person's cells and tissues can be provided up to 12ml oxygen by a beat (VO_2/HR max = 12ml/beat), however this number is much higher in an athlete. This choice of indicator coincides with Luu Quang Hiep – Pham Thi Uyen (2003): "One of the most important indicators of the TP is oxygen vascular index" (3, p. 424).

Energy conversion:

V02max/kg (ml/minute/kg): the maximum oxygen consumption index calculated by the body weight also called relative V02max. This is a long-time recognized and applied indicator in evaluating aerobic strength, because the process of supplying energy involved the degradation reactions of organic substances is often called aerobic reactions. The more oxygen is consumed, the more energy will be supplied to the body. Thus, it is necessary to use this indicator to evaluate the ability of road bicycle racing athletes.

V02max/kg depends on the oxygen transferring function of the respiratory system, cardiovascular and celloxygen absorbability.The oxygen absorbability of cell depends on training process. In case of high-level athletes, especially endurance sportathletes, V02max/kg can be up to over 80 ml/minute/kg while the number of V02max/kg in an average person is about 40 ml/minute/kg.The higher the volume of oxygen consumption is, the higher the capacity and potential of endurance sportathletes,likecyclists, will be. William D and colleagues (2000): "V02max/kg of male cyclists is 72 ml/minute/kg" (12, p.199).

%V02@LT (%):the ratio between oxygen consumption measured at the moment of anaerobic threshold and V02max. The value (%), high or low, depends on the time when the anaerobic threshold appears. The higher the V02@LT value is, the higher the potential to use energy from aerobic sourceswill be, which saves energy from the anaerobic sources. According to William D et al. (2000): "Athletes can take more energy from aerobic sources so anaerobic threshold appears later in comparison with ordinarypeople". High-qualified athletes often reach the anaerobic threshold later than low-level ones (12, p.123).

The success in bicycle races depends not only on V02max but also on % V02max at lactate anaerobic threshold which the cyclist can stands. Therefore, lactate anaerobic conversion is a common assessment for forecasting, monitoring and regulating the performance of cyclists. Several studies have presented many statisticalrecords about the correlation between individual achievement (time) and the threshold. As Christopher John Gore, PhD (2000) presented their predictions of Olds et al. (1995a, 1995b) on relationships between the training process and adjustment: "To improve 10% V02max at anaerobic threshold, an athlete has to decrease a certain amount oftimeequivalent towhat required to cyclea road section of 26km" (8. P.133).

High-qualified athletes always have broader anaerobic threshold which enables the athlete's ability to perform with higher intensity (cycling with a faster speed) and stronger (racing on mountainous areas, attacking, etc.). This also means that the ability to mobilize anaerobic energy is faster and higher. Therefore, the study chose V02@LT (5) as an assessing indicator.
EEmax (kcal/minute): the maximum energy consumption per minute. Potential of an athlete depends on the level of energy mobilization. High-qualified athletes can mobilize their energy better. The energy dissipation of a cyclist is calculated with many factors: cycling speed, slopping speed, racing distance, vehicle quality, wind speed and athlete's position. William et al. (2003) stated: "EE over 12.5 kcal/minute is the supplied energy for muscles to move at maximum intensity" (12, p.159).
Anaerobic index:
Characteristics of athletes' supplying energy process,presented in chapter 1, shows the importance of anaerobic capacity in cyclists' performance. Anaerobic assessment examinations are usually conducted on dynamometer bicycles with cyclist's maximumcapacity in durations ofeither 10 seconds, 30 seconds or maximum 60 seconds. The majority of coaches prefer to examine the peak power and anaerobic capacity by laboratory tests. "This test system is very diverse and was presented bya number of researchers namely Vandewalle et al(1987), Bouchard et al (1991)" (7, p 138), (Margaria, 1966; Di Prampero & Cerretelli, 1969; Thorstesson & Karlsson, 1976; Inbar – Or, 1977; Bar – Or & Inbar, 1978; Bar – Or, 1980 . . .). Today, the common anaerobic energy measurement is widely used in calculating the peak energy (Peak Power-PP). This method is conducted by calculating the peak energy generated in the first 2.5 to 5 seconds (anaerobic lactate) or the entire energy produced when cycling under the Wingate anaerobic test in 30 seconds (lactate anaerobic) (Wingate Annaerobic test – WanT) (Inbar & Bar – Or, 1977; Kurowski,1977; Bar – Or, 1983; Tharp, 1985 . . .). According to Omri Inbar (1999): "The energy active in that (5 seconds) depends mainly on adenosine triphosphate (ATP- creatine phosphate system or the ability of replenishing ATP immediately from muscle sources. Besides, this method can calculate the average energy level (Mean power – MP) conducted in 30 seconds or the whole process. The greatest operation in that period (30 seconds) mainly depends on the anaerobic glucose energy system"[5] [11]. Therefore, the study chose Wingate test to evaluate anaerobic capacity of the road racingcyclists with 2 indicators: RPP: anaerobic capacity lactate (w/kg), and RMP: anaerobic lactate (w/kg).

3. Conclusion:

The study has identified 7 biomedical indicators to evaluate the TP of male road racing cyclists aged 16-18 in Ho Chi Minh City. These indicators, with reliability and notifiability, include:
Five indicators to evaluate the aerobic capacity: VE: Lung ventilation (liters/minute), VO2/HR: Oxygen-vascular index (ml/beat), VO2max/kg (ml/ph/Kg): Relative volume of oxygen consumption, % VO2max at anaerobic threshold, EE: energy efficiency (kcal/minute).
and Two indicators to evaluate the anaerobic capacity: RPP: anaerobic capacity lactate (w/kg), RMP: anaerobic lactate (w/kg).

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Physical Growth Characteristics Of Ethnic Minority Students 11 -14 Years Old In Vietnam Midland, Northern And Mountainous areas

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Abstract
From 2017 to 2019, Bac Ninh University of Physical Education and Sports deployed the national science and technology topic: "Solutions researches and physical growth policies are performed to contribute and improve the quality of ethnic minorities human resources until 2030", code: CTDT.23.17 / 16-20. This was the topic of the Scientific Program: "Basic and urgent issues about ethnic minorities and policies in Vietnam until 2030, code: CTDT / 16-20.The researching results were surveyed based on a sample of 480 students (240 males and 240 females) of ethnic minorities (ethnic minorities) aged 11 to 14 in 06 provinces belong to Vietnam Midland, Northern and mountainous areas. According to 3 quota groups, tests (form, function and exercises), this survey took place in 11-12/2018. The researching results showed that the physical growth characteristics of ethnic minority students progressed to comply with the laws of natural biology, complete and grow along with the increase of age, these data were collected in thehigh dispersion samplein most of quotas (11/13 quota) except the standing and running heights 4x10m. Physical characteristics developed with ages and an irregular growth rate among ages, they were also different frommalesand females.For females, except their strength rapidly increased at the age of 12-14, all their other qualities increased slowly or steadily.For males, their strength rapidly increasedabove 12 years old and had the highest value addition at14 years old, the rest of remaining qualities increase at11-13 years old, after that, this increasing level decreased.*Key words:*ethnic minority, form, Vietnam Northern mountainous areas, exercise.

Introduction

Constitution was the quality of the human body, which manifested in moving activities. It was an approximately stable characteristic of the body's form and function, which established and developed due to innatehereditary and living conditions.The physical capacity was reflected by the body's physical, exercising and basic moving skills, adaptive capacity and functional status of internal organs. The process of physical growth took place according to specific biological laws, and at the same time, it was influenced by natural and social environmentfactors.

Physical preparation for employee was an education process and proper education that was together coordinated and implemented by the society and a lot of professions, in which the physical education and sports was an important part. Therefore, in order to help the process of effectively physical preparation, optimally growth level, it must be firstly conductedinvestigations of people's constitution and appreciated the physical growth through the periods of development. Basing on mastering physical growth characteristics, this topic conducted research to evaluate effects impacting the dominant factors to find the causes limiting the growing process. This was also the practical important basis to select, determine the solution to improve people's stature and strength.

With the above approaching opinion, beginning from the fact that there was not topic about the whole and deep research of ethnic minorities any, in this research topic, we conducted the physicalgrowthcharacteristics survey of ethnic minority students aged 11-14 inVietnam Midland, Northern and mountainous areas,which was also aimed to completeresearch results of the Vietnam ethnic minorities' constitutionreality, serve for Vietnam human resource growth strategy2020 approved in April 19, 2011 by was the Prime Minister.

Research Subject: Physical growth characteristics of ethnic minority students 11-14 years old

Survey Subject: 480 ethnic minority students (240 males /4years oldand 240 females/4 years old)11-14 years old belong to 6 provinces asSon La, Lai Chau, Lao Cai, Ha Giang, Thai Nguyen, Cao Bang. The process of survey took place from 11/2018 to 12/2018.

Research Method:

Age is determined by the method of calculating the decimal age.

Medical test includedAnthropometry - using Martin's method to measure height, weight, BMI; subclinical - tests of respiratory (vital capacity) and nerve function (simple response, complex response)

Pedagogy test reviewed the exercising factors through the test asPressing force with convenient hand, Lying on your back and bending knees to fold body, Starting run with 30m height, Flexing to foldbody, Running shuttles 4x10m, Long-jumping on the spot, Running 5 minutes with your own strength.

Evaluation of BMI according to FAO [5]:

BMI < 16 : underweight level III BMI = 25 - 29,99 : overweight level I

BMI = 16 - 16,99 : underweight level II BMI = 30 - 39,99 : overweight level II

BMI = 17 - 18,45 : underweight level I BMI > 40 : overweight level III

BMI = 18,5 - 24,99: normal

Evaluation Standards of BMI according to children's age(iFitness.vn):

Evaluation levelAge: 11 12 13 14

Underweight < 14.3 14.8 15.2 15.8

TB:It was corresponding to their age between underweight level and risk of obesity.

Risk of obesity 21.8 22.6 23.4

Obesity> 24.0 25.2 26.3 27.2

Research results and discussion

The formalgrowth characteristics survey of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas

Body form reflectednot only individual characteristics (genes), racial characteristics but also influenced by many factors such as nutrition, daily routine, exercise activity, natural environmentand the pathology status.Therefore, form standardswere considered as a mainstandard reflecting the level of physical growth and health. Test results were presented in Table 1.

Table 1. The formalgrowth characteristics survey of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas

Age	Quota	Male(n=60)		Growth/year	Female(n=60)		Growth/year
		$\bar{x}$	±б		$\bar{x}$	±б	
11	Height (cm)	135,75	8,07	4.07	137,90	7,97	3.69
	Weight (kg)	30,82	6,55	2.74	31,01	5,67	2.11
	BMI index (kg/m^2)	16,56	1,93	0.47	16,23	2,13	0.23
12	Height (cm)	141,70	8,62	5.95	143,67	7,89	5.77
	Weight (kg)	35,59	7,40	4.77	36,10	6,64	5.09
	BMI index (kg/m^2)	17,51	2,22	0.95	17,42	2,54	1.19
13	Height (cm)	147,09	9,56	5.39	148,98	6,52	5.31
	Weight (kg)	38,72	7,63	3.13	40,99	5,35	4.89
	BMI index (kg/m^2)	17,76	2,14	0.25	18,45	1,98	1.03
14	Height (cm)	154,07	7,83	6.98	150,41	5,90	1.43
	Weight (kg)	43,44	7,22	4.72	42,96	6,79	1.97
	BMI index (kg/m^2)	17,94	3,11	0.18	19,01	2,75	0.56

The results in Table 1 showed that the formal growth of ethnic minority students followed to the natural biological law.The completing and growing process took place at the same time with the increase of age, these data were collected in the sample with high dispersion age except the standing height. The less dispersed height had shown that this quotawas more dominated by the genetic gene (high genetic level).

The standing height growth varies between males and females. For both males and females, these numbers continued to rapidly increase at 13 years old, increased an average of 5cm per year; After13 years old, this growthof femaleswas more slowly (1.43cm / year), meanwhile the males continued to increase sharply and reached 6.98cm / year.The results showed thatbesides genetic and life environmental factors such as nutrition, psychology, exercises and sports activities, economic conditions and other natural conditions, the main factor to promote and regulate the physical growth characteristics of children this period wasthe changes of females' hormone changes in earlier adulthood period (puberty) and this process ended earlier than males.

In comparison with other studies in Vietnam, it showed that the anthropometric indicators of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas were lower or equivalent to the research results in the recent years and only higher before 2001, for example:

-The height of the research sample, the 11-year-old males reached 135.75 ± 8.07cm, compared with 2014 (plain area), it was 142.42 ± 6.89cm [2], it was 137.59 ± 7.39cm [1] in 2001, and it was 121.95 ± 5.53cm [6] in 1975 ; 11-year-old femalesreached 137.90 ± 7.97cm, compared with 2014 , it was 142.53 ± 12.54cm, it was 139.44 ± 7.32cm in 2001.

- The height of the research sample, the 14-year-old males reached 154.07± 7.83 cm, compared with 2014 (plain area), it was 162.95 ± 6.98cm, it was 155.67 ± 7.97cm in 2001, and it was 137.51 ± 8.05cm in 1975 ; 14-year-old females reached 155.37 ± 5.45cmcompared with 2014 , it was 151.28 ± 5.53cm in 2001, it was 138.95 ± 7.36cm in 1975.

Thus, compared with 2001, after 17 years, with the rapid growthof the economy and the whole society's attention, it was approvedthe ethnic policies; however, ethnic minority children in Vietnam Midland, Northern and mountainous areashad not kept pace with the form growth of nationwide children and were lower than the form growth of children in 2014.

Comparing with other studies in Asia and Europe before 2003 [3], it was also showed that that the anthropometric indicators of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areaswere lower now;For example: in Japan, 11-year-old males had 142.6cm height and females had 144.9cm height, 143.0cm and 143.2cm in Germany; At the age of 14, the males' standing heightwas 162.7, females was 155.3cm in Japan, 160.4cm and 159.5cm in Germany [3].

The weight was considered as an independent quotathat had growth characteristics likethe height.When evaluating in balanced growth of body's height by BMI, if we based on FAO evaluation standard [5], both males and females aged 11-12were underweight level I, it was on average at 13.14 years old. However, FAO standards usually only applied to adulthood. Based on the BMI evaluation standard by age (iFitness.vn), the young subjects in the survey were in normal, balancedgrowthbut in **approximation** to the thin level (underweight).

According to our research, the reality of ethnic minority children's height growth in Vietnam Midland, Northern and mountainous areas was also the worst compared to other areas in our country. This was an issue that needed more attention, especially the nutrition and daily routines.

The physiological function characteristics ofethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas

Physiological function was assessed by 3 quotas: vital capacity, single and complex response. Test results are presented in Table 2.

The table 2 showed thatthe physiological function growth ofethnic minority students aged 11-14followed to the natural biological law. The completing and growing process took place at the same time with the increase of age, the growth rate among ageswas unequal, these data were collected in the sample with high dispersion. This showed that living environment factors had differences from individuals.

Table 2. The physiological function characteristics ofethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas:

Age	Quota	Male (n=60)		Growth /year	female (6=60)		Growth /year
		x̄	±б		x̄	±б	
11	Vital Capacity (ml)	1768,44	416,67	179,62	1594,00	270,95	88,29
	Single response (ms)	420,91	148,79	+20,28	395,72	127,66	-43,97
	Complex response (ms)	620,21	206,95	-51,22	675,73	220,02	-19,93
12	Vital Capacity (ml)	1994,70	539,71	226,26	1737,45	475,59	143,45
	Single response (ms)	386,04	133,08	-34,87	381,43	131,13	-14,29
	Complex response (ms)	634,14	254,07	+13,93	611,47	209,02	-64,26
13	Vital Capacity (ml)	2182,28	523,07	187,58	1952,32	362,52	214,87
	Single response (ms)	359,03	163,49	-27,01	366,00	125,52	-15,43
	Complex response (ms)	579,04	225,24	-55,10	624,80	160,59	+13,33
14	Vital Capacity (ml)	2571,47	651,39	389,19	2061,51	454,25	109,19
	Single response (ms)	395,09	263,65	+0.06	348,68	129,40	-17,32
	Complex response (ms)	544,09	190,56	-34,95	629,27	180,68	+4,47

The growth of living capacity quotas occurred throughout the period, females aged 13 and males aged 14 were sharply increased. This was also the sensitive period (sensitivity) for the first endurancegrowth(anaerobic strength) [3].The added value of the responding speed index was not big, and there was an unclear increasing or decreasing trend at the age of 12-14.This result was consistent with the natural biology law because the characteristics of the nerve are highly conservative and dependent on individual characteristics (genetic gene). This was also the sensitive period to develop the speed of movement (7-12 years old) [3]. Compared with other studies, it showed that the indicators reflecting the nerve function of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas was equivalent.

5. The physical strength growth characteristics of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas.

Physical strength was assessed according to 7 tests that reflected the comprehensive characteristics as fastness, strength, flexibility, endurance and ability of coordinating movement. Test results were presented in Table 3.

Table 3. Physical strength growth characteristics of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas.

Age	Test	Male(n=20)		Growth /year	Female(n=20)		Growth/year
		x̄	±б		x̄	±б	
11	Pressing force with convenient hand (kg)	18,35	4,89	0,23	15,62	4,30	1,07
	Lying on your back and bending knees to fold body (times)	15,95	3,54	1,53	12,32	4,08	-0,68
	Starting run with 30m height (s)	5,81	0,52	-0,47	6,44	0,65	-0,04
	Flexing to fold body (cm)	6,86	4,53	2,36	7,14	4,30	0,36
	Running shuttles 4x10m(s)	11,59	0,74	-0,89	12,32	0,88	-0,26

	Long-jumping on the spot (cm)	157,02	19,42	9,80	140,69	17,21	-4,29
	Running 5 minutes with your own strength. (m)	816,04	157,26	130,15	758,09	143,46	72,20
12	Pressing force with convenient hand (kg)	18,82	5,96	0,47	19,76	5,36	4,14
	Lying on your back and bending knees to fold body (times)	15,57	4,33	-0,38	13,75	3,74	1,43
	Starting run with 30m height (s)	5,73	0,48	-0,08	6,05	0,57	-0,39
	Flexing to fold body (cm)	6,92	4,82	0,06	7,43	4,13	0,29
	Running shuttles 4x10m(s)	11,51	0,83	-0,08	12,02	0,82	-0,30
	Long-jumping on the spot (cm)	166,13	22,83	9,11	150,21	14,11	9,52
	Running 5 minutes with your own strength. (m)	798,50	149,94	-17,54	747,00	141,18	-11,09
13	Pressing force with convenient hand (kg)	23,30	6,50	4,48	22,38	5,17	2,62
	Lying on your back and bending knees to fold body (times)	16,48	4,68	0,81	14,69	3,91	0,94
	Starting run with 30m height (s)	5,43	0,51	-0,30	5,99	0,73	-0,06
	Flexing to fold body (cm)	7,47	4,48	0,55	9,83	3,97	2,40
	Running shuttles 4x10m(s)	11,52	1,57	+0,01	11,88	1,10	-0,14
	Long-jumping on the spot (cm)	182,10	24,55	15,80	158,57	20,03	8,36
	Running 5 minutes with your own strength. (m)	808,40	145,04	9,90	774,76	132,40	27,76
14	Pressing force with convenient hand (kg)	30,76	7,92	7,46	26,04	5,96	3,36
	Lying on your back and bending knees to fold body (times)	16,39	3,71	-0,09	14,27	4,00	-0,42
	Starting run with 30m height (s)	5,39	0,56	-0,04	5,91	0,75	-0,08
	Flexing to fold body (cm)	7,36	4,77	-0,11	9,39	4,86	0,44
	Running shuttles 4x10m(s)	11,12	0,88	-0,40	11,62	0,85	-0,26
	Long-jumping on the spot (cm)	189,02	25,33	6,92	162,06	18,82	3,49
	Running 5 minutes with your own strength. (m)	855,98	122,74	47,58	796,33	110,39	21,57

The results in Table 3 showed that physical strength factors grew with the age and that growth rate among the ages was unequal; there was a difference between males and females that the males were better than females in most of physical strength characteristics, except for the female's flexibility aged 11-14.This rule of physical strength growth maintained throughout the age of 11-14, which had demonstrated the impacted effect of the sex hormones and testosterone played a main role in the children body's overall growth, especially the musculoskeletal system. Themales' later stage of sexual growth has accelerated the process of physical strength growth, which was performed in the strength of the lower extremities (males did Long-jumping on the spot aged 11-12 that increased by 9cm / year, it increased the fastest in both males and females aged 13 with approximately 15.8 and 8.36cm, the

females was clearly decreased at age 14). The upper extremities' strength increased slowly at 11-12 years old but increased faster at the age ofover 13-14.Fastness and ability of coordinating movementincreased with a relatively stable level after11 years old. Endurance (anaerobic strength) in both males and females continued to increase at 11 years old, it was not really increasedat the age of 12-13 and increased slowly at age of 14.

This result was in accordance with the asynchronous growth rule;although the form increased rapidly,the functions of the respiratory system and especially the cardiovascular system did not keep up with this growth, as a result, this diminished the children's endurance.

In comparison with other studies, the physical strength characteristics of ethnic minority students aged 11-14 in Vietnam Midland, Northern and mountainous areas was equivalentand lower than those collected datain 2001 [1] and 2008 - 2011 [2].This result also showed that when economic and social conditions had changed, people's lives had been improved, and this helped to increase people's physical capacity, which had reflected a positive effect on the people's revolution of the Party and the State.However, after 10 years, the physical strength of ethnic minority students in Vietnam Midland, Northern and mountainous areas had not kept pace with the form growth of nationwide students in the period of 2001-2011.

4. In conclusion

1. The researching results showed that the physical growth characteristics of ethnic minority students progressed to comply with the laws of natural biology, complete and grow along with the increase of age, these data were collected in the high dispersion sample in most of quotas (11/13 quota)

2. The physical growth level of ethnic minority students aged 11–14 in Vietnam Midland, Northern and mountainous areas took place unequally among the ages (females grew the highest at the age of 12-13 and males grew the highest at the age of 13-14), there was a difference between males and females, in which the males manifested in most of indicatorsbetter than females, test, except for the females' flexibility, standing height and weight at 11–13 years old in females. After 10 years, the physical growth of ethnic minority students aged 11–14 had not kept pace with the growth of nationwide students.

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Youth Athletics Sport Training Projects' Of Southern Regional State, Ethiopia: An Insight Into Perceived Deterrent Factors And Good Practices

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Sport serves society by providing vivid Examples of Excellence
George F. Will

Abstract: The present study attempted to discover the deterrent factors and good practices that prevailed on the youth athletics sport-training projects' of Southern, Nations, Nationalities, and peoples regional [SNNPR] state, Ethiopia. The study was delimited into six youth training projects. To achieve the stated purpose, the researchers mainly used qualitative case study methodology, as the topic under the study focused on particular athletics sport training projects which were prior identified as one of the largest Athletes accommodating projects of the region. Among the trainee-athletes dispersed throughout these six projects, seventeen trainee-athletes (Male 9; Female 8) were purposefully selected by considering major attributes such as training age, athletics sub-disciplines, academic background, information rich cases, gender representation, and agreement of participation, while 3 male coaches took part in the study on availability basis. Thus, data were collected from a total of (N=20) informants through interview and observation in the training year 2018/19. The data secured through these techniques were categorized, and thematically analyzed to identify the major themes under the study as deterrent factors and good practices. The result of the study, therefore, revealed that the following major limitations as a deterrent factors': lack of coaching expertise at a grassroots level, lack of access to basic athletics equipment and training manual, lack of follow-up and support system from concerned bodies, lack of inclusive competition opportunities within the region, socio-cultural barriers, and lack of scientific talent identification programs. At the same time, specified strengths were identified as good practices: become a strong platform in youth athletics sport development, mushroomed the interest and participation of youths, fostered the formation of clubs and teams, bolstered school and community ties, narrowed the gaps of sport related sexual orientations, and promoted life skills of youths. Finally, the sport organizational structures from the bottom kebele to the top sport bureau of the regional level need to be promptly proactive in filling the gaps identified. Likewise, to capitalize and keep an eye on the good practices can assist in maintaining the projects strength as well as the experience gained out of this would foster a great deal, if shared among projects throughout the region, to develop youth athletics and sustain the country's athletics sport successes. **Key terms**: Athletics sport, Trainee-athletes, sport training Projects

Introduction:

The government of Ethiopia is giving due consideration for youth sport training schemes as the sector contributes a great deal for the ongoing developmental activities of the county. In conformity to this, among nine regions and two city administrations of the country that youth sport talent identification programs have undertaken, the Southern, Nations, Nationalities, and peoples regional [SNNPR] state was identified as the major hub of various sports in general, and that of athletics sport discipline in particular. Hence, starting 2003 the SNNPR state youth and sport bureau has been running athletics sport training for selected talented athletes in a close consideration of athletic sport sub-disciplines that the county has not been successful as well. To this end, to identify the hitherto strengths and shortcomings of these youth athletic sport projects is among the tools that regional sport bureau can make use of in order to monitor the effectiveness of the projects, and if any gaps, would help to devise ways for improvement. More emphatically, to maximize ways to expand athletics sport projects into other inaccessible areas of the region. It is therefore with this understanding that the regional sport bureau has taken this initiation to conduct this study.

Objectives

An athlete cannot run with money in his pockets .He must run with hope in his heart & dreams in his head -Emil Zatopek

This study is meant to get reliable and valid information that can aid for the improvement of SNNPR state athletics sport projects' in Ethiopia. More specifically, the study aimed:

To find out the deterrent factors, if any, in the athletics sport training projects' of SNNPR state

To identify the possible well-built sides in the athletics sport-training projects' of SNNPR state

To provide possible suggestions to curb the deficiencies that exists in the athletics sport training projects' of SNNPR state

Method and design

Set your goals high, and do not stop till you get there -Bo Jackson

Qualitative case study research design was employed in order to discover the deterrent factors and good practices, which prevailed on the athletics sport-training projects' of the SNNPR state, Ethiopia. The study was confined into six athletics sport projects of SNNPR state namely Hagere-selam, Arebegona, Morocho, Mesh, Sori, and Yam. These projects were selected, bearing in mind, both resources and consulting the regional sport bureau's list. Moreover, due to the need to make the sample more diverse by including informants from different projects, athletics sport sub-disciplines and areas of SNNPR state. In this regard, once the projects were identified, and obtained access, the total number of seventeen trainee-athletes (9 males and 8 females), were selected purposefully from six athletics sport-training projects' of SNNPR state. In the same vein , to consolidate the result obtained, three accessible male coaches' one from each Morocho, Mesh, and Arebegona athletics sport training projects have taken part in face-to-face interview. The researcher tried to put together informants from diverse background based on the following major attributes: training age, gender representation, academic background, representing various athletics sub-disciplines, agreements of participate, information rich cases such as representatives, group leaders, sub-discipline captains and others.

Interview was employed to describe the athletics sport-training projects' detailed phenomenon from deterring factors, and good practices perspectives. Hence, data were collected from February to April 2016 using face-to-face individual interview schedule from the respective athletic sport training projects.

The interview was also semi-structured, that is, a list of questions and issues related to the leading research questions was prepared prior to the interview. In fact, semi-structured in-depth interviewing gave room for probing for clarification and further discussion of important and relevant issues that arose during the Interview. Face–to-face interview also enabled the researcher to read non-verbal communication and reactions, which proved to be helpful in the analysis of data. The interview was jot down on notebook and soon after the interview ended, the researcher went through the report in order to make sure, if there were missed points, although being said in the interview session. Besides, the researcher allowed the participants in choosing an appropriate and conducive venue for interview and this created in turn an atmosphere in which the informants would feel comfortable enough to talk freely and openly. Accordingly, information from semi-structured interview was transcribed, and then key quotes were highlighted, coded, and sorted into deterrent factors and good practices themes. As far as ethical considerations is concerned, oral consent was secured from each study participant before the actual interview process begins. No data that makes the participants personality identifiable was excluded from being the part of the research to ensure the confidentiality and anonymity of the informants.

Gaps identified, Good practices and Action points

The will to win is important, but the will to prepare is vital - Joe Paterno

Gaps identified

Perceived deterrent factors that need scaling up:

Lack of coaching expertise at a grassroots level

Lack of access to basic athletics equipments & training manuals

Lack of follow-up & support system from sport governing bodies

Lack of inclusive competition opportunities within SNNPR state

Cultural and Social barriers

Lack of scientific talent identification programs

Good practices

Good practices regarded as a benchmark:

Becomes a strong platform in youth athletics sport developments

Mushroomed the interest and participation of youth athletics in their localities

Fostered the formation of clubs and teams in athletics sport discipline

Bolstered school and community ties

Narrowed the gaps of sport related sexual orientations , as an interest of girls participation

Promoted life skills of youths

Conclusion:

The regional youth & sport bureau should take the following action in order to achieve successfully the objectives for which these projects are organized. These are conducting coach training in various athletics-sub disciplines, amending the incentive packages of both coaches & athletes, organize task force that follows within intervals, & evaluate the training programs throughout the region, allocating budgets to provide locally improvised athletics equipment such as shot-put; javelin; discuss; jumping pit, first aid kit…etc. introduce computational opportunities solely organized for registered youth trainee-athletes, encouraging the participation of female trainee-athletes by allotting additional incentives, commencing kids athletics to keep the continuum, formulate a clear procedures of transfer to the next stage, and above all coaches at grassroots level required to have training on how to implement talent identification program beside the knowledge of athletics sport training. Accordingly, each athletics sport project in the region has its own best practices and limitations that all athletics sport projects can capitalize by sharing the good practices among themselves so as to assist the athletics sport disciple move a step forward and keep the achievement so far achieved in more athletics sub-disciplines and step-ups.

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On Analytical Philosophy Of Education And Physical Education

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Abstract

Before embarking on an account of the nature of physical education, and its knowledge and values claims, it is necessary to first take a short detour and second, offer an apology. First, it is necessary – if we are to have a reflective view of the philosophical terrain in which sense can be made of the concept of physical education – to understand a little of the nature of philosophical thinking. Second, the account here is itself situated within a particular tradition of thought. I do not speak of continental philosophy where there might be rich seams indeed for philosophers of physical education to plough. In particular, the work of phenomenologists and hermeneuticists3 have tremendous potential to offer understandings of our experiences in the activities that comprise physical education The particular picture of education favoured by analytical philosophers of education, then, is that of the British philosopher of education Richard Peters and, to a lesser extent, his close colleague Paul Hirst. I shall refer to their theses collectively as the Petersian conception of education.

Keywords: Philosophy, Epistemology, Physical education and Yoga.

Introduction

To say that Yoga and Indian Philosophy are related to each other is a gross oversimplified statement. In fact, the two are related to each in two ways. That is, (1) only a particular type of Indian philosophy can lead to Yoga and (2) Yoga can give rise only to a particular type of Indian philosophyAs we have noted in the Introduction, only those who are encountered with perennial pain and suffering are feel the necessity of philosophising. The kind of philosophical question they raise are interesting. For example, they ask (i) Are all people subject to misery? (ii) Do pain and misery come to an end at the point of our death? or do we have rebirth such that pain and suffering recur in some form or the other in the next birth also? (iii) Is it possible to overcome all misery and reach a state in which not only misery does not recur but also man finds himself in an eternal blissful state called, moksa (final liberation from all limitations)?

These questions have many philosophical implications. The first question presupposes the ubiquitous presence of misery, of which death is the most fearful form. As Dhammapada

says “Not in the sky, nor in the depths of ocean, nor having entered the caverns of mountain, nay, such a place is not to be found in the world, where a man might dwell without being overpowered by death”.1 If Buddha concluded from this, “Sarvam Duhkhamayam” (“All is full of misery”) it is only true, though a little exaggerated. Because by misery Buddha and other ancient Indian philosophers meant not merely death, but loss of property, loss of beauty, youth and health, inability to achieve desired result etc., which every man faces. There may be instances of happiness, but both their recurrence and duration are so negligibly small. In fact, the attempts to obtain them and their loss themselves are painful. So the ancient Indian philosophers, almost rightly, regarded misery as existential, such that human existence could not be easily extricated from misery.

EPISTEMOLOGICAL ASPECTS

One major strand in physical education teachers’ collective insecurity complex is to be found in epistemological aspects of their subject which, in the UK at least, has undergone significant professional changes. Central among those changes is the emergence of a graduate profession armed (supposedly) with a greater breadth and depth of theoretical knowledge. For my part, I harbour three suspicions about such claims.

Most men, who are afflicted with misery, are interested in eradicating it, but without asking philosophical questions. Philosophizing misery requires a philosophical bent of mind, which only a few have. So the subject’s own experience of pain and misery and philosophical bent ofmind are a necessary condition of philosophizing in ancient India.

The second philosophical question implies two possibilities. Assuming that misery is a necessary accompaniment of human existence, we can think of overcoming it in either of the two ways (i) If we believe that this life is the only life we have and that there is no rebirth, then the way of overcoming the misery is hedonistic, based on scientism. A Carvaka, for example, who does not believe in an eternal spiritual substance (atman) or God (paramatman), tries to meet misery by adopting hedonistic ways. Since there is no opportunity of being reborn either in this world or in the next, he must depend on science and technology for medicine, etc., in order to be happy till he dies. Since he is not afraid of God in whose existence he has no belief, he may indulge in immoral way without hesitation in order to enhance happiness and extend his life on earth, (ii) If, on the contrary, man believes in an eternal spiritual substance, he believes in karma and rebirth. Though the belief in karma and rebirth is a necessary condition for the practice of Yoga in the Indian context, it may not be so in a non-Indian context. For example, the Christians who do not believe in karma and rebirth can still practice Yoga and become good Christians in order to become eligible for salvation after death. In any case, it is believed by ancient Indian philosophers that belief in a chain of births and deaths in each of which man faces misery, is a good reason why Yoga must be practised and if man, like Carvaka, believed in only in this life, he would not resort to Yoga practice.

The third question presupposes two things, (i) It is possible to completely terminate the miseries; (ii) while termination of misery is a negative aspect, it is possible positively to enjoy bliss, which is qualitatively and quantitatively distinct from any pleasure we know of. In other words, by the regular practice of Yoga we can attain liberation - liberation for the soul from ignorance, karma, rebirth, selfishness and misery which derives from the complex of these.

Here some clarifications are needed. What is moksa? Is it the same as living in heaven (svarga)? Is it union with Brahman? Is it living in eternal companionship with God in his world? Is it simply realization that one's self is not prakjti or matter? Is it possible to attain moksa in an embodied state? Or, is it necessarily an after-death attainment?

All these sub- questions concerning moksa (liberation) presuppose that the soul, which was defiled in its worldly state, becomes pure in the liberated state and liberation is the necessary consequence of Yoga. Moksa is pursued not only as freedom from misery or as a state of blissfulness and peace, but as the highest value.

Here also, we can conclude that if man thought liberation or salvation were a myth or something which human beings can never attain, or if he thought that there are higher values than moksa, then he might not have attempted at its attainment. But since he believes in the possibility of attaining it as the highest value, he falls back upon Yoga.

Thus the three philosophical doctrines (i) that misery is inbuilt into human existence, (ii) that misery persists even in our next births and (iii) that misery can be successfully terminated by Yoga make us depend on Yoga for solution.

Axiology And Physical Education

What Reid attempts, more generously than other liberal philosophers of education, is to connect the ways in which different kinds of knowledge in physical education activities embody different kinds of value. He sets out a fuller list of the sources of value and attempts to relate physical education to them. In addition to arguments about the value of theoretical knowledge, he articulates the following range: intellectual, ethical, aesthetic, economic, hedonic and health. As we have seen, anyone attempting to argue for the educational value of physical education on the grounds that the playing of games conferred a wide-ranging cognitive perspective on the world would be barking up the wrong tree.The other, equally important side of the question is, How is Indian philosophy depended on Yoga? An answer to this question follows from a consideration of the question, What is Yoga?

Many modemers believe that Yoga means a set of asanas (physical postures) coupled with pranayama (regulated breathing). In a few cases Yoga is mistaken for meditation. Those who have studied Indian philosophy may mean by Yoga one of the six systems of Indian Philosophy. But, though Yoga is really each one of these in a restricted sense, it is something more.

The word "Yoga" can be broadly used in two senses, to mean either (i) an end (goal) or (ii) a conscious, long and strenuous effort leading to that goal. When used in the former sense, it refers to a supra-sensory and supraintellectual experience, which enhances one's knowledge of oneself and of the world. Such a state is called 'Yoga Samadhi', 'Yoga pratyaksa' 'Turiya' which are counterparts of the English 'mystic experience'. Used in the second sense, the word 'Yoga' applies to various means to the end, such as Bhakti-yoga, Karma-yoga, Patanjala-yoga, etc. This definition, therefore, is not restricted to any one form of Yoga,

because this state can well be the result of Bhakti-yoga, Karma-yoga, Jnana-Yoga, Raja-yoga, or any other form of Yoga.

While “turiya”, “Yoga-samadhi,” etc., are general terms applicable to all schools of Yoga, “Brahma-saksatkara”, “Sivanubhava” “Kaivalya”, etc., seem to be terms having specific connotations in addition to what the general terms connote. For example, when a Yogi disciplined in Advaita metaphysics of Sankara has such an experience he tries to interpret it in terms of Advaita. He would say, for example, that in the turiya state his soul coming out of all limitations merged in Brahman or became Brahman.

In any case, interpretations of the/tyriya state gives rise to philosophy. About the emergence of Indian Philosophy from mystic intuition Karel Werner has this to say:

According to Indian tradition, the ancient Vedic religion is not a product of the imagination of primitive minds reacting to natural phenomena by personifying, worshipping and dreading them, but on the contrary is the creation of exceptional individuals who had reached the fullness of mystical vision, which gave them an understanding of and insight into the problems of life and existence that may have amounted to the final knowledge of the truth itself.

The earliest and clearest expression of deep mystical form which takes the form of philosophy is found in the Upanisads. The philosophy of Upanisads, which belongs to the time prior to the creation of Philosophical systems, was not predominantly speculative, but was obviously inspired to a great degree by mystical experiences in which the Yogic approach played an important part. The importance the Upanisads attach to dhyana (contemplation) as a method of verification of the so called mahavakyas (maxims), such as “Aham brahmasmi”, “tat tvam asi”, etc. shows how dhyana can be yardstick ofmeasuring the philosophical truths.

PERSONS, PRACTICES AND PHYSICAL EDUCATION

Parry (1988) captured the bigger picture with respect to the nature and values of physical education when he urged upon the profession a fundamental re-examination of the central concepts education, culture and personhood.

While ‘original philosophy’ depends on the supra-intellectual perception of reality (such as Brahman or Atamn, or “Sunya” as the Madhyamika Buddhists preferred to call it), the philosophical systems such as Vedanta, for example, were the products of speculation. What Buddha perceived in his mystical state he conveyed to his disciples - perhaps in unclear terms and several schools of Buddhism sprang up, each claiming to be in possession of key to interpretation of his philosophy. His refusal to discuss metaphysical issues might also have added to our being in dark about the original meaning of what he said. Similarly, the original Vedanta (which is a synonym of “Upanisads”) was compressed into the aphorisms called “Vedanta-sutras” or “Brahma-sutras” by Badarayana. We are not sure whether Badarayana was himself a mystic, but he is believed to have made the first attempt at culling out a systematic philosophy from the Upanisads.

In fact all sutras, such as Nyaya-sutras, Vaisesika-sutras, etc., are believed to be systematic presentation of the various mystic intuitions. But the Vedanta systems, such as Advaita, ViSlstadvaita, etc., are clearly speculative in nature. Their attempt is, on the one hand, to show that their own interpretation or commentary (bhasya) on the “Brahma-sutras” is the most correct one, and on the other, to show, though indirectly, their own metaphysics (for example, Advaita) is what the Upanisads, and the Brahmasutras teach. As a result of these varied commentaries on the sutras of different schools, there spring a variety of philosophical schools, upholding their own metaphysics, their own epistemology, their own logic and their own axiology. Occasionally, philosophy oflanguage has sprung out of this speculation. In addition to these commentaries, elaboration (vjttis), and tikas (criticism) also help develop philosophy. It is believed that the six systems of Hindu Philosophy sprang up simultaneously and as a result, by mutual criticism, Indian Philosophy was able to develop both in width and depth. As earlier, here also we can note that the philosophy that has sprung from Yoga is of a particular type. It is chiefly metaphysics - especially metaphysics that takes into consideration the reality as a whole. The reality is Brahman which is the essence of the world or an identity of the Atman and Brahman, or Prakrti and Purusa, or God whose body the world is, are some which are claimed to be the contents of the mystical vision. In order justify their method of interpretation of the mystic utterances, each school develops its own epistemology, logic, etc. Thus it can be said that while development of metaphysics is the main product of mystic intuition, development of logic, epistemology and other branches of philosophy is the by-product. We cannot fail to note in this context that the type of philosophy which gives rise to Yoga is not the same as the type of philosophy, which springs from Yoga, though both of them are termed “Indian philosophy”.

Conclusion

Historically, there have been two strands in what is called physical education: sports and health (or in older times hygiene, posture, and so forth). It seems clear to me that a different type of justificatory argument is required to support each. Maybe Carr is right here to classify the latter activities (along with life saving and other ‘anomalies’ that fall to the task of physical educators) as valuable but not educationally valuable because of their lacking in what can be referred to as cultural significance or cultural capital. Time and space do not allow me to comment in any way here upon these other strands except to note the following. Those who look for conceptual unity are simply wasting their time. There is no meaningful essence to the concept in that way. As Reid remarks, one must look rather to culture-specific, historical and political factors that have shaped the professions. Dance is a cultural practice that employs large motor-skilled activity like tennis or football. Some forms of gymnastics require interpretative movements and proceed with music like dance. Sculpting bodies, like training for rugby or netball, often requires the kinds of regimes and exercises that are common. But these similarities are nothing more than that. If all that one can do is to point out commonalities then there is little that is philosophically interesting here for anyone attempting a conceptual analysis by necessary and sufficient conditions of linguistic usage.

Reid's peroration towards value pluralism should extend so far as to recognise the inherent openness of the concept of physical education: pluralism in activities; pluralism in values. No universal criterion of demarcation can be raised that will help physical educators to select activities is available, and so we should simply stop looking. Instead we should enquire as to the types and natures of rituals that sports instantiate in our modern world. And if, as Wollheim argues, traditions pass on what they possess, then we should see to it, as guardians of these great cultural rituals, that the values physical education has and gives are kept in good health

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ANALYSIS OF HEALTH RELATED PHYSICAL FITNESS AMONG MALE ELECTIVE FOOTBALL AND VOLLEYBALL 3rd YEAR SPORT SCIENCE STUDENTS AT UNIVERSITY OF GONDAR

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Abstract
The purpose of this study was to compare the health related physical fitness level among elective football and volleyball 3rd year sport sciences male students at university of Gondar. The total numbers of subjects were 22 male students. Among this 12 of the study subject were from elective football and the remaining 10 students from elective volleyball. The study subjects were selected by using purposive sampling methods followed by purposive comprehensive methods. For this study post test only design is carried out to find the difference between elective football and elective volleyball students of 2018-2019 academic years. The data is coded and accurately entered and analyzed using SPSS version 20. Descriptive data was expressed using mean and standard deviation to determine the average performance of the subject and also independent T test used to find difference in the selected variables between elective football and volleyball students. The result of the study show that even if the descriptive statics shows little difference among elective football & volleyball students but there is no significance difference statistically by using independent T test.
Keywords: health related fitness, elective volleyball, and elective football.

Background of the Study

Football and volleyball were the most popular sport in the world. because it is performed by men and women, children and adults with different levels of expertise. The popularity of the game were reflected in the millions who participate in volleyball and football in lower levels of play. According to Singh, & Singh (2015) football is now being played in more than 210 countries throughout the world. In our country Ethiopia football and volleyball were also most popular sport, played in every corners of the country.

Every form of sport including football and volleyball requires a certain amount of fitness, skill level, physique, body competitions, etc. In sports competitions, sportspersons are directly involved physically and psychologically (Zhang, 2010).

Physical fitness makes you feel mentally sharper, physically comfortable, and more with your body and better able to cope with the demands that every day life makes upon you (Sharma, 2015). Physical fitness is an essential first and foremost criterion in every game. Without having physical fitness no one can elicit his amble performance level. According to Leetun, at.el. (2004) Physical fitness plays a very important role in an normal individual as well as in an individual who is there participating in some kind of sports events.

Volleyball and football players require well-developed muscular strength, power and endurance, speed, agility, and flexibility, and have a high level of jumping ability, fast reaction time and swift movements (Zhang, 2010). With this in mind the fitness of students typically increasing as the future professional coaching or playing standard is raised. Despite concern about the fact that the selected components of health related physical fitness are an essential key for successful participation in sport activity.

Elective coaching is used to cover a wide range of physical and mental activities, usually to help someone prepare for something. Coaching has been described as the organized provision of assistance to an individual athlete or group of athletes in order to help them develop and improve their quality of wellbeing. Elective coaching is a process of achieving or certifying students in their interests of field. It is a very important course to fill the skill and knowledge gabs of the students in theoretical or practical. Therefore, to find out the difference in selected components of health related physical fitness among elective volleyball and football students.

Statement of the Problem

The purpose of the study is comparing the health related physical fitness variable such as endurance, strength, flexibility, body composition and cardiovascular endurance among University of Gondar elective football and volleyball 3rd year male sport science students.

To become a strong and competent students to the region and to the country as well as to the future as a coach follows different scientific and systematic training methods and identifies the weakens of the components of health related physical fitness and to improve the overall ability of the elective students the researcher find out the difference between the physical fitness of elective football and volleyball male students. Furthermore, the researchers concern to fill the gabs by identifying the drawback and strong side of the students in both elective courses. On the other hand on this new and important course there is no any reference book even journals and articles that's why the researchers searching entitled on "Analysis Of Health Related Physical Fitness Among Male Elective Football And Volleyball 3rd Year Sport Science Students.

Operational definition

Elective football coaching:

it provides an essential football coaching techniques, skill and methods.

Elective volleyball coaching:

it provides basic information about, practice sessions, technical skills of volleyball

Rational of the study

Physical fitness is identified as one of the determinant factor responsible for Excellence in various sports. Students in different sport discipline require not always mental, emotional and psychological or social maturity in addition physical fitness is the basic element. So, players, students and sport science teachers were understand the facts and important of physical fitness in order to achieve any desired work.

Materials and methods

The study was conducted in north Gondar Zone search in university of Gondar, Ethiopia, with selected elective sport science students. The target population of the study was male elective football and volleyball students' age above 18, who participated in elective coaching courses. The number of male students registered in 2018/19 taking the course was 22 students (12 elective football and 10 elective volleyball). The department of sport science in 2018/19 has had delivered 4 elective courses to improve the quality and level of students in different discipline like Elective football, elective volleyball, elective athletics and elective fitness. For the study two disciplines was selected purposively. in addition, the researcher selected 12 male elective footballs and 10 male elective volleyball taken as a study subjects who is participated and take the course of the two disciplines at university of Gondar in the department of sport science by using purposive comprehensive methods. Because the number of students in each discipline was small and to provide the true measure of the students.

For the study post test only design was carried out to find out the difference between Elective football and elective volleyball students of 2018- 2019 academic year

Measurement procedure

Strength (Explosive leg strength)

To assess legs explosive power of the subject standing broad jump test were administered. The subject is asked to stand behind the starting line with the feet parallel to each other. the students instructed to jump as fastest as possible by bending knees and swinging arms to take off for the broad jump in the forward direction. The subject was given three trials. The distance between the starting line and the nearest point of landing provides the score of the test. The best trials is be used as the final score of the test.

Cardiovascular endurance (12 minute run test)

12 min run- walk test was conducted on 400 meter track at Fasile stadium. They were instructed to run continuously for 12 minute and if they /feel tired they walk instead. score was assigned to each of the runners to keep record of the number of laps completed and the part of a lap run within stipulated period. The subject started running at the sound of the clapper by starter by a time keeper. After 12 min a long whistle was blown and all the subjects were stopping running.

Flexibility (sit and Reach test)

Flexibility is measured with the help of sit and reach box. Asked the student to remove their shoes and sitting on the floor with legs extended ahead with shoulder width apart. The feet will place with the soles flat against the box. Both knees are held flat against the floor by the tester. The hands extended forward with the hands placed on top of each other and palms facing down.

The subject reaches forward directly along the measuring line as far as possible. After three practice reaches, the fourth reach is held for at least two seconds while the distance is recorded. The score of the player was from the three trials and the best lean forward was considered as score to the nearest centimetre.

Body composition (BMI)

The heights were measured while standing erect looking straight ahead and bare footed against the wall. The vertical down word plastic stature meter were used on the head of each subject against the instrument. Their heights were read off the instrument to the nearest 0.0 1mm.and the weight measured by weighting machine in kg.

Endurance (sit up in number)

The endurance were measured by sit up so by being in supine position and both leg bend all the students try the maximum level of their performing sit up in number.

Data is coded and accurately entered and analyzed using SPSS version 20.0 (Statistical Package for the Social Sciences). Descriptive data were expressed using mean and standard deviation (SD) to determine the average performance of the subjects. T-test (independent T-test) is used to find the difference in the selected variables between elective football and elective volleyball students. In any case the decision to reject or retain the hypothesis was set at 0.05 level of significant.

Result

Table 1, Descriptive Statistic of Elective Football &Volleyball Students (22)

S.N	Variables	Group	Mean	Std. Deviation	Mean difference
1	Standing Broad Jump	Volleyball	3.10	0.40	0.23
		Football	2.87	0.53	
2	Sit-ups	Volleyball	20.90	11.47	-2.4
		Football	23.33	11.60	
3	Sit & Reach	Volleyball	8.40	7.47	-3.3
		Football	11.75	8.64	
4	12 Min run	Volleyball	2108.00	103.37	-28.7
		Football	2136.67	137.99	
5	BMI	Volleyball	19.27	1.62	0.44
		Football	18.83	1.49	

The details of the above table showed that mean score, standard deviation and mean difference of selected health related variables of elective volleyball and football students.

There for with regards to the score such as the mean value for standing broad jump for football elective students and elective volleyball students were 2.87 and 3.10 meter respectively with a difference of 0.23 meter. This signifying that volleyball elective students were reported a little improvement on explosive strength than football elective student.

The mean value for sit up test for football elective students and elective football students were 23.3 and 20.9 count in number respectively with a difference of 2.4 count, the result found that football elective students were reported little improvement on muscular endurance than volleyball elective student. This means football students was found to get a little bit more sit up as compare than volleyball students, which implies volleyball students incur significantly less abdominal strength endurance as compare than their counterparts.

With regards to sit and reach test in football elective students and elective volleyball students they have a mean values were 11.7 and 8.4 centimeter respectively with a difference of 3.3 centimeter. This means that football elective students were reported more flexible than volleyball elective student. The result was found elective volleyball get less in sit & reach as compare with elective football students, which means that elective football students acquire significantly more flexibility as compare than elective volleyball.

The mean value for 12 minute run for football elective students and elective volleyball students were 2136.7 meter and 2108 meter respectively with a difference of 28.7 meter, this implies that football elective students were reported strong cardiac muscle or cardiovascular endurance than volleyball elective student. The result reveals that there was difference found between volleyball and football students. Elective football students were found to get more aerobic fitness as compared with volleyball students.

The mean values of Body Mass Index for elective football students depicts 18.83 and elective volleyball 19.27 with a mean difference of 0.44. It shows that foot ball elective students and elective volleyball students of BMI found in a normal range.

Result of Independent Sample T Test

Even if the descriptive statist shows little difference among elective football and elective volleyball male students but there is not significance difference statistically by using independent T –test. This is because of the intensity and duration of exercise given both elective students were the same or their ability to perform different physical fitness tests all most the same as shown in table 2.

Table 2. Independent T test result

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	T	df	P- value	Mean Difference
standing broad jump	Equal variances assumed	1.474	.239	1.151	20	.263	.23483
	Equal variances not assumed			1.181	19.883	.252	.23483
sit up	Equal variances assumed	1.421	.247	-.492	20	.628	-2.43333
	Equal variances not assumed			-.493	19.367	.628	-2.43333
sit & reach	Equal variances assumed	.117	.736	-.961	20	.348	-3.35000
	Equal variances not assumed			-.974	19.955	.342	-3.35000
12 min run	Equal variances assumed	1.362	.257	-.542	20	.594	-28.66667
	Equal variances not assumed			-.556	19.818	.584	-28.66667
BMI	Equal variances assumed	.002	.968	.656	20	.519	.43667
	Equal variances not assumed			.651	18.641	.523	.43667

Discussion

The finding of this study shown that elective football and volleyball student had almost the same health related physical fitness level that means in all levels of selected health related fitness variables like standing broad jump, sit up, sit and reach, 12 minute run and BMI found almost the same result or no significant difference statistically. This result is agreeing with a study conducted in Indian on football and volleyball players who showed that there was no significant difference in sit ups (Kohli & Singh, 2014).

On the other study conducted by Roshan Lal Sharma (2017) on compared the physical fitness of football and volleyball male players from Jammu District of Jammu and Kashmir. The study result showed that similar result with the present study like insignificant difference found between the selected physical fitness variables of flexibility and disagreeing with the current research on endurance that shows significant differences found in the variable between basketball and volleyball players.

Conclusions

Based on the results the following conclusions were drawn: There is no statistically significant difference found in the Standing Broad Jump, a test of explosive strength in relation to the elective football and volleyball male students. There is no significant difference found in the sit up ability tested. All most both groups had the same statuses. Insignificant difference was found in the Sit and reach Test. the same level of imprudent was found in both groups. Insignificant difference was found in the 12 Minute run tests. A test to measure cardio muscular endurance in relation to the elective football and volleyball male students.

Recommendations

The following recommendations were made: It is recommended that the training program for elective football and volleyball players should be different as per their respective needs and requirements of the games. There for teachers or instructors should give different types of training for both elective groups for their future professional development. The similar nature of studies should be searched on elective female students or counter part of male elective volleyball and football students.

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Effects of Yogasana-Pranayama Practice on Blood Pressure and Resting Heart Rate in Male Adolescents Boys

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Abstract:
Yoga and Physiology both have inter relationships, physiological changes in the human body through yoga is realized by many studies on different illnesses' and disorders of human body organs. There has been limited research regarding yoga's effect on physiological functions in adolescents. The purpose of the present investigation was to examine the effects of Yogasana and Pranayama practice on blood pressure and resting heart rate of male adolescents. The Subjects for the study were adolescent boys studying between 13 to 16 years. Total 80 Subjects studying at a private school were selected through simple random sampling technique for the present investigation. 40 subjects each were placed in treatment as well as control group. All the subjects selected for this study were tested twice prior to treatment (pre-test) and at the conclusion of treatment (post-test) with a time gap of 24 weeks. Selected physiological capability parameters and testing tools were used in the present investigation. Treatment in the form of selected yogic asana along with pranayama was given to selected subjects in the specified treatment group. Twenty four weeks of training included systematic yogasana and pranayama training for six days in a week. In order to examine the hypothesis of the study paired samples "t" test was used. There were significant differences in Systolic Blood Pressure, Diastolic Blood Pressure and Resting Heart rate during pre test and post test of experimental group was 112.60 &106.00, and 67.60 & 60.80 and 73 & 64 respectively, whereas the differences in mean was not significant in control group during pre test and post test situations. On the basis of the present investigation it can be concluded that the physiological functions significantly improves in terms of Systolic blood pressure, diastolic blood pressure and resting heart rate in adolescent boys.
Keywords: Health, physiological functions, yogasana, pranayama, Systolic blood pressure, Diastolic Blood pressure and Resting Heart Rate.

Introduction

Yoga is oldest spiritual technique of physical and mental exercise known to humanity. Yoga is a psycho-somatic-spiritual discipline for achieving union and harmony between our mind, body, and soul and the ultimate union of our individual consciousness with the universal consciousness [1]. Yogic techniques produce consistent physiological changes and have sound scientific basis [2, 3]. Yoga has been practiced for thousands of years. It is based on ancient theories, observations and principles of the mind-body connections. Substantial research has been conducted to look at the physiological benefits of yoga through yoga postures (*asanas*), yoga breathing (*pranayama*) and meditation.

Yoga has been investigated in relation to a variety of topics with focus in the reduction of symptoms of various diseases and ailments, such as lower back pain, arthritis, diabetes and heart disease [4], as well as the treatment of mental health issues, principally the reduction of stress [5-6]. There has been limited research regarding yoga"s effect on systolic and diastolic blood pressure and heart rate in adolescents. In particular, there is a lack of evidence as to whether the practice of yoga can provide sufficient physical activity to improve and/or maintain cardio respiratory endurance, muscular fitness and blood pressure response. The purpose of the present investigation was to examine the effects of Yogasana and Pranayama practice on physiological capacities of male adolescents.

Methods

The Subjects for the study were adolescent boys studying in 8th to 10th standard and their age ranged between 13 to 16 years. Total 80 Subjects studying at a private school at Mysore were selected through simple random sampling technique for the present investigation. 40 subjects each were placed in treatment as well as control group. All the subjects selected for this study were tested twice prior to treatment (pre-test) and at the conclusion of treatment (post-test) with a time gap of 16 weeks. The details on physiological parameters and testing tools are given in Table 1.

Table 1: Details on Physiological capabilities along with respective testing tools.

S.No.	Parameters	Testing tools
1	Systolic blood pressure	Sphygmomanometer & stethoscope
2	Diastolic blood Pressure	Sphygmomanometer & stethoscope
3	Resting heart rate	Radial pulse

Treatment in the form of yogic asana along with pranayama was given to selected subjects in the specified treatment group. Control group did not take part in any form of physical training and observed normal daily routine. Twenty four weeks of training included systematic yoga and pranayama training for six days in a week. The training was scheduled in the morning 80 minutes which included 10 minutes for warm up, 60 minutes for pre planned treatment and another 10 minutes for cool down. In order to examine the hypothesis of the study paired samples „t" test was used.

Results

The results on physiological capacities during pre and post test situations of experimental and groups are given in table 2 and 3 respectively.

Table 2. Summary of results on physiological capacities at pre and post test situations of experimental group.

	Systolic Blood Pressure		Diastolic Blood Pressure		Resting Heart rate	
	Pre	Post	Pre	Post	Pre	Post
Sample size	40	40	40	40	40	40
Arithmetic mean	112.60	106.60	67.60	60.80	73	64
Standard deviation	7.008	7.178	6.659	6.715	6.77	7.41
Standard error of the mean	1.108	1.135	1.053	1.062	1.0711	1.1723
Paired samples t-mean difference	-6.000		-6.800		9.2250	
Standard deviation	4.820		4.637		3.3626	
't' value	7.873		9.276		17.351	
Degrees of Freedom	39		39		39	
Two-tailed probability	P = .000		P = .000		P = .000	

Table 3. Summary of results on physiological capacities at pre and post test situations of control group.

	Systolic Blood Pressure		Diastolic Blood Pressure		Resting Heart Rate	
	Pre	Post	Pre	Post	Pre	Post
Sample size	40	40	40	40	40	40
Arithmetic mean	110.75	111.95	66.85	72.40	80	82
Standard deviation	6.574	8.706	5.851	5.266	10.86	11.42
Standard error of the mean	1.039	1.377	.925	.833	1.7168	1.8063
Paired samples t-mean different	-1.200		-5.550		-2.5750	
Standard deviation	7.130		4.630		9.2290	
't' value	-1.065		-7.582		-1.765	
Degrees of freedom	39		39		39	
Two-tailed probability	P = .294		P = .000		P = .085	

Table 4: Summary of 't' test results on physiological capacities at pre and post test situations of both groups.

		Mean ± SD	SEM	't' Value
Systolic Blood Pressure	Experiment (Pre-test)	112.60	1.108	7.873
	Experimental (Post-test)	106.60	1.135	
	Control (Pre-test)	110.75	1.039	-1.065
	Control (Post-test)	111.95	1.377	
Diastolic Blood	Experiment (Pre-test)	67.60	1.053	9.276
	Experimental (Post-test)	60.80	1.062	
	Control (Pre-test)	66.85	.925	-7.582
	Control (Post-test)	72.40	.833	
Resting Heart rate	Experiment (Pre-test)	73	1.0711	17.351
	Experimental (Post-test)	64	1.1723	
	Control (Pre-test)	80	1.7168	-1.765
	Control (Post-test)	82	1.8063	

Table 4 depicts mean of systolic blood pressure during pre test and post test of experimental group was 112.60 and 106.60 respectively, whereas the mean of systolic blood pressure during pre test and post test of control group was 110.75 and 111.95 respectively. The "t" value in case of experimental group was 7.873. And for control group it was 1.065 respectively,

Diastolic blood pressure during pre test and post test of experimental group was 67.60 and 60.80 respectively, whereas the mean of systolic blood pressure during pre test and post test of control group was 66.85 and 72.40 respectively. The "t" value in case of experimental group was 9.276 and for control group it was -7.582 respectively,

The resting heart rate during pre test and post test of experimental group was 73 and 64 respectively, whereas the mean of resting heart rate during pre test and post test of control group was 80 and 82 respectively. The "t" value in case of experimental group was 17.351 and for control group it was -1.765 respectively. In these cases null hypothesis is rejected at .05 level of significance. In case of systolic blood pressure and diastolic blood pressure although there were significant differences in pre and post test scores of experimental group, significant differences were also observed in control group results.

Discussion

Physiological functions have great implications in determining the physical performance as well as health of an individual. Ray U.S. et al [7] observed significant improvement in VO2 max after Yogic training. Raju P.S. et al [8] have found a significant increase in oxygen consumption per unit work after yoga training. It also reported that cardiovascular endurance increases due to yoga training [7]. The study by Singh *et al* demonstrated the beneficial effect of Nadi shodhana pranayama on heart rate of youth between the age groups 18-24 [9].

It also Observed statistically significant reduction in heart rate after short term Yoga training [10-11] . In case blood pressures there were significant differences in pre and post test results of experimental group.

There were significant differences observed in pre and post test results of experimental group in systolic and diastolic blood pressure. The present results are supported by numerous other studies [12].

Conclusion

On the basis of the present investigation it can be concluded that the physiological functions significantly improves in terms of Systolic Blood Pressure, Diastolic Blood Pressure and Resting Heart rate in adolescents by yoga training.

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Impact Of Different Proportions Of Aerobic And Anaerobic Training On Left Ventricular Wall Thickness Among Elite Athletes

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Abstract

Back ground: Highly focused regular sports training among elite athletes leads to greatly increased left ventricular cavity dilation and wall thickness. In this study we have used m-mode Doppler echocardiography to measure left ventricular wall thickness. It is confirmed to study the impact of different proportions of aerobic and anaerobic training on left ventricular wall thickness among elite athletes.Method:45 volunteered men elite athletes were taken to reach the purpose of this study. Subjects were divide into three groups first group is 10% aerobic and 90% anaerobicproportions (200 mtr race) and second group is 50% aerobic and 50% anaerobic proportions (1500 mtr) and 90% aerobic and 10% anaerobicproportions (10000 mtr run).Subjects underwent regular training program under the supervision of their regular coaches as per specialized sports event. The subject's age between 20 and 25 years and the sports age is 5 to 7 years.Results and conclusion: M-mode Doppler echocardiography examinations showed the increase of left ventricular wall thickness among the three experimental groups. 90% aerobic and 10% anaerobic group athlete has significantly increased the left ventricular wall thickness (LVWT)as compared to other two experimental groups. It is concluded that to improve left ventricular wall thickness 90% aerobic and 10% anaerobic training is an effective training portion.Key words: Sports training; Left ventricular wall thickness; Different proportions of aerobic and anaerobic training; Cardiac hypertrophy

Introduction

Modifications of cardiac changes by long term endurance training is known as Athlete's heart.**(Antonello D, Rosangela Cet al., 2010)**Cardiac morphologic changes, including expanded left ventricular cavity measurements, wall thickness, left ventricular mass. The progressions appear to represent adjustments to hemodynamic load delivered by long-term, intensive exercise program. The extent to which outright left ventricular cavity measurement is expanded by sympathetic training is more in many athletes**(Antonio Pelliccia et al., 1999**).

According to **Dibello et al.(1993)**the thickness of the interventricular septum and left ventricular posterior wall thickness of the marathon runner has increased as compared to untrained subjects.**Sharma et al.(2002)** explored the physiological limits of left ventricular hypertrophy in world class junior competitors. They find that the left ventricular posterior wall thickness in the group of athletes was expanded contrasted with untrained subjects.

In this study the investigator is trying to put an effort to find out how 10% aerobic and 90% anaerobic and 50% aerobic and 50% anaerobic and 90% aerobic and 10% anaerobic trainings are going to influence on Left ventricular wall thickness.

The investigator has chosen elite athletes who have been successfully participating at National and University level competitions. Subject underwent regular training program under the supervision of their regular coaches as per specialized sports event. The subjects age between 20 and 25 years. The training diary revealed that volunteered elite subject athletes were not reported any injuries during their training period and their sports age is 5 to 7 years.

Method

Forty Five (N=45) healthy male elite athletes were volunteered as subjects from different parts of Andhra Pradesh and Telangana state, India. The investigator has parted them into three groups according to their events and utilization of different aerobic and anaerobic proportions. Group I is 10% aerobic and 90% anaerobic proportion (200 mtr race) , Group II is 50% aerobic and 50% anaerobic proportion (1500 mtr race) and Group III is 90% aerobic and 10% anaerobic proportion (10,000 mtr race) (Edward L. Fox, 1989). The assessed Left ventricular Wall thickness at rest was measured by M-mode Doppler echocardiography (Philips CX50 ultra image systemPhilips medical systems, USA, with 2.5 to 3.5 MHz transducer for was used to determine the) at Lakshya Cardiac Center, Prodatur, A.P. India.

Statistical Analysis

The collected data on LVWT has been analyzed and presented below. The data collected from experimental groups LVWT at rest were statistically tested for significant difference, if any by employing Analysis of variance (ANOVA) and data were analyzed by using computer with IBM-25, SPSS package. The level of confidence was fixed at 0.05 for significance. To determine the significance difference among the means of three experimental groups, the Scheffe'S test was applied as post-hoc test.

Results

The analysis of variance for data on LVWT at restof 10% aerobic and 90% anaerobic group, 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic group were analyzed and presented in Table 1.

TABLE 1: Analysis of variance for the left ventricular wall thickness at rest data on 10% aerobic and 90% anaerobic group, 50% aerobic and 50% anaerobic group and 90% aerobic and 10% Anaerobic group

Test	**10% Aerobic and 90% Anaerobic Group**	**50% Aerobic and 50% Anaerobic Group**	**90% Aerobic and 10% Anaerobic Group**	**Source of Variance**	**df**	**Sum of Squares**	**Mean Squares**	**Obtained 'F' Ratio**	**Table 'F' Ratio**
Mean Standard Deviation	1.223 0.02	1.244 0.016	1.260 0.015	B: W:	2 42	0.010 0.012	0.005 0.000	17.604*	3.222

Significant at 0.05 level of confidence

The table value for significance at 0.05 level with df 2 and 42 are 3.222.

The table 1 shows that the means of 10% aerobic and 90% anaerobic group, 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic group are 1.223, 1.244 and 1.260 cm respectively. The obtained 'F' ratio of 17.604 is greater than the table value of 3.222 for df 2 and 42 required for significant at 0.05 level.The results of the study indicates that the significant difference exists among 10% aerobic and 90% anaerobic group, 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic group on LVWT at rest. To determine the significance difference among the means of three experimental groups, the Scheffe'S test was applied as post-hoc test and the results are presented in table 1-A.

Table 1-A: Scheffe's post-hoc test for left ventricular wall thickness at rest on the difference between 10% aerobic and 90% anaerobic group, 50% aerobic and 50% anaerobic group and 90% Aerobic and 10% anaerobic group

10% Aerobic and 90% Anaerobic Group	**50% Aerobic and 50% Anaerobic Group**	**90% Aerobic and 10% Anaerobic Group**	**Mean Differences**	**Confidence Interval 0.05 Level**
1.223	1.244	-	0.021*	0
1.223	-	1.26	0.037*	0
-	1.244	1.26	0.016*	0

*Significant at 0.05 level of confidence.

Table 1-A shows that the tests mean difference on LVWT at rest between 10% aerobic and 90% anaerobic group and 50% aerobic and 50% anaerobic group is 0.021 which is greater than the confidence interval value 0.0 at 0.05 level of confidence. The test mean difference on LVWT at rest between 10% aerobic and 90% anaerobic group and 90% aerobic and 10% anaerobic group is 0.037 which is much greater than the confidence interval value 0.0 at 0.05 level of confidence. The test mean difference on LVWT at rest between 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic group is 0.016 which is greater than the confidence interval value 0.0 at 0.05 level of confidence. Hence, it is concluded from the results that there is a significant difference among three experimental groups on LVWT at rest. From the results it was concluded that, 90% aerobic and 10% anaerobic group has increased the LVWT at rest as compared to the other two experimental groups.

Further it is concluded that highest mean difference exists between 10% aerobic and 90% anaerobic group and 90% aerobic and 10% anaerobic group.

The tests mean values on LVWT at rest of three experimental groups are graphically presented in Figure 1.

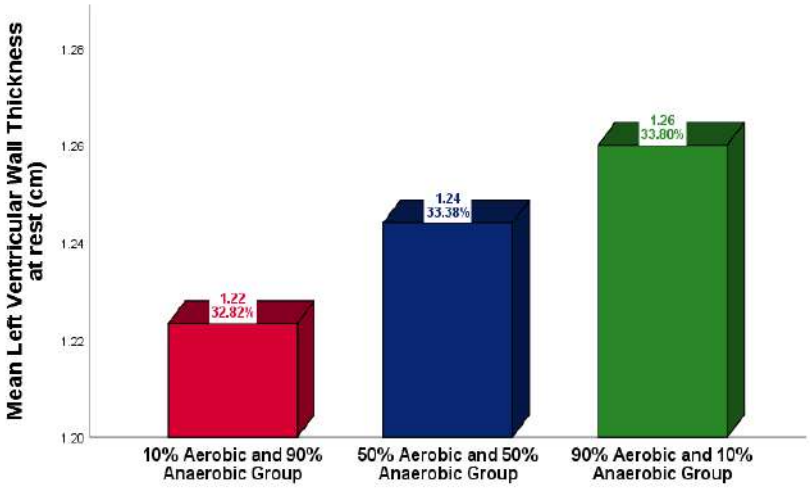

Figure 1: Bar diagram on left ventricular wall thickness at rest means of 10% aerobic and 90%anaerobic group, 50% aerobic and 50% anaerobic group and 90% aerobic and 10%anaerobic group.

Discussion On Findings

From the results of the study it has been concluded that, all the three experimental groups the 10%aerobic and 90% anaerobic, 50% aerobic and 50% anaerobic and 90% aerobic and 10% anaerobic group has significantly increased the LVWT at resthowever, 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic groups have significantly increased LVWT at restas compared with 10% aerobic and 90% anaerobic group.

Regular sport activity normally induces myocardial structural and functional modifications. (Rawlins j, Bhan A, sharma S, 2009) Walls thickness and LV chamber dimensions are particularly involved in this adaptation. (Alessio De Luca, Laura Stefani et al.,2011)

Recent study of over 700 adolescent British athletes participating in a variety of ball, racket and endurance sports showed that none of the athletes aged <16 years old exhibited an LVWT>11 mm. in this study only three athletes had LVWT >12mm and all were aged >16 years old.(Sharma S, Maron BJ, 2002).The sporting discipline is an important determinant of LVH in athletes. Athletes participating ultra-endurance sport with a high isotonic and isometric component such as rowing, canoeing, swimming, cycling, ultra-endurance running exhibit the greatest increases in LVWT. (John Rawlins, Amit Bhan, Sanjay Sharma (2009).

There is emerging evidence that ethnicity may have an impact on LVWT measurements in athletes. An initial study of 260 black American inter-collegiate athletes showed that 13% of the athletes exhibited left ventricular hypertrophy, with left ventricular wall thickness measurements ranging from 13 to 18 mm (Lewis JF, Maron BJ, et al., 1989). Highly trained athletes exhibit substantial left ventricular hypertrophy, with values between 13 and 16 mm (Basavarajaiah S, Wilson M, et al., 2008).

Athletes doing predominantly isometric exercise have considerable left ventricular wall hypertrophy and Endurance athletes have left ventricular dilatation without marked wall hypertrophy when athletes doing isotonic exercise (Howald H, maire R, et al., 1977).Cardiac changes in endurance runners have been studied and increases in the left ventricular hypertrophy of the left ventricular wall obviously caused by repeated and prolonged volume work in isotonic exercise have been found (Markku J. Ikaheimo, et al., 1979).

If the person participates in an endurance exercise like marathon for a long time, the eccentric left ventricle hypertrophy, in which the thickness of ventricle is not large whereas the left ventricular wall is a relatively increased (Vinereanu et al., 2002). Resistive exercise like wrestling, weightlifting and body building. The characteristics of the concentric left ventricle hypertrophy, in which the ventricular wall is not large whereas the thickness of ventricle is increased. In addition, cyclists and rowing athletes who have the characteristics of both aerobic and anaerobic exercise systems have eccentric- concentric left ventricle hypertrophy (Baggish et al., 2010)

Sharma et al., 2000 states that due to exercise as physiological basis structure and function of the heart has changed, and also increases left ventricular wall thickness. These futures carried about by slow increase in the internal dimension of the heart muscle by performing aerobic exercise with continuous management of heart rate and blood pressure, in addition Cardiac output increased (palatine et al .,1988).

The present study concludes that the findings are inconformity with above research findings.

Conclusions

Left ventricular wall thickness at rest has increased by 50% aerobic and 50% anaerobic group and 90% aerobic and 10% anaerobic group as compared to 10% aerobic and 90% anaerobic group.

Recommendations

90% aerobic and 10% anaerobic training proportions is the better proportion to increase the left ventricular chamber dilation and also LVWT.

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Effect Of Contrast Training With Core Exercise Program On Serving Ability Among Volleyball Men Players

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Abstract :
The present study was undertaken to analyze the effect of Contrast training (CTG), core exercise programme (CEPG) and contrast training with core exercise programme group (CCTCEPG) on serving ability among volley ball players. The investigator has selected N=48 men inter collegiate level volleyball players at random from in around Guntur district of Andhra Pradesh .Their age ranged from 18-26 years. The subjects chosen for the study were divided into four equal groups n=12 and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. CTG were given to group 'A' CEPG were given to group 'B' CTCEPG were given to group 'C' and the control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that CTG, CEPG and CCTCEPG of serving ability significantly improved than control group. CCTCEPG show better performance than CTG and CEPG.
Keywords: – Contrast training - Core – Serving ability.

Introduction:

Contrast training refers performing two exercises in succession with vastly different loads. Contrast training mean two different load one heavy and another light explosive type exercises which takes the advantage of the post-activation potentiation (PAP) phenomenon example back squat rest box jump rest back squat rest box jump. Core exercise refers to exercises has effect on trunk and more specifically to the lumbo pelvic region of the body. The core muscles of the body are rectus abdominus, external obliques, internal obliques, transverse abdominis, quadrates lumborum, multifidus and erector spinate (Aditya 2017).

Volleyball skills and drills is divided into ten categories serving, receiving, setting, attacking, blocking, digging, playing offense, playing defense, transitioning and practicing. Easy serves mean services that allow opponents to pass the ball directly to the target, allowing the setter to set all possible options. Serving from different areas can help prevent an opposing passer from getting too comfortable. The float serve slides left or right, up or down because it hit without spin. The jump serve has spin on it which prevents air currents from acting upon its flight, hit very hard to come with great deal of speed, speed and accuracy are essential elements of successful jump serving (Kinda 2006).

Statement of the Problem:

The purpose of the study was to investigate the "Effect of contrast training, core exercise program. Contrast training with core exercise program on serving ability among volleyball men players.

Hypothesis:

It was hypothesis that there will be a significant improvement in serving ability after the twelve weeks of training in contrast training group, core exercise programme group, contrast training with core exercise programme group (CTCEPG) as compared with control group.

Methodology:

The purpose of this study was to find out the effect of contrast training group (CTG), core exercise programme group (CEPG) and contrast training with core exercise programme group (CTCEPG) on serving ability among volleyball players. To achieve the purpose of study N=48 men inter collegiate volleyball players selected at random from in around Guntur district of Andhra Pradesh. Their age ranged from 18-26 years. The subjects chosen for study was divided into four groups and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. CTG were given to group 'A' CEPG were given to group 'B' CCTCEPG were given to group 'C' and control group D. Each groups consisted of twelve volleyball players. Control group 'D' was restricted to participate in any of the training programme other than their regular activities.

Training was given three days in a week for twelve weeks. The subject were tested on serving ability at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the serving ability Rusell –Lange service test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on serving ability data have been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table – I:**Analysis of Covariance for serving ability on Pre Test and Post Test Data of Experimental and Control Groups (In Numbers)**

Tests	CTG	CEPG	CCTCEPG	CG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test	26.66	27.25	28.00	27.08		11.16	3	3.72	0.33
Mean					B	495.83	44	11.26	
SD	3.65	3.49	2.70	3.47	W				
Post Test	32.00	32.41	38.75	26.33		927.41	3	309.13	15.53*
Mean	3.56				B	875.83	44	19.09	
SD		2.64	6.75	3.77	W				
Adjusted	32.40	32.41	38.22	26.45		823.74	3	274.58	
Post Test					B		43		18.67*
Mean					W	632.40		14.70	

*Significant level fixed at 0.05.

The table value for 0.05 level of significant with 3 & 44 and 3 & 43 degree of freedom are 2.82 and 2.82 respectively.

The above table-I shows that there is a significant difference in serving ability among the three groups such as constrast training group (CTG), core exercise programme group (CEPG), constrast training with core exercise programme group (CTCEPG). Since the calculated 'F' value required being significant at 0.05 level for 3, 44 d/f and 3, 43 are 2.82 and 2.82, but the calculated values of serving ability post and adjusted posttest 'F' values are 15.53 and 18.67 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II :The Scheffes Test for the Mean Differences Between Paired Mean of Groups on Serving ability

Mean Value				Mean	C.I
CTG	CEPG	CCTCEPG	CG	Difference	
32.40	32.41	-	-	0.01	4.46
32.40	-	38.22	-	5.28*	
32.40	-	-	26.45	5.95*	

-	32.41	38.22	-	5.81*	
-	32.41	-	26.45	5.96*	
-	-	38.22	26.45	11.77*	

***Significant at 0.05 level of confidence**

The above table II shows that the adjusted post-test mean differences values between contrast training group (CTG) and control group (CG), core exercise programmegroup (CEPG) and control group (CG) and contrast training with core exercise programme group (CTCEPG) and control group (CG) were 5.95, 5.96 and 11.77 respectively on serving ability, which were greater than the required confidence interval value 4.46 at 0.05 level of confidence. It was concluded from the above table that the three experimental groups were found to be significant when compared with control group.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the experimental groups and control group on serving ability were presented in figure 1.

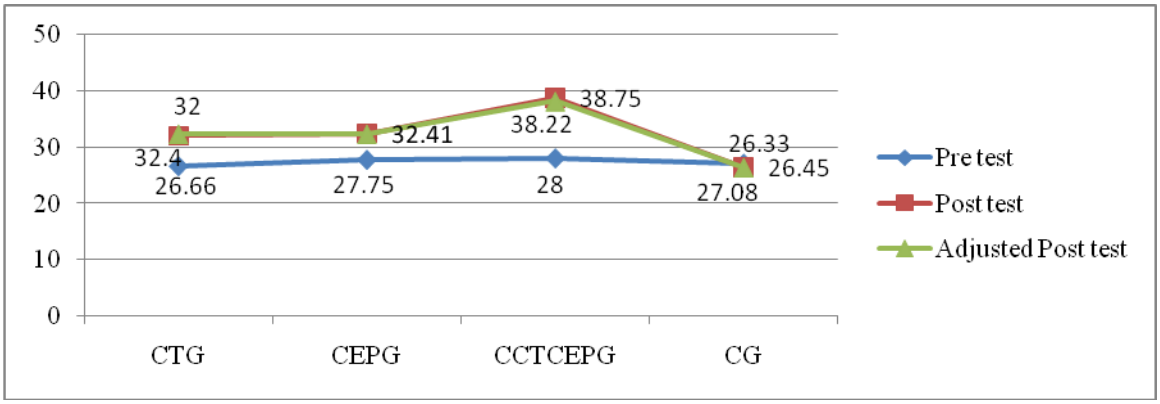

Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on serving ability

Discussion on Hypothesis:

The hypothesis says that there may be significant difference between experimental group and control group on serving ability. The result of the study shows that there were significant differences exist between experimental group and control group. Hence the research hypothesis is accepted.

Discussion and Findings:

The result of the study reveals that after the twelve weeks of contrast training group (CTG), core exercise programme group (CEPG), contrast training with core exercise programme group (CTCEPG) result in significantly improved serving ability of volleyball players. The finding of the study are aligned with the following studies *Tomislav et al., (2016),* Sudhir et al., (2016), Bala Krishna (2016), Selvakumar & Palanisamy (2017) as an effective method to improve serving ability.

Conclusions:

Serving ability was significantly improved by the contrast training group (CTG), core exercise programme group (CEPG) and contrast training with core exercise programme group (CTCEPG) when compared with control group. Further it show that combined training group CCTCEPG better performance than isolated groups CTG and CEPG.

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Effect Of Contrast Training With Core Exercise Program On Muscular Endurance Among Volleyball Men Players

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Abstract:
The present study was undertaken to analyze the effect of Contrast training (CTG), core exercise programme (CEPG) and contrast training with core exercise programme group (CCTCEPG) on muscular endurance among volley ball players. The investigator has selected N=48 men inter collegiate level volleyball players at random from in around Guntur district of Andhra Pradesh .Their age ranged from 18-26 years. The subjects chosen for the study were divided into four equal groups n=12 and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. CTG were given to group 'A' CEPG were given to group 'B' CTCEPG were given to group 'C' and the control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that CTG, CEPG and CCTCEPG of muscular endurance significantly improved than control group. CCTCEPG show better performance than CTG and CEPG. CEPG show better performance than CTG
Keywords: – Contrast training - Core – Serving ability.

Introduction:
Physical fitness refers to the capacity of an athlete to meet the varied physical demands of their sports without reducing the athlete to a fatigued state. Physical fitness level predicts the sports performance level of the athletes. Therefore for optimum performance need physical fitness. Physical fitness need in life to enjoy and reach the goals with least fatigue (Rama & Ratnakara 2015)

Contrast training refers performing two exercises in succession with vastly different loads. Contrast training mean two different load one heavy and another light explosive type exercises which takes the advantage of the post-activation potentiation (PAP) phenomenon example back squat rest box jump rest back squat rest box jump. Core exercise refers to exercises has effect on trunk and more specifically to the lumbo pelvic region of the body. The core muscles of the body are rectus abdominus, external obliques, internal obliques, transverse abdominis, quadrates lumborum, multifidus and erector spinate (Aditya 2017).

Statement of the Problem:

The purpose of the study was to investigate the "Effect of contrast training, core exercise program. Contrast training with core exercise program on muscular endurance among volleyball men players.

Hypothesis:

It was hypothesis that there will be a significant improvement in muscular endurance after the twelve weeks of training in contrast training group, core exercise programme group, contrast training with core exercise programme group (CTCEPG) as compared with control group.

Methodology:

The purpose of this study was to find out the effect of contrast training group (CTG), core exercise programme group (CEPG) and contrast training with core exercise programme group (CTCEPG) on muscular endurance among volleyball players. To achieve the purpose of study N=48 men inter collegiate volleyball players selected at random from in around Guntur district of Andhra Pradesh. Their age ranged from 18-26 years. The subjects chosen for study was divided into four groups and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. CTG were given to group 'A' CEPG were given to group 'B' CCTCEPG were given to group 'C' and control group D. Each groups consisted of twelve volleyball players. Control group 'D' was restricted to participate in any of the training programme other than their regular activities.

Training was given three days in a week for twelve weeks. The subject were tested on muscular endurance at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the muscular endurance sit-ups test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on serving ability data have been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table – I:**Analysis of Covariance for muscular endurance on Pre Test and Post Test Data of Experimental and Control Groups (In Numbers)**

Tests	CTG	CEPG	CCTCEPG	CG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test	40.50	42.91	41.16	40.25		52.03	3	17.36	1.23
Mean		6.14	1.69		**B**		4	14.04	
SD	2.64			2.92	**W**	617.833	4		

Post Test Mean SD	46.50 2.61	52.83 3.01	54.74 0.86	37.58 4.20	**B W**	2155.83 377.83	3 4 4	718.61 8.58	83.68 *
Adjusted Post Test Mean	46.78	52.14	54.76	37.97	**B W**	1915.21 276.20	3 4 3	638.40 6.42	99.38 *

*****Significant level fixed at 0.05.

The table value for 0.05 level of significant with 3 & 44 and 3 & 43 degree of freedom are 2.82 and 2.82 respectively.The above table-I shows that there is a significant difference on muscular endurance among the three groups such as contrast training group (CTG), core exercise programme group (CEPG), constrast training with core exercise programme group (CTCEPG). Since the calculated 'F' value required being significant at 0.05 level for 3, 44 d/f and 3, 43 are 2.82 and 2.82, but the calculated values of muscular endurance post and adjusted posttest 'F' values are 83.68 and 99.38 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II :The Scheffes Test for the Mean Differences Between Paired Mean of Groups on Muscular endurance

Mean Value				**Mean Difference**	**C.I**
CTG	**CEPG**	**CCTCEPG**	**CG**		
46.78	52.14	-	-	5.36*	0.86
46.78	-	54.76	-	7.98*	
46.78	-	-	37.97	8.83*	
-	52.14	54.76	-	2.62*	
-	52.14	-	37.97	14.17*	
-	-	54.76	37.97	16.79*	

Significant at 0.05 level of confidence

The above table II shows that the adjusted post-test mean differences values between contrast training group (CTG) and control group (CG), core exercise program group (CEPG) and control group (CG) and contrast training with core exercise program group (CTCEPG) and control group (CG) were 8.83, 14.17 and 16.79 respectively on muscular endurance, which were greater than the required confidence interval value 4.46 at 0.05 level of confidence. It was concluded from the above table that the three experimental groups were found to be significant when compared with control group.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the experimental groups and control group on muscular endurance were presented in figure 1.

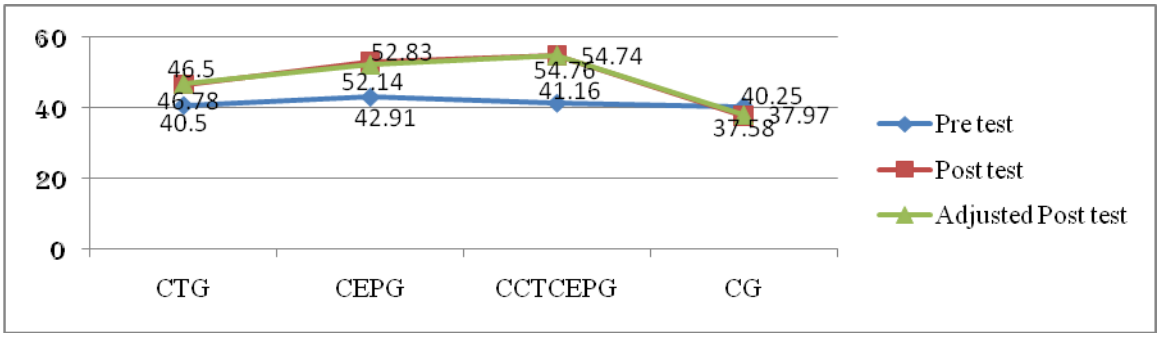

Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on muscular endurance

Discussion on Hypothesis:

The hypothesis says that there may be significant difference between experimental group and control group on muscular endurance. The result of the study shows that there were significant differences exist between experimental group and control group. Hence the research hypothesis is accepted.

Discussion and Findings:

Muscular endurance

The result of the study reveals that after the twelve weeks of contrast training group (CTG), core exercise program group (CEPG), contrast training with core exercise program group (CTCEPG) result in significantly improved serving ability of muscular endurance. The finding of the study are aligned with the following studies Parasuraman & Mahadevan (2018), Anitha et al., (2018) Kamalakkannan et al., (2011), Kwong-Chung Hung et al., (2018) as an effective method to improve muscular endurance.

Conclusions:

Muscular endurance was significantly improved by the contrast training group (CTG), core exercise program group (CEPG) and contrast training with core exercise program group (CTCEPG) when compared with control group. Further it show that combined training group CCTCEPG better performance than isolated groups CTG and CEPG.

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Personality Traits And Performance: A Study On Inter- College Female Sports-Persons

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Abstract
Studies of measurement of personality traits of athletes and players are vital, if we are to secure the information needed by sport psychologists and coaches, who are charged with responsibility for selection, counseling and also the training of the athletes for competition. The present study deal with the differences on sociability, dominance, extroversion, self-concept, conventionality, mental toughness and emotional stability among the female sportspersons of different games, e.g.; baseball, football, handball, judo, taekwondo, and wrestling participating at college level of competition.KEYWORDS-Sociability, Dominance, Extroversion, Self-Concept, Conventionality, Athletes, Events

Introduction

Personality would refer to the way a person appears and affects others and also the way he stimulates others, i.e. his social stimulus value. By personality, it is now generally meant that it is the organization and integration of a large number of human traits.

Eysenck (1960) believes that “personality is more or less stable and enduring organization of a person’s character, temperament, intellect and physique, which determines his unique adjustment to the environment.” Besides supporting the concepts of uniqueness and adjustment, he also adds two terms,’ character and temperament’. Character implies that a particular code of behavior exists in people’s actions. It is only to a kind of personality one has that makes the character ‘good’ or bad’. Temperament refers to biological and physiological disposition, a person has towards events. It refers to emotional nature.

As personality is reflective of the entire behavioral dimensions of individuals, it has strong bearing not only on athletic preferences but it has a direct link with sports performance. Tutko and Richards (1971) had long ago identified a number of personality traits related to high athletic achievement such as drive, determination, intelligence, aggression, leadership, organization, coachability, emotionality, self-confidence, mental toughness, responsibility, trust and conscience development.

In the present study the seven personality traits of the sports-persons would be used

Sociability means a sociable person is warm , good-natured , easy going, ready to cooperate, attentive to people, , kindly, trustful, soft-hearted, adaptable and warm-hearted. It is important

trait for athletes in that it implies being generous to team-mates and that criticism from others will be accepted in good faith.

Dominance denotes self-assertiveness, self-assurance, hardness, and toughness, unconventionality and competitive aggressiveness, persuading, seducing or commanding others. Dominance is characterized by desire to influence and control one's environment and other people and is linked with ability for directing and controlling other people through subduing, persuading, seducing or commanding them.

Extraversion means outgoing, uninhibited, impulsive, involved in group activities, sociable, being friendly, craving for excitement, and having many social contacts. They stick their necks out and take chances, act on the spur of the moment, are optimistic, aggressive, laugh a great deal, lose their temper easily and are unable to keep their feelings under control.

Self-concept reflects to several kinds of identifiable personality traits such as self-confidence, self-assurance, self-assertiveness, self-esteem, self-regard, self-consistency, self-enhancement, self-respect. What a person perceives of himself and his achievement in life is called self-concept.

Conventionality denotes behaviour such as being alert to proper way of doing things, being very practical, narrowing of interests to immediate problems, being realistic,dependable,sound,being concerned and worried about issues. Many researchers have found athletes to be highly conservative and conventional in their responses to social situations.

Mental Toughness indicates that mentally tough athletes can take rough handling; they are not easily upset about losing, playing badly or being spoken to harshly, can accept strong criticism without being hurt and do not need too much encouragement from their coaches. This is also manifested in realistic, self-reliant, and cynical behavior.

Emotional Stability is characterized by maturity, stability quite realism, absence of neurotic fatigue, placidness, unaffectedness, optimism and self-discipline. While on the other hand, Emotional Instability is characterized by low tolerance of frustration, immaturity, unstableness, high excitability, evasiveness, wordiness and neurotic fatigability. There is a high level of anxiety and apprehensiveness, together with diminished activity, lowered self-confidence and a general loss of initiative.The present study would be helpful in selection of athletes for different sports, in according with the identified personality traits needed in different sports and games. Training program can also be monitored on the basis of such personality data available for them.

OBJECTIVES OF THE STUDY

The objectives of the present study are given below:-

1. To measure the personality characteristics, like sociability, dominance, extraversion, self-concept, conventionality, mental toughness and emotional stability of the sports-persons participating at college level of competitions.
2. To study seven personality traits between sports-persons of ball games and combat games at college competition.
3. To know the differences on the seven tracts of personality among the female sports-persons of different games.

HYPOTHESES OF THE STUDY

There would be significant differences on seven trait of personality between the female sports-persons of ball games and combat games at college level of participation.

PROCEDURE AND STATISTICAL TECHNIQUES

Here personality characteristics was dependent variable, and type of the games i.e.; ball games and combat games was the independent variable. In order to achieve the objectives and test the hypotheses ; a sample of 300 female sports-persons were selected from inter-college level . An attempt was made to have 50% of the sample from the ball games and 50% players from the combat games. The players of the ball games were selected from Baseball Football, and Handball and players of the combat games were taken from the games of Judo, Taekwondo and wrestling.

For the measurement of personality traits of sportspersons; **Specific Sports Personality Test** devised by Cheema and **Singh** (2005) was administered in Punjabi version to all the subjects of the study; both males and females. This test consists of 100 items and measures seven traits of personality measures. It is a reliable and valid test.

The following statistical techniques were used on the raw data in order to meet aim of the study:

The means, SDs, and SEs of the scores of all the variables belonging to different groups were calculated.t-ratios were found out in order to know the significant differences on scores of seven traits of personality between two groups formed on the basis of types of games i.e. sportspersons of ball games and combat games.One way analysis of variance (ANOVA) was computed to know the significant differences on the scores of seven traits of personality among the female athletes of six games.Pearson's product moment of correlation was worked out to find the relationships between two variables as well as inter-co-relationship among all these variables under study.

STATISTICAL ANALYSIS

The objective of the study was to know the differences on sociability, dominance, extroversion, self-concept, conventionality, mental toughness and emotional stability among the female sportspersons of different games, e.g.; baseball, football, handball, judo, taekwondo, and wrestling.

Table 1 Descriptive Statistics of Sociability of inter-college female players of six games

Games	N	Mean	Std. Deviation	Std. Error
Baseball	50	42.98	5.223	0.738
Football	50	42.24	6.973	0.986
Handball	50	40.36	5.317	0.752
Judo	50	44.52	5.444	0.769
Taekwondo	50	44.74	5.587	0.7901
Wrestling	50	44.86	7.979	1.128
Total	**300**	**43.28**	**6.335**	**0.365**

As per the above table, the means and standard deviation scores of sociability of the players of six games were as Baseball (M=42.98 ±5.22), Football (M=42.24 ±6.97), Handball

(M=40.36 ±5.31), Judo (M=44.52 ±5.44), Taekwondo (M=44.74 ±5.58), Wrestling (M=44.86 ±7.97) respectively.

Table 2Summary Table of ANOVA of Sociability scores of Inter-college female players of six games

	Sum of Sq.	df	Mean Sq.	F-value	p-value
Between	793.177	5	158.635	4.161**	.001**
Within	11207.740	294	38.122		
Total	**12000.917**	**299**			

** Significant at 0.01 level.

As per the above table, F value of 4.161 was found to be significant at 0.01 level of confidence. It means that there were significant differences in the mean scores of sociability among the players of six games of inter-college level competition. Table 3 shows the descriptive statistics of the scores of Dominance trait of personality of female sports-persons of inter-college level competition of six games, i.e.; baseball, football, handball, judo, taekwondo and wrestling.

Table 3 Descriptive Statistics of Dominance of inter-college female players of six games

Games	N	Mean	Std. Dev.	Std. Error
Baseball	50	40.90	5.088	.719
Football	50	39.38	5.321	.752
Handball	50	39.46	3.411	.482
Judo	50	43.12	2.939	.415
Taekwondo	50	41.48	3.394	.480
Wrestling	50	40.82	4.561	.645
Total	**300**	**40.86**	**4.372**	**.252**

As per the above table, the means and standard deviation scores of dominance of the players of six games as Baseball (M=40.90 ±5.08), Football (M=39.38 ±5.32), Handball (M=39.46±3.41), Judo (M=43.12±2.93), Taekwondo (M=41.48±3.39), Wrestling (M=40.82±4.56) respectively.

Table 4 Summary Table of ANOVA of dominance scores of inter-college female players of six games

	Sum of Sq.	df	Mean Sq.	F-value	p-value
Between	482.280	5	96.456	5.418**	.0001**
Within	5233.840	294	17.802		
Total	**5716.120**	**299**			

** Significant at 0.01 level

As per the above table, F value of 5.418 was found to be significant at 0.001 level of confidence. It means that there were significant differences in the mean scores of dominance among the female players of six games of inter-college level competition.

Table 5 Descriptive Statistics of Extroversion of inter-college female players of six games

Games	N	Mean	Std. Dev.	Std. Error
Baseball	50	36.26	5.201	.735
Football	50	35.12	6.215	.879
Handball	50	33.96	4.742	.670
Judo	50	37.24	4.627	.654
Taekwondo	50	37.32	5.463	.772
Wrestling	50	36.32	5.242	.741
Total	**300**	**36.03**	**5.362**	**.309**

As per the above table, the means and standard deviation scores of extroversion of the female players of six games as Baseball (M=36.26±5.20), Football (M=35.12±6.21), Handball (M=33.96±4.74), Judo (M=37.24±4.62), Taekwondo (M=37.32±5.46), Wrestling (M=36.32±5.24) respectively.

Table 6 Summary Table of ANOVA of Extroversion scores of inter-college female players of six games

	Sum of Sq.	Df	Mean Sq.	F-value	p-value
Between	418.897	5	83.779	3.011**	.011**
Within	8179.700	294	27.822		
Total	**8598.597**	**299**			

** Significant at 0.01 level

As per the above table, F value of 3.011 was found to be significant at 0.01 level of confidence. It means that there were significant differences in the mean scores of extroversion among the female players of six games of inter-college level competition.

Table 7 Descriptive Statistics of Conventionality of inter-college female players of six games

Games	N	Mean	Std. Dev.	Std. Error
Baseball	50	36.02	4.027	.569
Football	50	34.24	4.684	.662
Handball	50	33.62	3.932	.556
Judo	50	36.50	3.897	.551
Taekwondo	50	35.60	4.342	.614
Wrestling	50	36.24	5.392	.762
Total	**300**	**35.37**	**4.503**	**.260**

As per the above table, the means and standard deviation scores of conventionality trait of personality of the female players of six games were as Baseball (M=36.02 ±4.02), Football (M=34.24 ±4.68), Handball (M=33.62±3.93), Judo (M=36.50±3.89), Taekwondo (M=35.60±4.34), Wrestling (M=36.24±5.39) respectively.

Table 8 Summary Table of ANOVA of Conventionality scores of inter-college female players of six games

	Sum of Sq.	Df	Mean Sq.	F-value	p-value
Between	342.430	5	68.486	3.519**	.004**
Within	5721.500	294	19.461		
Total	**6063.930**	**299**			

** Significant at 0.01 level

As per the above table, F value of 3.519 was found to be significant at 0.001 level of confidence. It means that there were significant differences in the mean scores of conventionality among the female players of six games of inter-college level competition.

Table 9 Descriptive Statistics of Self-Concept of inter-college female players of six games

Games	N	Mean	Std. Dev	Std. Error
Baseball	50	39.32	4.829	.682
Football	50	37.24	6.364	.900
Handball	50	36.72	5.213	.737
Judo	50	39.92	5.329	.753
taekwondo	50	39.06	4.316	.610
Wrestling	50	40.28	5.182	.732
Total	**300**	**38.75**	**5.365**	**.309**

As per the above table, the means and standard deviation scores of Self-Concept trait of personality of the female players of six games were as Baseball (M=39.32 ±4.82), Football (M=37.24 ±6.36), Handball (M=36.72±5.21), Judo (M=39.92± 5.32), Taekwondo (M=39.06±4.31), Wrestling (M= 40.28±5.18) respectively.

Table 10 Summary Table of ANOVA of Self-Concept scores of inter-college female players of six games

	Sum of Sq.	Df	Mean Sq.	F-value	p-value
Between	526.577	5	105.315	3.832**	.002**
Within	8080.660	294	27.485		
Total	**8607.237**	**299**			

** Significant at 0.01 level

As per the above table, F value of 3.832 was found to be significant at 0.001 level of confidence. It means that there were significant differences in the mean scores of self-concept among the female players of six games of inter-college level competition.

Table 11 Descriptive Statistics of Mental toughness of Inter- college female players of six games

Games	N	Mean	St. Dev.	St. Error

Baseball	50	40.66	5.15320	.72877
Football	50	39.84	6.40268	.90548
Handball	50	39.56	4.73442	.66955
Judo	50	40.80	3.81725	.53984
Taekwondo	50	42.24	4.75764	.67283
Wrestling	50	40.36	4.62363	.65388
Total	**300**	**40.57**	**5.00877**	**.28918**

As per the above table, the mean and standard deviation scores of mental toughness trait of personality of the female players of six games as Baseball (M=40.66 ±5.15), Football (M=39.84 ±6.40), Handball (M=39.56±4.73), Judo (M=40.80±3.81), Taekwondo (M=42.24±4.75), and Wrestling (M= 40.36±4.62) respectively.

Table 12 Summary Table of ANOVA of mental toughness scores of inter-college female players of six games

	Sum of Sq.	**Df**	**Mean Sq.**	**F-value**	**p-value**
Between	222.337	5	44.467	1.796	.113
Within	7278.900	294	24.758		
Total	**7501.237**	**299**			

As per the above table, F value of 1.796 was not found out to be significant at any level of confidence. It means that there were not any significant differences in the mean scores of mental toughness of female sports-persons of inter-college level competition among the six games, i.e.; baseball, football, handball, judo, taekwondo and wrestling.

Table 13 Descriptive Statistics of Emotional stability of Inter-college female players of six games

Games	**N**	**Mean**	**Std. Dev.**	**Std. Error**
Baseball	50	41.72	5.063	.716
Football	50	39.32	5.960	.842
Handball	50	38.94	5.403	.764
Judo	50	43.28	4.712	.666
Taekwondo	50	42.20	5.194	.734
Wrestling	50	40.70	5.195	.734
Total	**300**	**41.02**	**5.448**	**.314**

As per the above table, the mean and standard deviation scores of emotional stability trait of personality of the female players of six games were as Baseball (M=41.72 ±5.06), Football (M=39.32 ±5.96), Handball (M=38.94±5.40), Judo (M=43.28±4.71), Taekwondo (M=42.20±5.19),and Wrestling (M= 40.70±5.19) respectively.

Table 19 Summary Table of ANOVA of Emotional Stability scores of inter-college female players of six games

	Sum of Sq.	Df	Mean Sq.	F-value	p-value
Between	715.427	5	143.085	5.155**	.0001**
Within	8160.360	294	27.756		
Total	**8875.787**	**299**			

** Significant at 0.01 level

As per the above table, F value of 5.155 was found to be significant at 0.001 level of confidence. It means that there were significant differences in the mean scores of emotional stability among the female players of six games of inter-college level competition.

CONCLUSION : The differences between female sports-persons of ball games and combat games are found only on dominance and emotional stability, where the combat games are more dominant and emotional stable than their ball games counterparts. But in case of college level competition, female sports-persons of ball and combat games differ on almost all traits of personality, where again combat games players are found to be better on the six traits of personality and ball games players are more internally and externally oriented. Here personality traits of female sports-persons have been studied. There are many other psychological variables which need to be investigated for the players e.g.; self-efficacy, self esteem, emotional intelligence and self-concept etc.

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Effect Of Strength Endurance And Concurrent Training On Muscular Endurance Among Football Men Players

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Abstract:
The present study was undertaken to analyze the effect of strength endurance and concurrent training on muscular endurance among football players. The investigator has selected N=48 men inter collegiate level football players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-28 years. The subjects chosen for the study were divided into four equal groups n=12 and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. STG were given to group 'A' ETG were given to group 'B' CCTG were given to group 'C' and the 'CG' control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting sit up test. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that STG, ETG and CCTG of muscular endurance significantly improved than control group. CCTG show better performance than STG and ETG. STG show better performance than ETG.
Keywords: – Concurrent training – Muscular endurance.

Introduction:

Sports training based on scientific knowledge, are a pedagogical process of sports perfection through which systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsman to high and highest performance (Sinku 2011). The aims of the sports training improvement of physical fitness, acquisition of motor skills, improvement of tactical efficiency and education and improvement of mental capabilities.

Concurrent training refers to training program that includes endurances exercises (eg continuous run etc) and resistance exercises. For example concurrent training combination of weight training and continuous running, swimming, rowing, cycling on a regular basis with in the same training session, on the same day, with in the same training program. The concurrent training effect to balance cardio and strength training.

Endurance training refers repetitive or continuous physical exercises chiefly aerobic metabolism to complete a predetermined amount of work (eg > 5 minutes activities. Resistance training means physical exercises over come against load (eg weight) to build and maintenance of muscle mass, muscular strength and muscular power. Concurrent means endurance versus strength training.

Statement of the Problem:

The purpose of the study was to investigate the "Effect of strength endurance and concurrent training on muscular endurance among football men players.

Methodology:

The purpose of this study was to find out the effect of strength endurance and concurrent training on muscular endurance among football men players. To achieve the purpose investigator has selected N=48 men inter collegiate level football players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-28 years. The subjects chosen for study was divided into four groups and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. STG were given to group 'A' ETG were given to group 'B' CCTG were given to group 'C' and control group D. Each groups consisted of twelve football players. Control group 'D' was restricted to participate in any of the training programme other than their regular activities. Training was given three days in a week for twelve weeks to STG and ETG, six days training per week to CCTG. The subject were tested on muscular endurance at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the muscular endurance sit-ups test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on sit-ups data have been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table – I:Analysis of Covariance for muscular endurance on Pre Test and Post Test Data of Experimental and Control Groups (In Numbers)

Tests	STG	ETG	CCTG	CG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test Mean	25.41	25.91	26.25	26.66	**B**	10.06	3	3.35	0.253
SD	3.77	3.08	3.51	4.09	**W**	582.75	44	13.24	
Post Test Mean	33.41	31.08	36.41	25.25	**B**	804.91	3	268.30	26.29*
SD	2.50	2.57	3.14	4.24	**W**	449.00	44	10.20	
Adjusted Post Test Mean	33.93	31.19	36.26	24.77	**B**	882.73	3	294.24	155.17*
					W	81.54	43	1.89	

***Significant level fixed at 0.05.**

The table value for 0.05 level of significant with 3 & 44 and 3 & 43 degree of freedom are 2.82 and 2.82 respectively.

The above table-I shows that there is a significant difference on muscular endurance among the four groups such as strength training group (STG), endurance training group (ETG), concurrent training group (CCTG). Since the calculated 'F' value required being significant at 0.05 level for 3, 44 d/f and 3, 43 are 2.82 and 2.82, but the calculated values of muscular endurance post and adjusted posttest 'F' values are 26.29 and 155.17 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II:The Scheffes Test for the Mean Differences Between Paired Mean of Groups on Muscular endurance

Mean Value				Mean Difference	C.I
STG	ETG	CCTG	CG		
33.93	31.19	-	-	2.74*	1.037
33.93	-	36.26	-	2.33*	
33.93	-	-	24.77	9.16*	
-	31.19	36.26	-	5.07*	
-	31.19	-	24.77	6.42*	
-	-	36.26	24.77	11.49*	

Significant at 0.05 level of confidence

The above table II shows that the adjusted post-test mean differences values between strength training group (STG) and endurance training group (ETG), strength training group (STG) and concurrent training group (CCTG), strength training group (STG) and control group (CG), endurance training group [ETG] and concurrent training group [CCTG], endurance training group [ETG] and control group [CG] and concurrent training group [CCTG] and control group [CG] were 2.74, 2.33, 9.16, 5.07, 6.42 and 11.49 respectively on muscular endurance, which were greater than the required confidence interval value 1.037 at 0.05 level of confidence. It was concluded from the above table that the three experimental groups were found to be significant when compared with control group.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the experimental groups and control group on muscular endurance were presented in figure 1.

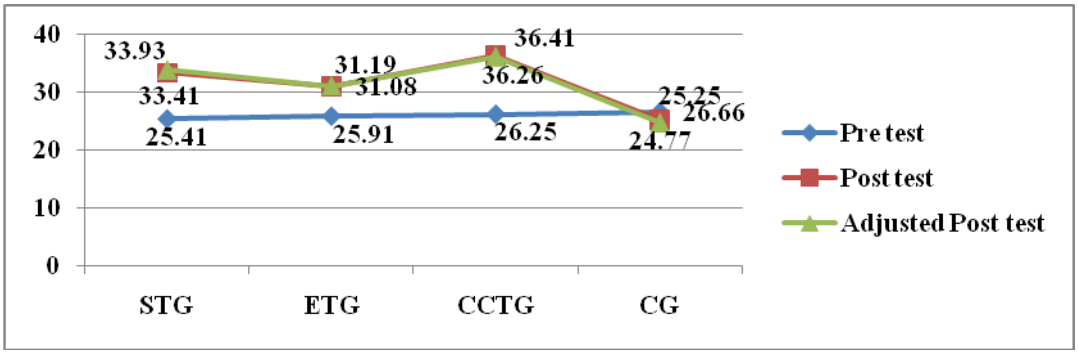

Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on muscular endurance

Discussion on Hypothesis:

In the first hypothesis says that there may be significant difference between experimental group and control group on muscular endurance. The result of the study shows that there were significant differences exist between experimental group and control group. Hence the research hypothesis is accepted.In second hypothesis mention that CCTG will be superior than the isolated training group STG and ETG. The result of the study shows that CCTG football players shows better performance than STG and ETG football players. Hence research hypothesis accepted.

Discussion and Findings:

The result of the study reveals that after the twelve weeks of strength training group (CTG), endurance group training (ETG) and concurrent training group (CCTG) result in significantly improved muscular endurance. The finding of the study are aligned with the following studies *Sijio (2019),* Manikandan (2014), Nilesh (2010) and Aditya (2014) as an effective method to improve muscular endurance.

Conclusions:

The result of this study concluded that concurrent training group [CCTG] shown better enhancement in muscular endurance performance when compared with strength training group [STG] and endurance training group [ETG]. Further it was concluded that strength training group [STG] shown better enhancement in muscular endurance performance when compared with endurance training group [ETG].

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Effect Of Strength Endurance And Concurrent Training On Shooting Among Football Men Players

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Abstract:
The present study was undertaken to analyze the effect of strength endurance and concurrent training on shooting among football players. The investigator has selected N=48 men inter collegiate level football players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-28 years. The subjects chosen for the study were divided into four equal groups n=12 and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. STG were given to group 'A' ETG were given to group 'B' CCTG were given to group 'C' and the 'CG' control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting Mor Christian shooting test. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that STG, ETG and CCTG of shooting significantly improved than control group. CCTG show better performance than STG and ETG. STG show better performance than ETG.
Keywords: – Concurrent training – Shooting.

Introduction:
Combining training of muscle strength and cardio respiratory fitness within a training cycle result increases athletic performance, physical fitness and motor fitness. Concurrent training develop motor young athletes may specifically benefit from endurance training (ET) and strength training (ST) during long-term development of sport-specific athletic performance. Indeed, high levels of muscular strength and aerobic endurance are key determinants of success in many sports (Baar, 2014; Bompa and Buzzichelli, 2015). Strength-training associated with concurrent high-resistance low-repetition exercises to increase the force output ability of skeletal muscle (Sale et al., 1990).

Concurrent training inhibit the development endurance-training programs utilize low-resistance high-repetition exercises such as running or cycling to development of aerobic fitness when compared to either increase maximum oxygen uptake (VO_2) (Tanaka & Swensen 1998). Physical education practical classes often concurrently perform strength and endurance training (Santo et al., 2012). in an attempt to reach different physical fitness goals at the same time (Anderson 1995).

Statement of the Problem: The purpose of the study was to investigate the "Effect of strength endurance and concurrent training on shooting among football men players.

Methodology:The purpose of this study was to find out the effect of strength endurance and concurrent training on shooting among football men players. To achieve the purpose investigator has selected N=48 men inter collegiate level football players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-28 years. The subjects chosen for study was divided into four groups and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. STG were given to group 'A' ETG were given to group 'B' CCTG were given to group 'C' and control group D. Each groups consisted of twelve football players. Control group 'D' was restricted to participate in any of the training programme other than their regular activities.

Training was given three days in a week for twelve weeks to STG and ETG, six days training per week to CCTG. The subject were tested on shooting at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the shooting Mor Christian shooting test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on shooting data have been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table - IAnalysis of Covariance for shooting on Pre Test and Post Test Data of Experimental and Control Groups (In Numbers)

Tests	STG	ETG	CCTG	CG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test Mean	62.58	62.00	66.50	65.83	B	184.89	3	61.63	0.478
SD	18.72	7.38	7.29	7.55	W	5669.58	44	128.85	
Post Test Mean	97.33	70.66	107.50	60.66	B	17426.91	3	5808.97	105.05*
SD	7.49	3.74	9.46	7.83	W	2433.00	44	55.29	
Adjusted Post Test Mean	97.78	71.27	106.88	60.23	B	17276.20	3	5758.73	123.07*
					W	2011.97	43	46.79	

*Significant level fixed at 0.05.

The table value for 0.05 level of significant with 3 & 44 and 3 & 43 degree of freedom are 2.82 and 2.82 respectively.

The above table-I shows that there is a significant difference on shooting among the four groups such as strength training group (STG), endurance training group (ETG), concurrent training group (CCTG). Since the calculated 'F' value required being significant at 0.05 level for 3, 44 d/f and 3, 43 are 2.82 and 2.82, but the calculated values of shooting post and adjusted posttest 'F' values are 105.05 and 123.07 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II:The Scheffes Test for the Mean Differences Between Paired Mean of Groups on Shooting

Mean Value				Mean Difference	C.I
STG	ETG	CCTG	CG		
97.78	71.27	-	-	26.51*	8.09
97.78	-	106.88	-	9.10*	
97.78	-	-	60.23	37.55*	
-	71.27	106.88	-	35.61*	
-	71.27	-	60.23	11.04*	
-	-	106.88	60.23	46.65*	

**Significant at 0.05 level of confidence*

The above table II shows that the adjusted post-test mean differences values between strength training group (STG) and endurance training group (ETG), strength training group (STG) and concurrent training group (CCTG), strength training group (STG) and control group (CG), endurance training group [ETG] and concurrent training group [CCTG], endurance training group [ETG] and control group [CG] and concurrent training group [CCTG] and control group [CG] were 26.51, 9.10, 37.55,35.61, 11.04 and 46.65 respectively on shooting, which were greater than the required confidence interval value 8.09 at 0.05 level of confidence. It was concluded from the above table that the three experimental groups were found to be significant when compared with control group.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the experimental groups and control group on shooting were presented in figure 1.

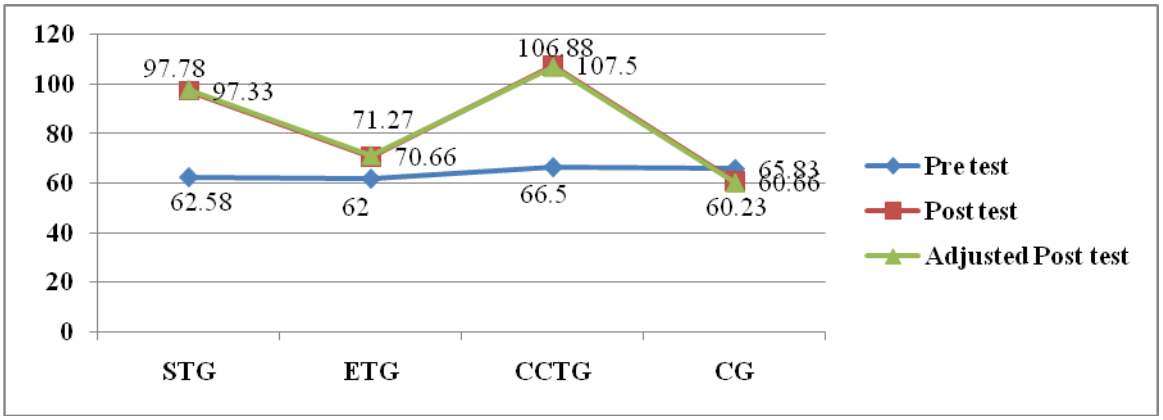

Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on shooting.

Discussion and Findings:

The result of the study reveals that after the twelve weeks of strength training group (CTG), endurance group training (ETG) and concurrent training group (CCTG) result in significantly improved shooting. The finding of the study are aligned with the following studies Binthu Madhavan (2014) , Abolghasem et al., (2014), Aditya (2014), Sudhakara (2013) and Madhankumar (2012) as an effective method to improve shooting.

Conclusions:

Shooting scores resulted that concurrent training group [CCTG] was outperforming when comparison with strength training group [STG] and endurance training group [ETG]. Further it was concluded that strength training group [STG] out performing endurance training group [ETG].

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A study on Analyze the job stress and job satisfaction of Physical Education Teachers working in high schools of Kodagu, Karnataka

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INTRODUCTION

Stress is derived from the Latin word "Stringer" which means to draw tight. Stress is a dynamic condition in which an individual is confronted with an opportunity, demand or resource related to what the individual desires and for which the outcome is perceived to be both uncertain and important. When a person is contented with his job as a mean of livelihood for his performance and expectation, then his output is optimum, otherwise it leads to stress. The nonspecific response of the body to any demand made upon it in order to maintain physiological equilibrium, psycho-social stimulate are probably the common most stress affecting human beings. Job stress is a common problem across occupations and it impacts job performance. Although most contemporary studies highlight the negative effect of stress on job performance (distress), mild stress is known to enhance an employee's performance. It is necessary to take a holistic picture of antecedents to job stress by including the effects of personality, organizational factors and the work- family interaction in the perception of job stress. When you are able to identify conditions and situations that lead to these types of responses, you'll know what work stress means to you. Hans Selye, leading stress expert says "It's not stress that kills us; it is our reaction to it''.

METHODOLOGY

The purpose of the present study was to bring to light the A study of job stress and satisfaction among physical education teachers working in government, private and public schools of Kodagu district. The population of the study is composed of current teachers employed in High Schools. There are 20 teachers who acted as respondents to gather relevant and substantial Data.

Data Collection to gather the necessary information from the teachers, the researchers asked the Administrative Office of High School for their population. Thus, the researchers formulated the sample size from the given information.

ANALYSIS AND INTERPRETATION OF DATA

The sources that are collected by the researcher are being dealt carefully for analysis. This research study was aimed at identification of job stress and work satisfaction of physical education high school teachers of Kodagu district. Data was collected for both male and female high school physical education teachers.

Table 1a.The response score of each of the parameters in the negative questions on the Stress scale.

Q. No.	Question	Always	Frequently	Sometimes	Rarely	Never
1	Fed up same routine day in & out	6	6	5	3	0
3	Unable to carry work deadlines	0	5	8	5	2
5	Job lacks opportunities to utilize skills	0	3	9	7	1
7	Difficult to concentrate on my work	1	7	4	3	5
9	Waiting for the day when I can relax	2	4	5	8	1
13	Fed up to meet deadlines at all times	1	5	0	6	8
16	Most of the time force myself to start work	3	4	5	7	1
17	Sacrifice my values in meeting obligations	0	4	10	5	1
18	Discomfort due to segregation by role	2	5	6	6	1
20	Baffled with the contradictory instruction	1	1	14	4	0
21	Concerned due to poor information in Flow	1	10	4	4	1
23	My contributions taken very lightly	1	8	5	4	2
24	Employment interfere with my family roles	1	3	6	9	1
27	Not clear as to work expected from me	2	6	5	5	2
30	Constrained in my role fulfilment	3	4	6	5	2
39	Inability to cope up with level of excellence	6	2	6	4	2

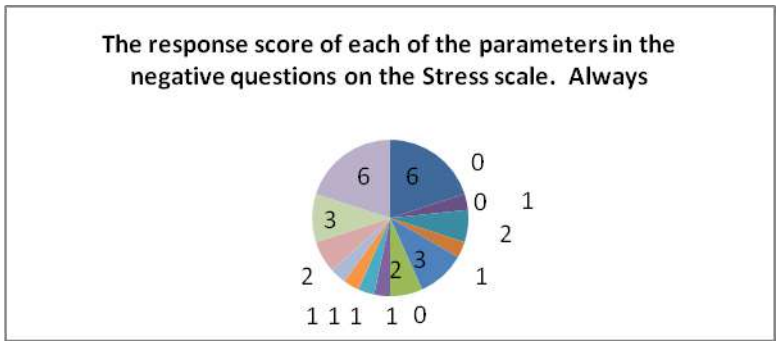


Table 1b *The response score of each of the parameters in the positive questions on the Stress scale*

Q. No.	Question	Always	Frequently	Sometimes	Rarely	Never
2	Working condition satisfactory	2	6	8	4	0
4	Manage to cope up well with	2	4	5	8	1
6	Time passes without my notice	1	5	6	6	2
8	Work at my own pace peacefully	2	5	5	5	3
10	Norms and expectations	3	4	8	4	1
11	Look forward to face another day	1	3	6	8	2
12	Enjoy working long hours at my end	3	4	7	5	1
14	I love when my hands are full	1	6	7	6	0
15	Complex nature of my work is easy	1	7	6	6	0
19	My role is adequately planned	15	4	1	0	0
22	Able to use my training and	2	3	6	9	0
25	People understand my priorities	3	5	9	1	2
26	Sufficient mutual cooperation exist	2	2	9	6	1
28	Know peoples' expectations of me	10	4	4	0	2
29	Exposed to opportunities	1	5	7	5	1
31	My presence is felt in the	4	4	7	5	0
32	Enjoy fulfilling my responsibilities	2	2	11	5	0
33	Seek suggestions from my	0	5	5	7	3
34	Happy with fewer responsibilities	5	4	4	5	2
35	Gives exposure to latest technology	2	3	8	7	0
36	Take up challenging jobs	1	9	3	4	3
37	Ambition give me extra energy	3	6	3	6	2
38	Work goes as per plan	2	0	7	7	4
40	Success and gender bear no	4	3	7	6	0
41	Earns me respect from my colleagues	1	6	4	8	1

There are slightly more stressful issues than non-stressful one, but on a majority of issues the physical education teachers cope up well with the demands of the job. Therefore on the whole as indicated in tables 1a and 1b, the physical education teachers are marginally stressed in their jobs.

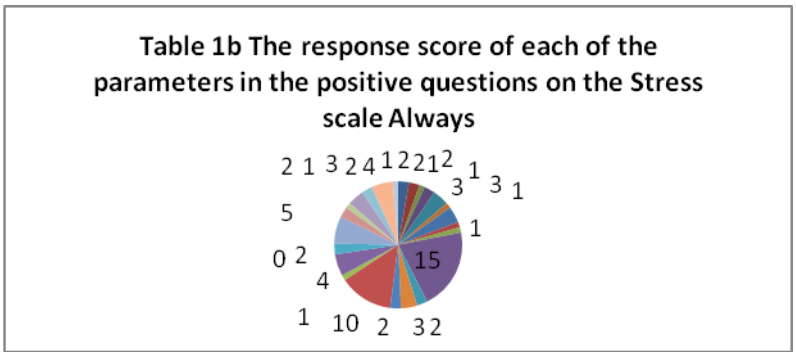
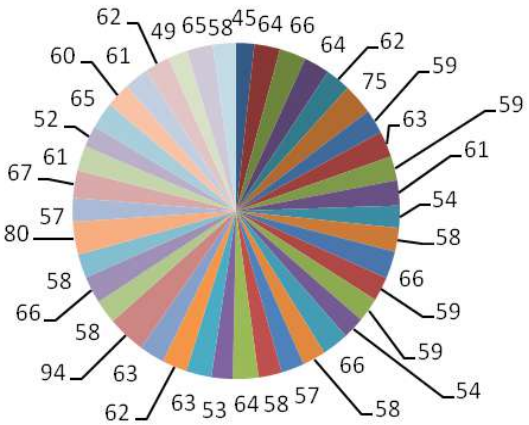


Table 2:The Percentage rating score of each of the parameters in the Stress scale

Question	Percentage rating
Fed up same routine day in & out	45
Unable to carry work deadlines	64
Job lacks opportunities to utilize skills	66
Difficult to concentrate on my work	64
Waiting for the day when I can relax	62
Fed up to meet deadlines at all times	75
Most of the time force myself to start work	59
Sacrifice my values in meeting obligations	63
Discomfort due to segregation by role	59
Baffled with the contradictory instruction	61
Concerned due to poor information in Flow	54
My contributions taken very lightly	58
Employment interfere with my family roles	66
Not clear as to work expected from me	59
Constrained in my role fulfillment	59
Inability to cope up with level of excellence	54
Working condition satisfactory	66
Manage to cope up well with demands	58
Time passes without my notice	57
Work at my own pace peacefully	58
Norms and expectations encourages me	64
Look forward to face another day	53
Enjoy working long hours at my end	63
I love when my hands are full	62
Complex nature of my work is easy	63
My role is adequately planned	94
Able to use my training and expertise	58
People understand my priorities	66
Sufficient mutual cooperation exist	58
Know peoples' expectations of me	80
Exposed to opportunities	57
My presence is felt in the organization	67
Enjoy fulfilling my responsibilities	61
Seek suggestions from my Colleagues	52
Happy with fewer responsibilities	65
Gives exposure to latest technology	60
Take up challenging jobs enthusiastically	61
Ambition give me extra energy	62
Work goes as per plan	49
Success and gender bear no association	65
Earns me respect from my colleagues	58

Figure 2. The Percentage rating score of each of the parameters in the Stress scale.

Table 2 The Percentage rating score of each of the parameters in the Stress scale Percentage rating



The average of percentage rating point for the stress scale is 61.2 which is on the side of less stress. Stress is required for optimum performance and to get the best out of a person. So this stress is near to perfect to get the best out of the physical Education teachers. So one can come to a safe assumption that, though there is no situation which is not perfectly stressful except for an odd one, more than 90 percent of the questions lie in the range of 60% which is fair and conducive to extract useful work from the respondents.

Table 3*The response score of each of the parameters in the job satisfaction scale*

Sl. No.	Question No.	Extremely satisfied	Moderately satisfied	Mildly satisfied	Mildly dissatisfied	Moderately dissatisfied	Extremely dissatisfied
1	Amount of job security	18	45	12	1	2	0
2	Rules and policies of my job	0	10	28	2	4	0
3	Amount of salary	6	25	32	1	4	0
4	Benefits plans with my job	6	10	24	1	6	2
5	Future promotion chances	24	20	12	1	4	1
6	Working conditions of job	0	5	36	1	8	2
7	Enjoyable nature in job	0	35	16	1	8	1
8	Recognition received in job	18	5	16	9	12	3
9	Opportunity work with people	24	25	24	3	6	1
10	Technical competence of superior	0	5	24	2	8	0
11	Opportunity to achieve excellence in work	0	30	20	1	4	2
12	Consideration of immediate superior	6	20	16	3	2	0
13	Independence in job	6	10	40	1	2	1
14	Opportunity to acquire higher skill	0	35	16	2	0	1
15	Amount of salary receive work	12	25	36	9	2	0
16	Overall consideration in job	18	0	24	2	2	2

Table 3 indicates the number of scores for job satisfaction, the left side scores indicating positivity. In questions such as rules and policies with job, benefit plans with job, independence in job, opportunity to acquire higher skill and overall consideration in job (Questions 2,4,10,14,16 respectively), the respondents are on the neutral side of the scale, while on the rest of the questions the number of responses is on the satisfied side of the scale (Figure 3). But the satisfaction with technical competence of the supervisor is slightly leaning towards the negative side.

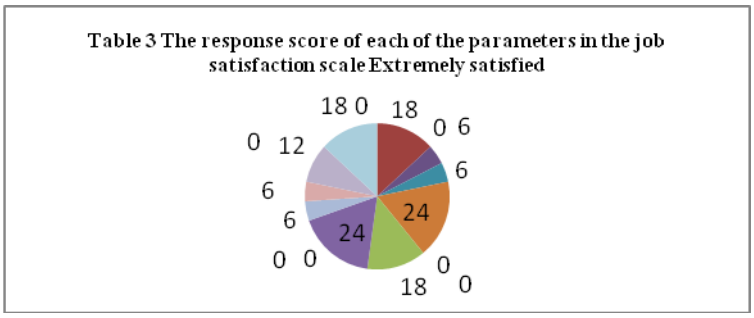


Figure 3. The response score of each of the parameters in the job satisfaction scale.

Table 4*The Percentage rating score of each of the parameters in the Job satisfaction scale*

Sl.No	Questions	Percentage Rating
1	Amount of job security	74
2	Rules and policies of my job	58
3	Amount of salary	66
4	Benefits plans with my job	55
5	Future promotion chances	66
6	Working conditions of job	53
7	Enjoyable nature in job	60
8	Recognition received in job	53
9	Opportunity work with people	69
10	Technical competence of superior	53
11	Opportunity to achieve excellence in work	59
12	Consideration of immediate superior	62
13	Independence in job	62
14	Opportunity to acquire higher skill	63
15	Amount of salary receive work	70
16	Overall consideration in job	58

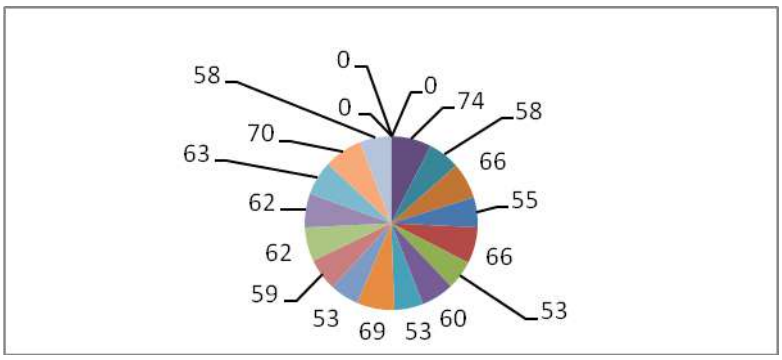


Table 4 indicates the percentage score of the job satisfaction of the respondents. Except for technical expertise of the supervisor, recognition received, working conditions, benefit plans the satisfaction rating is just edging towards the positive side, while on questions like job security, salary, promotion the respondents are adequately satisfied. On the whole as indicated in Figure 4 one can safely assume that the respondents are satisfied at their jobs.

Table 4: The Statistical values of relationship of job variables

Job Variable	Mean	Standard deviation	Correlation
Job stress	60.27	3.29	0.33
Job satisfaction	61.46	7.35	

Table 4, shows that mean value of physical education teachers in job stress is 60.78 and job satisfaction is 61.46.Standard deviation of physical education teachers in job stress 3.00 and job satisfaction is 7.35.The Correlation coefficient is 0.33 which is above the table value for df 38 (0.30). Therefore one can say that the relation between job satisfaction and job stress is significantly on the positive side, though marginally so.Therefore the null hypothesis is rejected and research hypothesis is accepted.

Summary

The purpose of the study was to know the amount of job stress and work satisfaction of physical education high school teachers of Kodagu district. An attitude includes opinion views, the judgement that is often formed by an individual might be negative and positive opinion towards their stress and satisfaction in the job. The study helps us to know the job stress and work satisfaction of high school teachers toward physical education and sports in Kodagu district it also helps to find out the opinion of the teachers about school and games. The study was delimited to high schools in Kodagu District and information gathered from 20 samples. The information regarding interest in the sports and games participation and other details furnished by, the teachers of various high schools in Kodagu district. The study also speaks about methodology of how the data was collected from the teachers of various high schools of Kodagu district. After collecting the questionnaires from the male and female teachers, the researcher has analyzed the data in percentile method. The investigator has made sincere attempt to bring out the real condition.

RECOMMENDATIONS

The following recommendations have been given by the investigator after careful analysis of teachers towards their job satisfaction and job stress.

1. Time to time professional and special training should be provided to the teachers regarding their particular job and the importance of the same.

2. Government bodies should check the professional quality of the teachers not only by seeing the degree or certificate but also by their practical talent.
3. Teachers should provide good salary, so they can give hundred percent in their profession without their tension.
4. Affirmative action should be put in place to encourage more female teachers to take up school management positions.
5. The school environment should be made teacher friendly both in hardware and software.
6. Gender issues and school management in relation to job satisfaction and job stress.
7. Teachers should provide leadership training to become a good leader as well as teacher because they are the one who can give a proper shape of a child's mind and also the culture of the society.
8. Proper residential facilities should be provided to the teachers those who are working out of their home town or locality.
9. Unwanted political pressure should not impose to the teachers because it will directly or indirectly hamper the children in the schools.
10. Higher qualification and job retention in the teaching profession.

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Incidence of Bronchopulmonary Dysplasia in Preterm Infantsat Haiphong Children Hospital in 2017 – 2018

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Abstract

Objectives. The study was done to estimate the incidence of Bronchopulmonary Dysplasia in preterm infants in the Intensive Care Unit and Neonate Department of Haiphong Children Hospital in 2017-2018 and describe some associated factors with Bronchopulmonary Dysplasia in studied subjects.**Subjects and methods.** Targeted subjects were composed of 305 pair of preterm infants and their mother. The method was a case-series study. The data collection included history taking, heart ultrasound, and the identification of BPD cases. Bronchopulmonary Dysplasia case was defined by using criteria from American Thoracic Society in 2016 that was “Treatment with oxygen > 21% for at least 28 d plus”. Some risk factors such as sex, birth weight, gestational age, Apgar score, perinatal infection of mother, surfactant use in the intensive care unit, maternal antenatal corticosteroid use, and patent ductus arteriosus were based on maternal history taking, daily taking care of preterm, and heart ultrasound. Univariate regression was used to identify risk factors. When OR >1 and lying between 95%CI, this risk factor associated with BPD.**Results.** The incidence of BPD was 16.4% in which 47.1% were encountered in preterm infants less than 32 weeks of gestational age (GA) and 56.1% preterm infants with birth weight less than 1500 g. Some significant risk factors were GA less than 32 wks, birth weigh less than 1500 g, patent ductus arteriosus (PDA), surfactant use, and perinatal infection of mother. Sex, Apgar score <7, non-antenatal maternal corticosteroid use was not significantly associated with BPD.**Conclusions.** Bronchopulmonary Dysplasia was clinically a common disease in preterm infants. In daily practice in neonatology, doctors need to recognize some associated factors of this disease so that they can try to avoid and eliminate these factors for not developing BPD in premature infants. **Keywords. Incidence, Bronchopulmonary Dysplasia, Preterm infant, Risk factors etc.**

Introduction.

Nowadays, a lot of advances in neonatology permit us to do resuscitation, support, and survive more preterm infants. Among these preterm infants develop a new condition called Bronchopulmonary dysplasia. Although we know the pathology, pathogenesis of BPD, the use of antenatal corticosteroids, postnatal surfactant, improved respiratory support technology, and enhanced nutritional strategies, the risk of developing long-term respiratory morbidity remains very high.

The incidence of BPD is increasing because the survival of extreme premature infants improves. According to Lauren M. Davidson and Sara K. Berkelhamer [9], BPD has stably affected 40% preterm infants less than 28 weeks of gestational age for past decades. Only in United State, yearly, there are 10.000 to 15.000 new cases.

Preterm infants with severe classification of BPD was associated with poorer outcomes. Compared with preterm infants with mild or moderate BPD, preterm infants with severe BPD performed more poorly on IQ tests, Psychomotor Development Index, and language measures at age 3 years and performance IQ and perceptual organization at age 8 years. Severity of BPD was not associated with choice of medical

management but was related to educational interventions. Preterm infants with severe BPD received more special education services than did preterm infants with mild BPD [18].

Recently, Haiphong Children Hospital has put in practice many advances in the field of resuscitation, respiratory support such as CPAP, HFO as well as the use of antenatal corticosteroids and surfactant but the incidence and associated factors of BPD have not studied jet. From this fact, we carried out this study to estimate the incidence and find out some risk factors of BPD that help doctors improve the prognosis of BPD in the clinics.

Subjects and methods

Research design

It was a cross-sectional study.

Research subjects

During the study period, a cumulative sample size of 305 pairs of preterm infant and their mother were enrolled in this study. The sample size was selected by using purpose sampling method. It meant that preterm infants met inclusion criteria were selected for the study.

Inclusion/exclusion criteria

- Preterm infants were hospitalized in the Intensive Care Unit and in the Neonate Department of Haiphong Children Hospital from 01/01/2017 to 31/12/2018 and their gestational age was less than 37 weeks.

- Being diagnosed with BPD based on “American Thoracic Society 2016”: Treatment with oxygen > 21% for at least 28 d plus after birth to maintain $SpO_2 \geq 85\%$ [14].

- Preterm infants older than ≥ 37 weeks, preterm infants being treated $FiO_2 \geq 21\%$ and/or CPAP due to extra pulmonary diseases, preterm infants with severe malformations/anomalies were eliminated from the study.

Data collection procedures

General data such as hour age, sex, birthweight, gestational age, types of birth, living place of participants were done by taking medical history, studying thoroughly medical record, and performing the heart ultrasound. Furthermore, we strictly followed the infant treatment process to choose real case of BPD that met inclusion criteria.

BPD was defined as a preterm infant with treatment with oxygen > 21% for at least 28 d plus after birth to maintain SpO_2 ≥ 85% [14].

Definition of some risk factors: Sex of subjects (male/female), GA <32 Wks and ≥ 32 wks, Birthweight <1500 g and ≥ 1500g, PDA confirmed by heart ultrasound after 2 wks (Yes/no), Surfactant use (No/yes), Apgar score <7 (Yes/no), Perinatal Maternal Infections (early rupture of amniotic fluid, fever, maternal tachycardia, fetal tachycardia, uterine tenderness, foul-smelling amniotic fluid, and/or purulent cervical discharge) (Yes/no), Antenatal corticosteroid use (Yes/no). Heart ultrasound was performed in the imaging center of Haiphong Children Hospital.

Necessary information from study subjects were collected into an already designed medical record form.

Data analysis

Descriptive analysis and univariate regression were carried out in the present research. Results in categorical measurements were presented in number (%). Chi-square was used to compare 2 incidences. P-value less than 0.05 was used to define statistical significance.

Odd (OR) was calculated to measure the association of a risk factor with BPD by using univariate regression.

OR = 1; no association, OR <1: inverse association, OR>1, lying in between 95%CI, lower extreme >1, there was a positive association of a risk factor with BPD.

SPSS software version 22.0 (SPSS Inc., Chicago, IL, USA) was used to analyze data.

Ethics

Study protocol was accepted by Haiphong Children Hospital (No 1039/QD-YDHP) and approved by Scientific Research Ethics Committee (IRB). The parents or legal guardians of these infants gave informed consent after full explanation of the objectives of the study was provided. Each participant in the final sample was identified by assigning a number.

Results

1. The incidence of Broncho-pulmonary Dysplasia in preterm infants

1.1. Some features of preterm infants with Broncho-pulmonary Dysplasia

Table 1. Some features of preterm infants with Bronchopulmonary Dysplasia

Sex (n=305)	**Number (n)**	**Percentage (%)**
Males	**163**	**46.6**
Females	**142**	**53.4**
Gestational age (week) (n=305)		
< 28 wks	**5**	**1.6**
28-<32 wks	**68**	**22.3**
≥ 32 wks	**232**	**76.1**
Birth weight (g) (n=305)		

< 1000	**4**	**1.3**	
1000-<1500	**103**	**33.8**	
≥ 1500	198	64.9	
Types of childbirth (n=305)			
Vaginal births	185	60.7	
Caesarean sections	120	39.3	
Living place (n=305)			
Urban	133	43.6	
Rural	172	56.4	
Mean hour age on admission	$\overline{X}$	**SD**	
(n=305)	2.14	0.92	

Remarks. Among 305 preterm infants, males were 46.6%, GA less than 28 wks were 1,6%, GA 28-<32 wks were 22.3% and GA equal to and more than 32 wks were 76.1%. birth weight less than 1000gs were 1.3%, 1000-<1500gs were 33.8% and ≥ 1500gs were 64.9%. Vaginal births represented 60.7% and C-section were 39.3%. There were 56.4% preterm infants coming from rural areas and 43.6% coming from urban areas. Mean hour age on admission was 2.14 ± 0.92 hrs.

1.2. The incidence of bronchopulmonary dysplasia in preterm infants

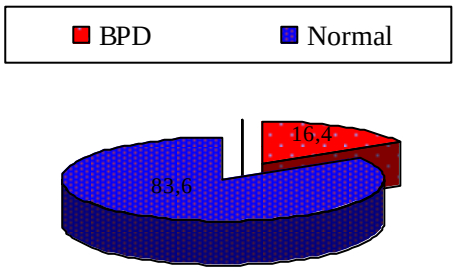

Figure 1. The incidence of Bronchopulmonary Dysplasia among preterm infants (n=305)

Remarks. The incidence of Broncho-pulmonary Dysplasia accounted for 16.4% among 305 preterm infants.

Table 2. The incidence of Broncho-pulmonary Dysplasia regarding some features of preterm infants

Incidence of BPD regarding sex (n=305)	Number of studied preterm infants (n)	Number of BPD (n)	Incidence (%)	p
Males	163	32	19.6	>0.05
Females	142	18	12.7	
Prevalence of BPD regarding GA (n=305)				
<32 Wks	73	32	43.8	<0.001
≥ 32 Wks	232	18	7.8	
Incidence of BPD regarding Birth weight (g) (n=305)				
< 1000	4	1	25.0	<0.001
1000-<1500	103	32	31.1	
≥ 1500	198	17	8.6	
Incidence of BPD regarding living place (n=305)				
Urban	133	23	17.3	>0.05
Rural	172	27	15.7	

Remarks. There was not statistically significant difference of BPD incidences between sexes and between living places, but BPD incidences differed from GA groups and birthweight groups.

2. Some associated factors with BPD

Table 3. Some associated factors with BDP of preterm infants

Sex	BPD	OR	95%CI	p
Males (n=163	32	1.68	0.89-3.15	>0.05
Females (n=142)	18			
Gestational age (Wks)				
< 32 wks (n=73)	32	9.28	4.76-18.08	<0.05
≥ 32 wks (n=232)	18			
Birth weight (g)				
< 1500 (n=107)	33	4.75	2.49-9.05	<0.05
≥ 1500 (n=198)	17			
Patent Ductus Arteriosus				
Yes (n=141)	41	7.06	3.29-15.16	<0.05
No (n=164)	9			
Surfactant use				
No (n=69)	39	26.59	12.3-57.43	<0.05
Yes (n=236)	11			
Apgar score <7				
Yes (n=24)	6	1.76	0.67-4.77	>0.05
No (n=281)	44			

Remarks. Table 3 showed that the odds of preterm infants with gestational age less than 32 weeks was estimated to be 14 times the odds of preterm infants with gestational age more than or equal to 32 weeks. Similarly, the odds of preterm infants with birthweight less than 1500 g were 4.75, with patent ductus arteriosus 7.06, with surfactant use in the Intensive Care Unit 26.59.

Table 4. Some associated factors with BDP from mothers

Perinatal maternal infection	BPD	OR	95%CI	p
Yes (n=34	22	15.9	7.4-35.58	<0.05
No (n=271)	28			
Antenatal corticosteroid use				
Yes (n=114)	32	1.07	0.55-2.12	>0.05
No (n=191)	18			

Remarks.

Preterm infants whose mother had perinatal maternal infection the probability of being suffered from BPD increased 15.9 times than that of preterm infants whose mother were healthy with 95%CI from 7.4 to 35.58.

Discussions

1. The incidence of BPD in preterm infants

Figure 1 showed that the incidence of BPD accounted for 16.4% among 305 preterm infants in Haiphong Children for 2 years 2017 and 2018.

The incidence of BPD in our study was significantly lower than that of Bancalari E [2], Filippone M [2], Johnson AH, Peacock JL et al [13], Stoll BJ, Hansen NI et al [20], Tapia JL et al [21]. Their incidences of BPD ranged from 36.86% to 77.0%. The incidences of BPD increased when gestational age and birth weight of preterm infants reduced [10], [19].

According to Fanaroff AA et al [10], the common incidence of BPD in preterm infants less than 1500g at birth was 22.0% but the incidences of BPD regarding birthweight group as followed birth weight 501 – 750 g 46.0%; 751-1000 g 33.0%; 1001 – 1250 g 14.0%; and 1251 – 1500 g 6.0%.

The incidence of BPD in this study was quite low compared to the incidences of BPD in other research already above mentioned. This can be explained that a number of severe cases in our setting must be transferred to higher level setting that contributed to the reduction in our incidence of BPD in our study.

When investigating the incidences of BPD in preterm infants regarding to some particular features of study subjects, we didn't find any significant difference between sexes and among living place (p>0.05). But results of studies [11], [12], [16], showed that BPD affected more males than females. These authors explained the domination of male preterm infants due to sex imbalance in nationwide birth rate.

In 28-<32 wk group, the incidence of BPD was 47.1% higher than that of the incidence in group preterm being more than or equal to 32 weeks (7.8%). We had 5 preterm infants with less than 28 weeks of gestational age. But we didn't find any case who developed BPD. We estimated that among severe cases transferred to higher level hospital, indeed there were BPD cases. According to this result, the incidence of BPD in preterm infants reduced when gestational age increased. The difference of BPD incidence among gestational age groups

was statistically significant.

According to Authors such as Chuc Van Dang [6], Van Thanh Nguyen [22], Tapia JL et al [21] and Zofia Zysman-Colman et al [23], preterm infants with less than 32 weeks of gestational age were frequently suffered from acute respiratory failure due to hyaline membranes disease, immature lung that led to the development of BPD later. So early prematurity was a high risk of forming BPD in preterm infants.

Similarly, the birth weight of preterm infants increased, the incidence of BPD reduced. For example, in the group of preterm infants having birth weight less than 1000 g, the incidence of BPD was 25%, in 1000-<1500 g group 31.1%, and in more than or equal to 1500 g group 8.6%. The same explanation of high incidence of BPD in preterm infants can be applied in case of low birth weight in study subjects. The incidence of BPD among birth weight groups was statistically significant with $p<0.001$. Our remarks about the incidence of BPD regarding the birthweight corresponded to that of Van Thanh Nguyen [18].

2. Some associated factors of BPD

BPD is a multifactorial disease. Associated factors of BPD interleave to each other. It is difficult to identify key factors or additional ones. In this study we examined some associated factors we thought related to the development of BPD in preterm infants.

We introduced some statistically significant factors as followed (table 4).

BPD affected 43.8% preterm infants with gestational age less than 32 weeks higher than that of preterm infants with gestational age more than or equal to 32 weeks (7.8%). Preterm infants less than 32 weeks were more likely to suffer from BPD 9.28 times higher than that of preterm infants more than or equal to 32 weeks with 95%CI from 4.76 to 8.08 and $p<0.05$.

We thought that preterm infants less than 32 weeks had high capacity of suffering from acute respiratory failure. In the intensive care unit, these preterm infants got an intubation, a mechanical ventilation, an oxigenotherapy, and an emergency medicine use that facilitated them to develop BPD.

Authors like Altman M et al [1], Correia C [8], Khoshnood Shariati M [15] recognized that the incidence and the severity of acute respiratory failure increased when gestational age went down.

Basically, in preterm infants less than 34 weeks mainly less than 32 weeks, the lung cell type II was not able to produce enough surfactant that helped lung form a residual volume. This residual volume facilitated the respiration of preterm infants. A lack of surfactant, preterm infants contracted a syndrome called acute respiratory failure that was an initial origin of BPD later [6].

Preterm infants with birth weight less than 1500 g, the risk of suffering from BPD increased 4.75 times with 95%CI ranging from 2.49 to 9.05 and $p<0.05$.

Similar to gestational age, preterm infants had low birth weight, the risk of suffering from acute respiratory failure increased. This remark was analogous to that of Borkowski W [3]. The author found that birthweight increased one unit the risk of acute respiratory failure reduced 0.61 times compared to other preterm infants.

Huong Thi Lan Do [12] recognized that preterm infants with low gestational age and birthweight, the incidence of BPD and the severity of BPD increased. Chang Won Choi et al [4] showed that among 1180 preterm infants less than <32 weeks and birthweight less than 1500 g, mean birthweight in mild, moderate and severe BPD were 1070 ± 263 g, 976 ± 251 g, 910 ± 273 g, respectively ($p<0.05$).

Patent Ductus Arteriosus in preterm infants raised the risk of BPD 7.06 higher than that of preterm infants without patent ductus arteriosus with 95%CI ranging from 3.29 to 15.16 and $p<0.05$.

Patent Ductus Arteriosus belonged to congenital heart diseases with left-right shunt that increased the blood flow in the lung influencing badly lung function such as air exchange, leading to the risk of development of BPD. Indeed, Vakrilova L et al [24] (2010) found that the incidence of BPD in preterm infants with patent ductus arteriosus was 25.4% much higher than that of preterm infants without patent ductus arteriosus 1.7% ($p < 0.05$).

Sellmer A et al [17], when researching 183 preterm infants less than 32 weeks in Denmark from 2010 to 2012 had some conclusions. Patent ductus Arteriosus found in the 3rd day after birth increased 3.7 times the risk of having BPD with 95% CI: 1,0-14.

We found that a lack of surfactant use made preterm infants increase 26.59 times the risk of having BPD (95%CI: 12.3-57.43 and $p<0.05$).

According to Hong Thi Dinh [11], Huong Lan Do [12], Linh Trong Nguyen [16], the surfactant use after birth increased the rate of survival, but it didn't reduce the rate of BPD. Chotigeat U et al [5] studied 54 preterm infants developing BPD after acute respiratory failure from 01/01/2003 to 31/12/2005 in Thailand and showed that 76% of preterm infants with moderate and severe BPD had no surfactant use compared to 61.1% in surfactant use group. However, the difference was not statistically significant. We thought that the surfactant use reduced the time of mechanical ventilation and oxygenotherapy that reduced the development of BPD in preterm infants.

Currently, the technique called INSURE: intubation after birth, surfactant use, and early extubation was widely applied in the intensive care unit in the world that improve the development of BPD. This technique helped preterm infants limit time in a mechanical ventilation that reduced the BPD mortality.

Perinatal maternal infections raised 15.9 times the risk of having BPD in preterm infants (95%CI: 7.4 - 35.58 and $p<0.05$).

Maternal infections such as amnionitis, genital infection transferred causes such as *E. coli, Listeria, Streptococcus B* to their preterm infants. these bacteria aggravated the acute respiratory failure by infecting immature lung of preterm infants [7].

We didn't find any association of maternal antenatal corticosteroid use, gender, Apgar score with BPD. Hong Thi Dinh [11], Huong Thi Lan Do [12], Linh Trong Nguyen [16], Chang Won Choi et al [4], Tapia JL et al [21] found the high incidence of preterm infants with BPD had a history of corticosteroid use at least 24 hours before birth. But the association was not strongly enough.

Conclusion

The incidence of BPD in preterm infants was 16.4% in which 47.1% were encountered in preterm infants less than 32 Was of gestational age and 56.1% preterm infants with birth weight less than 1500 g. Some significant risk factors associated with Bronchopulmonary Dysplasia were gestational age less than 32 Was, birth weigh less than 1500gs, patent ductus arteriosus, surfactant use, and perinatal infections of mother. Sex, Apgar score <7, and non-antenatal maternal corticosteroid use were not significantly associated with Bronchopulmonary Dysplasia.

Recommendation

It needs to well manage pregnancies to reduce the prevalence of preterm infants.In the clinics, doctors must pay close attention to some risk factors of BPD to avoid and limit the risk of development of Bronchopulmonary Dysplasia in preterm infants.

Competing interest

The authors declare that they have no competing interests.

Authors' contribution

Authors participated in study design, protocol development and performance, data analysis, interpretation of data and writing of the manuscript, carried out the clinical data collection and data analysis and read and approved the final manuscript.

Data Availability

The EXCEL/SPSS data used to support the findings of this study are available from the corresponding author upon request.

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Recovery Characteristics Of Cardiovascular, Biochemical And Hematological Functions Of The High-Level Shooting Athletes In Full Capacity Exercising

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Abstract

Using routine scientific research methods, 03 evaluation indicators of cardiovascular function recovery ability and 03 evaluation indicators of biochemistry and hematology function recovery ability of the high-level shooting athletes in full capacity exercising have been selected. On that basis, medical examination methods, hematological and biochemical testing methods are used to evaluate the recovery process of cardiovascular function, hematology and biochemistry of the research subjects in full capacity exercising at times: before exercising, after starting, while exercising (evaluate 10s after completing exercising) and 10 minutes after exercising.

Introduction

Cardiovascular and biochemical hematological indicators are indicators that are sensitive to the amount of exercising in sports practice and sports competitions. Today, with modern equipment system applied in sports, it has allowed us to determine the exact exercising level and recovery ability of athletes after physical activities, as well as training and teaching efficiency. This is also an important basis for training athletes.

Currently, scientists in the world have identified the pattern of recovery after physical activity, fatigue characteristics after exercising in different capacity areas, the time needed to end the recovery of different biochemical processes during the resting period after exercising, as well as means and recovery methods for athletes after training and competition. However, in Vietnam, this work has not paid attention to and researched by any author.

With the existing modern equipment system, we conduct the research: Characteristics of cardiovascular, biochemical and hematological recovery functions of high-level shooting athletes in full capacity exercising.

Research Methods

The research process uses methods:Methods of analyzing and synthesizing documents,Interview method,Medical examination method,Test method (biochemistry hematology) and Methods of statistical mathematics

Results And Discussion

1. Select indicators to assess the recovery ability of cardiovascular, biochemical and hematological functions for high-level shooting athletes in full capacity exercising.

Using methods of analyzing and synthesizing documents, interviewing method, 03 indicators were selected to assess the recovery ability of cardiovascular function of high-level shooting athletes in full capacity exercising includes: Heart frequency (times / minute); Maximum blood pressure (mmHg) and minimum blood pressure (mmHg); At the same time, 03 indicators were selected to assess the recovery ability of biochemical and hematologic function of high-level shooting athletes in full capacity exercising including: Urea (mg / dl); Glucose (mmol / l) and blood lactate (mmol / l).

The research was conducted on 14 level 1 shooting athletes and grandmasters. including 10 male athletes aged 17-29 and 04 female athletes aged 14-16.

The exercise selected to represent full capacity exercising: Running 100m (s)

We conducted collecting data to assess the characteristics of cardiovascular, biochemical and hematological recovery functions of high-level shooting athletes in full capacity exercising at different times: Before exercising (before athletes start training activities); After starting (immediately after the athlete completes the general and professional warm-ups for full capacity exercises); while exercising (10s after athletes complete full capacity exercising) and minutes after exercising (10 minutes after the completion of full capacity exercising).

Date to assess cardiovascular function was taken by directly checking pulse and blood pressure measurement with Omron mechanical meter.

Data to assess biochemical and hematological function was taken using Cobas 6000 automatic biochemical machine, AU 2700 machine made in Japan.

2. Recovery ability of cardiovascular function of high-level shooting athletes in full capacity exercising.

2.1. Characteristics of indicators reflecting cardiovascular function of high-level shooting athletes before exercising in full capacity area.

The cardiovascular indicators while resting as well as moving always attract the special attention of coaches and scientists because of their information and sensitivity to the amount of exercising. Through cardiovascular indicators, professionals can assess the impact of the amount of exercise, the body's ability to adapt to the amount of exercise, the level of recovery, and especially to assess the long-term change reflects the degree of adaptation and effectiveness of the training process. Particularly rest cardiovascular indicators reflect the long-term changes of cardiovascular system that occur during the training and competition of athletes.

The characteristics of the indicators reflecting cardiovascular function of high-level shooting athletes before exercising is presented in Table 1.

Table 1. Characteristics of cardiovascular indicators of high-level shooting athletes before exercising

No.	Norms	Male (aged 17-19) (n=10)		Female (aged 14-16) (n=04)	
		$\bar{x}$	**σ**	$\bar{x}$	**σ**
1	Heart frequency (times/minute)	71.54	6.87	75.27	7.02
2	Maximum blood pressure (mmHg)	119.7	6.43	111.3	6.37
3	Minimum blood pressure (mmHg)	68.17	4.43	64.62	5.78

Table 1 shows that: Before exercising, the characteristics of cardiovascular indicators of high-level shooting athletes are within the normal biological limit of Vietnamese people of the same age, gender, but the results reached a good threshold. This shows that the cardiovascular indicators' characteristics in athletes of sport research subjects are good, allowing to increase the amount of exercise in the training process.

2.2. Characteristics of indicators reflecting cardiovascular function of high-level shooting athletes after starting in full capacity exercising area.

As is known, cardiovascular indicators are particularly sensitive to the amount of exercising. After starting in full capacity exercising area, when the athletes have participated in the general and professional warm-ups, the cardiovascular indicators of athletes have changed significantly. The results are presented in detail in Table 2.

Table 2. Characteristics of cardiovascular indicators of high-level shooting athletes after starting in full capacity exercising area.

No.	Norms	Male (aged 17-19) (n=10)		Female (Aged 14-16) (n=04)	
		$\bar{x}$	**σ**	$\bar{x}$	**σ**
1	Heart frequency (times/minute)	103.29	7.62	102.11	8.26
2	Maximum blood pressure (mmHg)	129.35	6.57	127.27	7.05
3	Minimum blood pressure (mmHg)	67.17	4.45	64.52	5.71

Table 2 shows that: After starting, cardiovascular indicators of athletes have significant changed. Specifically: The heart frequency of athletes increased very strongly. This is a transformation that increases blood circulation, prepares for exercising. Maximum blood pressure increases in parallel with the increase in heart frequency; Minimum blood pressure is unchanged or slightly reduced.

In conclusion, after starting, cardiovascular indicators of high-level shooting athletes changed quite well, allowing to raise the amount of exercise during the training process.

2.3. Characteristics of indicators reflecting cardiovascular function of high-level shooting athletes while exercising in full capacity area.

Characteristics of cardiovascular function of high-level sports athletes while exercising in full capacity area are presented in detail in Table 3.

Table 3. Characteristics of cardiovascular function of high-level shooting athletes while exercising in full capacity area

No.	Norms	Male (aged 17-19) (n=10)			Female (aged 14-16) (n=04)		
		$\bar{x}$	σ	% change	$\bar{x}$	σ	% change
1	Heart frequency (times/minute)	153.5	15.23	48.56	152.3	15.27	49.13
2	Maximum blood pressure (mmHg)	136.3	13.53	5.37	136.1	13.58	6.94
3	Minimum blood pressure (mmHg)	67.03	6.55	-0.21	64.41	5.34	-0.17

Table 3 shows that: While exercising in full capacity area, the cardiovascular indicators of athletes had significant changes compared to the time before conducting the test (after starting). Specifically: Heart frequency increased by about 50%, maximum blood pressure slightly increased and minimal blood pressure remained unchanged or decreased slightly. This is perfectly consistent with the exercising performance characteristics in full capacity area, because while exercising, the indicators of cardiovascular function almost do not increase and increase after stopping. The increase reached the highest value at 1 to 1.5 minutes after stopping. At 10s after completing the exercise, the indicators are still in a rising time.

2.4. Characteristics of indicators reflecting cardiovascular function of high-level shooting athletes 10 minutes after exercising in full capacity area.

Tests were conducted to check the cardiovascular function of high-level sports athletes 10 minutes after exercising in full capacity area, while compare the results obtained with the examination of cardiovascular function characteristics of the athlete before starting the test. Results are presented in Table 4.

Table 4. Characteristics of cardiovascular function of high-level shooting athletes 10 minutes after exercising in full capacity area

No.	Norms	Male (aged 17-19) (n=10)			Female aged 14-16) (n=04)		
		$\bar{x}$	σ	% recover	$\bar{x}$	σ	% recover
1	Heart frequency (times/minute)	75.78	7.32	154.79	77.49	7.43	149.05
2	Maximum blood pressure (mmHg)	118.43	6.76	257.12	116.35	6.67	223.67
3	Minimum blood pressure (mmHg)	67.12	6.08	64.29	64.49	6.12	72.73

Table 4 shows that: 10 minutes after completing exercising activities in full capacity area, the cardiovascular function characteristics of the athletes have recovered beyond the time after starting and has gone back to indicators at normal conditions (before exercising). This can be explained that exersing in full capacity area takes place in a short period of time, circulation parameters are not able to increase during the exercising process but only really increase after stopping, at the same time the parameters also decrease to normal status after 5-7 minutes. Therefore, 10 minutes after exercising, the cardiovascular indicators returned to normal levels.

3. Recovery characteristics of biochemical and hematological function of high-level shooting athletes in full capacity exercising.

3.1. Characteristics of indicators reflecting the biochemical and hematological function of high-level shooting athletes before exercising in full capacity area.

Biochemical and hematological indicators are considered the most important indicators, highly sensitive to the amount of exercise and reflect objectively and reliably the biological adaptive capacity of the body with the amount of exercise as well as the body's recovery ability after exercise. However, practicality and ability to universalize is not high due to the limitation of biological knowledge as well as the cost of high research activities, so it is often considered as in-depth studies and only applied to high-level athletes.

Within the scope of the study, the topic analyzed 03 specific criteria selected. Specific results of hematological and biochemical indices of high-level shooting athletes before exercising in full capacity area is shown in Table 5.

Table 5. Characteristics of biochemical and hematological indicators of high-level shooting athletes before exercising

No.	Norms	Male (aged 17-19) (n=10)		Female (aged 14-16) (n=04)	
		$\bar{x}$	σ	$\bar{x}$	σ
1	Urea (mg/dl)	4.21	0.21	4.69	0.29
2	Glucose (mmol/l)	4.54	0.24	4.51	0.25
3	Blood lactate (mmol/l)	2.23	0.20	2.15	0.19

Table 5 shows that: In the pre-exercise period, the characteristics of hematological and biochemical indicators of high-level shooting athletes are within the normal biological limit and reach the optimal threshold. However, it should be noted that this is the observe norms in athletes, so it is not fully consistent with the biological norm in normal people. Specifically: Blood lactate index (mmol / l) according to biological constant, in static ranged from 0.8 to 1.5, while in athletes is considered fully recovered with blood lactate (mmol / l) <3.0 . This is explained by the state of psychological stress and should be paid attention to when evaluating, especially in the pre-competition stage.

3.2. Characteristics of indicators reflecting the biochemical and hematological function of high-level shooting athletes after starting in full capacity area.

At the time after completing the general and professional warm-ups for exercising in full capacity area, at the same time checking cardiovascular indicators of athletes, the research collected blood samples to check biochemical indicators. selected. The results are presented in Table 6.

Table 6. Characteristics of biochemical and hematological indicators of high-level shooting athletes after starting in full capacity area

No.	Norms	Male (aged 17-19) (n=10)		Female (aged 14-16) (n=04)	
		$\bar{x}$	σ	$\bar{x}$	σ
1	Urea (mg/dl)	4.31	0.22	4.62	0.27
2	Glucose (mmol/l)	4.76	0.37	4.69	0.36
3	Blood lactate (mmol/l)	2.25	0.22	2.18	0.20

Table 6 shows that: After starting in full capacity area, the biochemical and hematological indicators of high-level shooting athletes tends to increase slightly compared to the time before the exercise. However, these indicators still fall under the optimal threshold according to the normal biological limits of Vietnamese people.

3.3. Characteristics of indicators reflecting the biochemical and hematologic function of high-level shooting while exercising in full capacity area.

Immediately after completing the exercise (within 10 seconds after completing the test), the research conducted blood tests to assess the characteristics of biochemical and hematological indicators of chosen sports athletes exercising in full capacity area. The results are presented in Table 7.

Table 7. Characteristics of biochemical and hematological indicators of high-level shooting athletes while exercising in full capacity area

No.	Norms	Male (aged 17-19) (n=10)			Female (aged 14-16) (n=04)		
		$\bar{x}$	σ	% change	$\bar{x}$	σ	% change
1	Urea (mg/dl)	4.48	0.37	3.94	4.79	0.29	3.68
2	Glucose (mmol/l)	5.21	0.41	9.45	5.16	0.38	10.02
3	Blood lactate (mmol/l)	2.37	0.25	5.33	2.23	0.21	2.29

Table 7 shows that: While exercising in full capacity area, the biochemical and hematological indicators of sports athletes vary in a slight increase in most indicators, however, the increase is 10% lower than the time after the warm-up.

3.4. Characteristics of indicators reflecting the hematological function of high-level shooting athletes 10 minutes after exercising in full capacity area

Blood tests of high-level sports athletes were taken 10 minutes after exercising in full capacity area, at the same time compared the results obtained with the test results of biochemical and hematological of athletes before making the test. Results are presented from table 8.

Table 8. Characteristics of hematological and biochemical indicators of high-level shooting athletes in full capacity area at 10 minutes after exercising

No.	Norms	Male (aged 17-19) (n=10)			Female (aged 14-16) (n=04)		
		$\bar{x}$	σ	% recover	$\bar{x}$	σ	% recover
1	Urea (mg/dl)	4.19	0.28	170.59	4.59	0.30	117.65
2	Glucose (mmol/l)	5.29	0.33	-17.78	5.25	0.37	-19.15
3	Blood lactate (mmol/l)	2.72	0.11	-291.67	2.39	0.09	-320.00

Table 8 shows that: 10 minutes after the completion of exercising in full capacity area, the test characteristics of biochemical and hematological indicators of athletes have significant changes. Specifically: Blood urea indicator changed to the level of after starting; Glucose indicator increased compared to the time after the warm-up in all athletes of all sports; This is consistent with the exercising pattern. Blood lactate indicator (mmol / l) increased slightly in sports.

CONCLUSION

- Before exercising, cardiovascular function characteristics and biochemical hematological indicators of high-level shooting athletes is at the optimal level of normal people of the same age and gender. However, it should be noted that this is the observe standard in athletes, so it is not fully consistent with the standard of biological constant in normal people.After starting the preparation for the full capacity exercise, all evaluation indicators of cardiovascular, biochemical and hematological functions of athletes have significant changed in the direction of increasing, expressing the adaptation with exercising.While exercising, the indicators of cardiovascular, biochemical and hematological functions evaluation of athletes increased. The highest increase was achieved in the vascular frequency, then the maximum blood pressure, the increase was lower in the biochemical and hematological indicator, particularly the minimum blood pressure indicator was unchanged or decreased slightly. This is entirely consistent with the exercising pattern in full capacity area.10 minutes after exercising, the characteristics of cardiovascular, biochemical and hematological functions of the athletes recovered to the level before exercising, there were some indicators that recovered to better levels after starting.

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A Study On Indian Badminton: An Upsurge With Reference To Different Awards

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Abstract:
Badminton today is considered as fastest racket sports in India. After cricket, badminton is the second most popular game in India. For any nation's sporting growth, the supply chain plays a critical role. But sustainability of any positive change is determined by the availability of current and future resources. Leading that movement in India both in performance as well as popularity; has been badminton. Badminton today is played as serious professional sports in India- regional level, national level. Such events are periodically conducted to unravel new talent. So researcher, in this study tried to find the scenario of Indian badminton and recognized faces whose contribution cannot be overstated to know the game in this nation
Beside this many sports awards are given by the govt. of India and many private organizations. There are five sports awards conferred to the sport person for their extraordinary performance and contribution in the field of sports by the government of India. Researcher conducted to evaluate the performance of badminton players who was awarded different sports award and civilian award by the government of India (both male and female) since from the inception of Arjuna Awardees in 1961 to 2017, and also try to understand the position of Indian badminton and its prosperity. The study is fully descriptive in nature.
Key words: Badminton, Sports awards, Civilian awards

Introduction:
The game badminton was played in ancient Greece over 2000 year ago. The game of badminton can be described to be a descendent of battledore and shuttle cock which was most popular from medieval era; the modern version of the game has its roots well laid in India and now most dominant sports in Asian countries. In 19th century it was played in pune city in India and known as poona, due to its inception in the city. Poona was developed as children games aiming to keep the cock stuffed with feathers – shuttle cock, in the air as long as possible using a paddle, called a battledore. Though this cooperative, non competitive game was almost similar to its predecessor, the only different was the addition of net in the centre of the court. Shuttlecock consisting of 16 feathers is used for competition.

Badminton today is played as serious professional sports in India- regional level, national level and also yonex Indian super series along with BWF world tour are now a yearly event in badminton sports calendar. Such events are periodically conducted to unravel new talent.

Beside this many sports awards are given by the govt. of India and many private organizations. There are five sports awards conferred to the sport person for their extraordinary performance and contribution in the field of sports by the government of India. The national award conferred by the ministry of youth affairs of sports Government of India in order of priority are-Rajiv Gandhi khel ratna (1991),Dronacharya award (1985),Arjuna Award (1961)Dhyan Chand Award (2002) and Rastrio Khel Protsahan Puraskar. Rajiv Gandhi Khel Ratna is the highest sports award in country, is conferred in the memory of late Prime Minister Rajiv Gandhi. This award was started giving to the outstanding sports performance to motivate and moral boosting to the sports person of India. Dronacharya Award is given field of coaching and teaching of sports in India. This award first introduced in the year 1985. Arjuna award is the first sports award of India, instituted in 1961.It carries a bronze medal, a statue of Arjuna and a certificate along with a cash of rs.5 lakh for at least three to four years of continuous performance in international standard where as Dhyan chand award is given in sports for lifetime achievement. This award is conferred in the name of hockey wizard Major Dhyan singh from the year 2002.

Researcher conducted to evaluate the performance of badminton players who was awarded different sports award and civilian award by the government of India (both male and female) in selected events since from the inception of Arjuna Awardee in 1961 to 2017, and also try to understand the position of Indian badminton and its prosperity.

Purpose of the study:

To find out the scenario of Indian badminton,To know the awards conferred by the government of India ,To know the sports personalities related to the game,To considered the contribution of badminton players to their nation To know the social contribution of the players and the coaches related to the game.

Delimitation of the study:

There were certain factors deliberately controlled for conducting the study. The delimitations with which the present study conducted were:Though the study was related to different sports award but only given priority to the sports award and civilian awards conferred by the Ministry of India.The researcher had restricted and controlled the present study within the boundary of a limited period time since the inception of Arjuna Award(1961).Case study made on those players who were conferred sports awards along with civilian awards.The present study was carried out under some unavoidable limitations. These were as follows:Since the present research project is purely a historical and descriptive in nature the researcher was solely depended upon different facts and information available from various secondary sources.

Methodology:

In the present study the investigations were conducted to evaluate upsurge of Indian badminton the performance of badminton players who was awarded different sports award and civilian award by the government of India only (both male and female) in selected events since from the inception of Arjuna Awardee in 1961 and also try to understand the position of Indian badminton and its upsurge.

Sampling:

All the players (both male & female) who had represented nations and distinction earn and the coaches who produce top national or international level players for nation in the Games of badminton taken into consideration for this study. Whereas, case study made on those players who won civilian award along with sports awards in both section of men and women.

Criterion Measure

Badminton falls under the indispensable category in Indian sports because this sport is widely practiced across India. It was hard to analyse all the awardees within the limited scope of this research work. So, the investigator delimited the events and restricted his survey to the following award only:

Sports Award	Civilian Awards
Arjuna Award	PadmaShri
Dranacharya Award	Pandmabhusan
Rajib Gandhi Khel artna	Padmabivusan
Dhyan chand Award	Bharat Ratna

Results and Discussion

Table-1: List of recipient's of Arjuna Award and others Civilians Awards

Name of Awardees	Year	Civilian Awards	Year
Nandu Natekar	1961		
Meena Shah	1962	Padma Shri	
Dinesh Khanna	1965		
Suresh goel	1967		
Dipu ghosh	1969		
Damayanti Tambay	1970		
Shova Moorthy	1971		
Prakash Padukone	1972	Padma Shri	1982
Raman Ghosh	1974		
Davinder Ahuja	1975		
Ami Ghiya	1976		
Kanawal Thakur Sir	1977-78		
Syad Modi	1980-81		
Partha Ganguli	1982		
Madhumita Bisht	1982	Padma Shri	2006
Rajeev Bagga	1991		
Pullela Gopichand	1999	Padma shri, Padma Bhushan	2005, 2014
Goerge Thomas	1999		
Ramesh Tikaram	2002		
Madasu Srinivas rao	2003		
Abhinn shyam Gupta	2004		
Aparna Popat	2005		
Chetan Anand	2006		

Rohit Bhakar	2006		
Anup Sridhar	2008		
Saina Nehwal	2009	Padmashri, Padma Bhushan	2010,2016
Parul Parmar	2009		
Jwala gutta	2011		
Ashwini Ponnappa	2012		
Parupalli kashyap	2012		
P.V Sindhu	2013	Padmashri, Padma Bhushan	2015,2019
Valiyaveetil Diju	2014		
Srikanth kidambi	2015	Padmashri	2018
Sikki reddy	2018		

Table-2: List of recipients of Rajiv Gandhi Khel Ratna, Dronacharya, Dhyan chand and Rastriya Khel Protsahan Awards

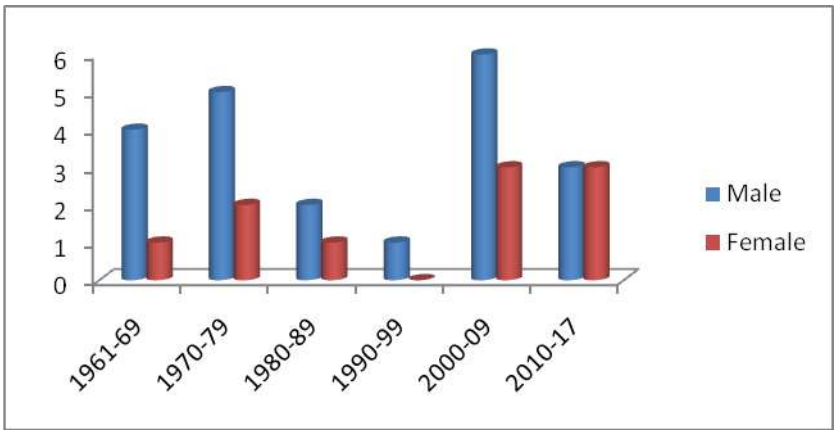
Rajiv Gandhi Khel Rartna Award	Dronacharya Award	Dhyan chand Award	Rastriya Khel Protsahan award
Pullela Gopichand (2001)	S.M Arif (2000)	No one	Pullela Gopichand (2013)
Saina Nehwal (2010)	Pullela Gopichand (2009)		
P.V Sindhu (2016)			

Rajiv Gandhi Khel Ratna is the highest sports award in country, is conferred in the memory of late Prime Minister Rajiv Gandhi. This award was started giving to the outstanding sports performance to motivate and moral boosting to the sports person of India. It was started giving from the year 1991-92, but Pullela Gopichand was the first player in Badminton received the award in the year 2001. Since them another two outstanding players, Saina Newal(2010) and PV Sindhu (2016)won the this prestigious award. Dronacharya Award is given in the field of coaching and teaching of sports in India. This award first introduced in the year 1985. In badminton two renowned coaches Mr.S.M Arif (2000) and Mr.Pullela Gopichand (2009) were awarded with this prestigious award. Arjuna award is the first sports award of India, instituted in 1961.It carries a bronze medal, a statue of Arjuna and a certificate along with a cash of rs.5 lakh for at least three to four years of continuous performance in international standard where as Dhyan chand award is given in sports for lifetime achievement. This award is conferred in the name of hockey wizard Major Dhan singh from the year 2002.

Table-3: Arjuna award conferred in different decade up to 2017(Male & Female)

Decade	Male	Female	Total
1961-69	4	1	5
1970-79	5	2	7
1980-89	3	1	3
1990-99	1	0	1
2000-09	6	3	9
2010-17	3	3	6
	22	10	32

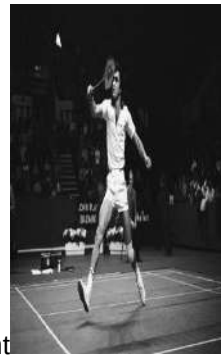
Graph-1: Male and female Arjuna awardees in different decade



Arjuna award is given to the sports person who are consistently perform for at least four years in national or international arena in a particular discipline. It is also considered that the athlete should also have shown quality of leadership, sportsmanship and a sense of discipline. In badminton, Nandu Natekar was first conferred Arjuna Award in the very first year this prestigious award was introduced in 1961.Total 31 players up to 2017 were awarded in badminton. From the table it is clear that the game has an acceptance among the girls especially last two decade girls are even performing better than boys as two Olympic medals came in the hand of girls. Meena shah was the first female Arjuna Awardee in badminton and she also decorated with Padma shri .

A case study has been made on most renowned and decorated badminton players who were awarded with civilian awards along with sports awards (up to 2017)

Case Study -I	
Dimensions	Particulars
Name	Mr. Prakash Padukone
Sports Discipline	Badminton
Date of Birth/Life Span	!0th of June 1955
Place of Birth	Kannada, Kundapura,Udupi District, Karnataka
Parents	Ramesh Padukone, Ahilya Padukone
Coach	RAmesh Padukone Primary level
Education	Graduate
Sports Career	International

SportsAchievement 	1971-Senior Nation Champion 1978-Commonwealth Games gold !980-All England Championship 1981- Alba World Cup 1982-Dutch Open, Hong Kong Open 1983- World championship Bronze
Special Contribution	The chairman of Indian Badminton Association. Co-founder of Olympic gold Quest Coached Indian Team 1993-1996 He was developed Prakash Padukone badminton Academy in October 1994
Distinction Earn	Arjuna Award- 1972 Padma Shri-1982

Case Study II	
Dimensions	Particulars
Name:	Pullela Gopichand
Sports Discipline	Badminton
Date of Birth/Life Span	16th November 1973
Place of Birth	Nagandla, Prakasam District , Andhra Pradesh
Parents	Pullela Subash Chandra, Subbaravamma
Coach	S.M Arif & Prakash PAdukone
Education	Graduate in Public Administration
Sports Career	National And International
Sports Achievement 	1999-Scottish open, India International 2001-All England 2004-Indian Asian Satellite Runner up- 1997- Indian Open !999-French open , German Open

Special Contribution	Gopichand Badminton Academy
Distinction Earn	Arjuna Award- 1999Rajiv Gndhi khel Ratna-2001 Dronacharya-2009Padma Shri-2005 Padma Bhusan-2014Rastriya Khel Protsahan Puraskar-2013Honorary Doctorate-IIT Kanpur

Case study- III Case Study-IV

Dimensions	Particulars
Name:	Saina Nehwal
Sports Discipline	Badminton
Date of Birth/Life Span	17th March 1990
Place of Birth	Hisar, Haryana
Parents	Harvir Singh Nehwal & Usha Nehwal
Coach	S.M Arif and Pullela Gopichand
Education	Graduate in Public Administration
Sports Career	National And International
Sports Achievement 	2006-Philippines Open,2008-Chines Taipei Open 2009-Syed Modi International, Indonesia open 2010-India Open, Hong Kong Open, Singapore Open , Indonesia Open2011-,Swiss Open, Indonesia Open, 2012-Swiss Open, Thailand Open, Indonesia Open, Denmark Open,2013-Sayed Modi 2014- Australian open,, China Open, Syed Modi international, 2015- Syed Modi International 2016- Autralian Open,2017- Malaysia Master 2019-Indonesia Masters2012-Olympic bronze
Special Contribution	Opening an Badminton academy in her native state of Haryana Autobiography- Playing to win :My life on and of court
Distinction Earn	Arjuna Award- 2009Padma Shri-201 Rajiv Gandhi Khel Ratna-2010,Padma Bhusan-2016 Honorary Doctorate – Mangalayatan university SRM institute of Science and technology

Dimensions	Particulars
Name:	Pusarla Venkata Sindhu
Sports Discipline	Badminton
Date of Birth/Life Span	5th July 1995
Place of Birth	Hyderabad
Parents	P.V Ramana and P. Vijaya
Coach	Pullela Gopichand
Education	Bachelors Degree in commerce
Sports Career	National And International
Sports Achievement 	2013- Malaysia Masters2013-Macau open 2014-Macao Open2015-Macao Open 2016-Malyasia Masters2016-Chaina Open 2017-Syed Modi international 2017-Korean Open 2017-India Open2018-BWF world tour Final 2019-BWF world Champion2016-Olympic Silver
Special Contribution	Social act like donate money many times in charity and hospitals
Vocational Achievement	Employee in Bharat Petroleum
Distinction Earn	Arjuna Award- 2013Rajiv Gandhi Khel Ratna-2016 Padma Shri-2015Padma Bhusan-2019
Empowerment	Sport , Economical And the Social

Conclusion:

Before few years' Indian shutlers such as Prakash padukone, Saina Newal, Jwalla Gutta, Pullela Gopichand were the known and recognize figures in Indian badminton. Now gradually there has been a tremendous increase in this game. In the last decade, the influence of Saina Newal, as a player and Pullela Gopichand as a coach cannot be overstated.

Even before twenty years, badminton was most popular sports in China, Malaysia and Indonesia etc. Only a few country of south East Asia dominated and won most of the world recognize largest tournaments. Now this barrier has been Broken. Our country that starved for one podium finish in Olympic that has happened when Saina Nehwal had a bronze medal in London Olympic, that medal filled a belief across the country that we could do well in this sports. Following the footstep of Saina Nehwal, P.V Sindhu won silver medal in the next Olympic. Now India no longer depends upon any one or two players. Saina Nehwal, P.V Sindhu ,HS Pranoy, Kidambi Srikanth etc arrived forward the momentum by making giant steps in the world super series .

Last but not the least, contribution of Pullela Gopichand cannot be ignoring in the process of Indian dominance in world badminton. Still according to Gopichand there is a lack of quality coaches and academy in India to dominate the world badminton.

Several Players are doing well in the international arena of badminton from India. After cricket in India badminton is getting better coverage on TV and Internet. So this game can be a serious career option for many. Looking at its recent performance, India could bring Home multiple medals in badminton at the Tokyo Olympics in 2020.We are waiting for a story of praise of Indian Badminton as the future powerhouse of world badminton.

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Nutrition Knowledge Program Andits Impact On Performanceof Football And Basketball Players

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Introduction:

An athlete goes through lot of challenges his body on a regularly physicaltraining and competitions. To keep up with requirement of his activity or sport, he requires enough fuel for his body on day to day basis.Sports nutrition is a specialization within the field of nutrition that relates closely with the study of the human body and exercise science. It can be defined as the application of nutrition knowledge to a practical daily eating plan which provides the fuel for physical activity, facilitating the repair and building process following physical effort put in and optimisec performance , which also promotes overall health and wellness. The basic concept for sports nutrition for athletes requires proper eating strategies and need to know and have a command of general nutrition. Sports nutrition also helps to gain the knowledge of how nutrition and exercise science are intertwined, emphasize that physical training and dietary habits are reliant on each other in order to produce optimal performance

Purpose Of Study

The purpose of this study is to review literature related to nutrition, importance of having nutrition knowledge and its impact on sports performance and thereby come to a hypothetical conclusion thatgaining nutrition knowledge helps in optimising sports performance among football and basketball playing boys. .

Methodology:

Systematic literature search was conducted. Various literature was reviewed related to importance of sports nutrition, effect of imparting nutritionknowledge on sports performance. Evidence was synthesised to show the importance of nutrition on sports performance.

Results

Nutrition Knowledge and sports performance

Nutrition has a vital function in achieving high performance level in sports. Proper diet for athletes maximizes the exercise capacity and performance during competition, promotes physiological adaptations to training, assists in recovery and protects immune function, and overall health. The main dietary goal is to obtain adequate nutrition and to optimize health, fitness, and sport performance among the athletes. It starts from providing enough fuels for muscles, modification of dietary intake, improves the body composition, increases the mean body mass, and decreases the percentage of body fat, which all are required to enhance performance.

For this vital role, athletes need to learn the healthy food choices, the proper source of energy, convenient meal time according to training schedules, and when and how to eat during the tournaments. They also need to know how to meet their requirements from both macronutrients (carbohydrate, proteins, and lipids) and micronutrients (vitamins and minerals). For example, fluid intake has special concern in athlete's performance, the daily requirement, types of drinksThe application of nutrition knowledge to a practical daily eating plan and to proper eating strategies is important to overall health and wellness Research has shown that nutritional knowledge is related to eating behavior and is associated with better nutritional status and better dietary practices. Heaney *et al.* reported that athletes with high level of nutrition knowledge have a greater ability to use this knowledge to their daily dietary practices and behavior.December 2018.For young athletes dietary intake and nutrition knowledge is rarely reported. Furthermore, the impact of nutrition knowledge on food choice is still unknown (Worsley, 2002). There is a need to assess the food choice and the nutrition knowledge in young athletes, since they experience sports-related nutritional demands additionally to the growth-related requirements . Furthermore, it is well known that eating patterns are established during childhood and adolescence and are easily carried forward into adulthood (Kelder, Perry, Klepp, & Lytle, 1994). Therefore, corrections of dietary intake should be performed at an early age (Mikkila, Rasanen, Raitakari, Pietinen, &Viikari, 2005). Many factors, like personal characteristics, socio-cultural and psychological determinants are influencing the establishment of eating patterns (Serra-Majem 2007). Especially children and adolescents are easily persuaded to change their diet due to trends of the food industry . Furthermore, adolescents are using their eating behavior to declare independence from home (McKinley 2005). This results in food habits like snacking, fast food consumption, meal skipping or the intake of unorthodox meals. For athletes it is important to achieve an adequate dietary intake from the beginning of their competitive career, since health and performance are influenced by optimum nutritional supply (Meyer 2007).

Student-athletes have to excel in the classroom and on the playing field. Improving their skills during hours of sport-specific practice is only the beginning of the training regimen that is necessary to be a successful student-athlete. Additional aspects of a student-athlete's training regimen should include proper sports nutrition and effective strength training. These two aspects can be overlooked, but they are extremely important factors student-athletes should incorporate into their training plans.There is a history of student-athletes reporting low sports nutrition knowledge. Providing student-athletes with nutrition counseling should allow for improved performance and allow them to maintain energy levels and lean body mass during the competition season and off-season conditioning.(Ashley Andrews 2016)Student-athletes believe nutrition is an essential part of their overall health. Their desire to perform better or improve physical feelings can influence how they make nutritional decisions. It is evident that there are perceived challenges of both accessibility and time in making proper nutritional decisions which could be identified independently or linked with one another. The physical feeling that athletes receive from food and as a result of eating food weighs into their decisions and beliefs.

The theme of knowledge is quite possibly the most important theme that emerged from this study in the comparison to existing literature. There are significant gaps in both the nutritional knowledge of student-athletes and coaches but also gaps in how they apply the knowledge that does exist to positively impact performance. (Sarah Sceery 2017)

Having good nutrition knowledge or practice did not directly determine athletic performance. However, there is the need for nutrition education interventions, to improve athlete's performance by promoting adequate energy intake, lean muscle mass and appropriate weight gain in athletes.Abiola A. Akomolafe, (2015).The nutrition knowledge of athletes and coaches is often inadequate. However, athletes need sufficient knowledge of this subject to understand the importance of food choices for their athletic performance, recovery, and overall health. Adequate nutrition knowledge and skills are important for coaches because they are often the most significant source of nutrition knowledge for their athletes.Fogelholm M.(2018)

Over the past 20 years, researchers have documented the benefits of nutrition related to exercise performance. In a joint position statement, the American College of Sports Medicine, American Dietetic Association, and Dietitians of Canada reported that "physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition." Following these guidelines might improve an athlete's training, recovery, and performance. However, collegiate athletes might encounter numerous barriers that hinder healthful eating, including deficits in nutrition knowledge, vegetarian or restricted dietary intake, or participation in excessive exercise. Athletes must have appropriate nutrition knowledge and easily accessible resources for nutrition guidance, **Toni M. Torres-McGehee** (2012).

Conclusion

Nutrition is an important part of sport performance for young athletes, in addition to allowing for optimal growth and development. Macronutrients, micronutrients and fluids in the proper amounts are essential to provide energy for growth and activity. To optimize performance, young athletes need to learn what, when and how to eat and drink before, during and after activity.Football and Basketball are high intensity games and imparting nutrition knowledge to them will have a big impact not only for their fitness but also their performance.

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Knowledge of Physical Education Students about Nutrition: A Cross-Sectional Study from Palestine

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Nutrition Practice And Its Impact On Performance Of Sports Persons

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Introduction:

Nutrition is important for athletes because it provides a source of energy required to perform the activity. The food we eat impacts on our strength, training, performance and recovery. Not only is the type of food important for sports nutrition but the times we eat throughout the day also has an impact on our performance levels and our bodies ability to recover after exercising. Meals eaten before and after exercise are the most important in sports nutrition but you should really be careful with everything that you put into your body. As a general rule of thumb athletes should eat about two hours before exercising and this meal should be high in carbohydrates, low in fat and low to moderate in protein. Carbohydrates are the main source of energy that powers your exercise regime and protein is required to aid muscle growth and repair. After exercising you need to replace the carbohydrates you have lost and you need to ensure proper muscle recovery by including protein in your post training meal.The proportions of protein and carbohydrates that you require will vary depending on both the intensity and type of sport so to get your individual balance right you should contact a qualified dietitian for professional help with your sports nutrition. Practice of nutrition and diet with regards to improving anyone's athletic performance thus becomes an impoartant part for an athlete . Sports Nutrition focuses its studies on the type, as well as the quantity of fluids and food taken by an athlete. In addition, it deals with the consumption of nutrients suchas vitamins, minerals, supplements and organic substancesthatinclude carbohydrates, proteins and fats.

Purpose Of Study

The purpose of this study is to review literature related to nutrition practise, importance of having nutrition knowledge and practise it and its impact on sports performance and thereby come to a hypothetical conclusion thatgaining nutrition knowledge followed by putting it into practise helps in optimising performance among sports persons. .

Methodology:

Systematic literature search was conducted. Various literature was reviewed related to importance of sports nutrition, effect ofnutritionpractise on sports performance. Evidence was synthesised to show the importance of nutrition on sports performance.

Results

Nutrition knowledge, practise and sports performance

Several health benefits have been attributed to sports practice, and an adequate nutrition status helps to maintain an optimal performance. Children most frequently practice non-competitive and non-endurance activities in a school setting. The dietary intake of children who practice sports should be similar to the general population, properly meeting their energy and nutrient requirements. During the activity performance, correct hydration should be aimed for, with water appearing to be an adequate source in most cases. General calorie and micronutrient supplementation should not be commonly recommended in children. Paediatricians must control nutritional status and dietary habits of children who practice sports, especially in those cases when weight-loss is aimed for, as well as take into account the psychological implications of competitive sports practice. 2013 Elsevier Espana. .Implementation of a nutrition programme for team sports involves application of scientific research together with the social skills necessary to work with a sports medicine and coaching staff. Both field and court team sports are characterized by intermittent activity requiring a heavy reliance on dietary carbohydrate sources to maintain and replenish glycogen. Energy and substrate demands are high during pre-season training and matches, and moderate during training in the competitive season. Dietary planning must include enough carbohydrate on a moderate energy budget, while also meeting protein needs. Strength and power team sports require muscle-building programmes that must be accompanied by adequate nutrition, and simple anthropometric measurements can help the nutrition practitioner monitor and assess body composition periodically. Use of a body mass scale and a urine specific gravity refractometer can help identify athletes prone to dehydration. Sports beverages and caffeine are the most common supplements, while opinion on the practical effectiveness of creatine is divided. Late-maturing adolescent athletes become concerned about gaining size and muscle, and assessment of maturity status can be carried out with anthropometric procedures. An overriding consideration is that an individual approach is needed to meet each athlete's nutritional needs.**Holway** (2011)

Team sports are based on intermittent high-intensity activity patterns, but the exact characteristics vary between and within codes, and from one game to the next. Despite the challenge of predicting exact game demands, performance in team sports is often dependent on nutritional factors. Chronic issues include achieving ideal levels of muscle mass and body fat, and supporting the nutrient needs of the training program. Acute issues, both for training and in games, include strategies that allow the player to be well fuelled and hydrated over the duration of exercise. Each player should develop a plan of consuming fluid and carbohydrate according to the needs of their activity patterns, within the breaks that are provided in

their sport. In seasonal fixtures, competition varies from a weekly game in some codes to 2-3 games over a weekend road trip in others, and a tournament fixture usually involves 1-3 days between matches. Recovery between events is a major priority, involving rehydration, refuelling and repair/adaptation activities. Some sports supplements may be of value to the team athlete. Sports drinks, gels and liquid meals may be valuable in allowing nutritional goals to be met, while caffeine, creatine and buffering agents may directly enhance performance. **Mujika, IÃ±igo; Burke, Louise**,2011.

Sports nutrition in Canada has significantly evolved over the years from providing fundamental training dietary advice to applied precise assessment of nutritional status in a variety of settings, especially with the establishment of Canadian Sport Institutes and Centres across Canada. This progression has enhanced the level of dietary support to manage athletes' nutrition in a holistic perspective. Athletes are now educated about food fundamentals (acquiring foods, menu planning, preparing, food safety), personal accountability of hydration and energy monitoring (urinary and body weight assessments), individualized supplementation protocols, and customized nutrition for variable daily training environments according to their Yearly Training Plan. Sport dietitians are an important member of Integrated Sport Teams where collaboration exists amongst professionals who coordinate the athletes' personalized training and performance programming. Dietitians in sport are encouraged to continue to lobby for nutrition programming at the elite, varsity, provincial, and club levels to ensure that athletes receive accurate guidance from nutrition experts.**Erdman, Kelly Anne**,(2015),

In spite of all the advances in sport nutrition and the importance of an adequate food intake in order to improve sport performance, both recreational and professional athletes forget frequently to include planning an optimum diet and fluid intake in their global strategy for performance. Physiological and metabolic adaptations produced as a consequence of physical exercise lead to the necessity of increasing caloric (in accordance to energy output) and protein (based on the trophic needs of the organism) intake. Likewise, paying major attention to vitamin and mineral intake, specifically B vitamins and zinc and chromium, is required, in order to optimize carbohydrate metabolism, the ultimate limiting factor for sport performance. During the training phase, 60% of calories should come from carbohydrates, protein intake should be 1.2-2 g/kg/day and athletes should follow the recommendations of the food guide pyramid. During the pre-, per- and post-competition phase the healthy aspect of the diet passes to a second level, in order to obtain good sport performance and to guarantee a fast and effective recovery. Again, carbohydrates with a high or medium glycaemic index and water are the nutrients which have to be calculated more thoroughly. In conclusion, athletes have to follow a diet that is adequate to their higher energy output and to their higher metabolic turnover. The food guide pyramid is a graphic expression which facilitates the comprehension and following of a healthy diet. In the present article, the authors introduce the pyramid adapted to the characteristics of sports nutrition, with easy-to-follow practical recommendations regarding the kind and amounts of foodstuffs that should be consumed in order to cover nutrient needs of people who exercise regularly.**GonzÃ¡lez-Gross**, (2001).

It is the position of the Academy of Nutrition and Dietetics (Academy), Dietitians of Canada (DC), and the American College of Sports Medicine (ACSM) that the performance of, and recovery from, sporting activities are enhanced by well-chosen nutrition strategies. These organizations provide guidelines for the appropriate type, amount, and timing of intake of food, fluids, and supplements to promote optimal health and performance across different scenarios of training and competitive sport. This position paper was prepared for members of the Academy, DC, and ACSM, other professional associations, government agencies, industry, and the public. It outlines the Academy's, DC's, and ACSM's stance on nutrition factors that have been determined to influence athletic performance and emerging trends in the field of sports nutrition. Athletes should be referred to a registered dietitian nutritionist for a personalized nutrition plan. In the United States and in Canada, the Certified Specialist in Sports Dietetics is a registered dietitian nutritionist and a credentialed sports nutrition expert. **J AcadNutr Diet**. 2016

Conclusion

Nutrition plays a very important role in attaining optimal performance sports. Awareness and nutrition practise plays an important role in the performance of the sports persons.Eating to reach your peak performance level likely doesn't require a special diet or supplements. It's all about working the right foods into your fitness plan in the right amounts.Many athletes lack nutrition knowledge and hence have a poor nutrition practice habits which inturn affects their performance.Well-planned eating practices help athletes to train hard, stay healthy and injury-free, and compete at their best.

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Nutrition in the sport practice: adaptation of the food guide pyramid to the characteristics of athletes diet].

GonzÃ¡lez-Gross, M; GutiÃ©rrez, A; Mesa, J L; Ruiz-Ruiz, J; Castillo, M J, 2001

Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance

Sports Nutrition , Australian institute of sports

Teen Nutrition for Fall Sports,By Christine Rosenbloom, PhD, RDN, CSSDSeptember 7, 2018

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Effects of 6 week upper and lower limb heavy resistance training on the jumping performance and throwing ability on amateur male handball players

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Abstract

Background Of The Study: Muscle strength and power are very important factors that are responsible for the jumping performance and throwing ability in the game of handball. The competitors must participate in heavy resistance training programs in order to improve their jumping performance and throwing ability. Throwing ability is related to the dynamic strength and power of muscle contractions of upper extremity and the jumping performance is related to the combination of speed and explosive training.**Methods:** It Was Quasi Experimental Study Consisting 20 Handball Players, 10 In Each Group. Group A received heavy Resistance Training And Group B Received Conservative Training.**Results:** After 6 Weeks Of Heavy Resistance Training Program, The Data Was Analyzed Using Paired 'T' Test and the results showed that there was significant differences in the values of jumping performance ,12 and 3.86 in the experimental group and control group respectively.Significant differences were noticeable in the values of throwing distance, 8.63 and 1.088 in the experimental and control groups respectively. Significant differences were also noticed in the values of independent 't' test with 't' Value Of 9.968 In Vertical Jump And 8.831 In Throwing Distance Respectively.**Conclusions:**According To The Result, Heavy Resistance Training Protocol Shows Significant Improvement In The Jumping Performance And Throwing Ability When Compared To The Conservative Protocol.**Keywords:** Handball Players, Heavy Resistance Training, Throwing Ability, Jumping Performance

INTRODUCTION

Handball is a contact Olympic sport that is played professionally. It requires a combination of dynamic movements throughout the course of the game. It includes intense, intermittent activities include running, sprinting, and jumping as well as regular throwing, hitting, blocking and pushing between players and also catching and cutting maneuvers. In addition to technical and tactical skills, it has been argued that one of the key skills necessary for success in handball team is throwing performance. It is an important factor for scoring in handball. It is well known that successful shot on goal in handball players depends upon the throwing ability. There are two determining factors critical to the speed of ball release-

a) Those related to the mechanics of the throw.

b) Those related to the force development or power in the upper and lower extremities.

Therefore, throwing ability is related to dynamic strength and power of muscle contraction of upper extremities.

Another significant activity that is required in handball scoring is jumping performance emphasizing on the vertical jump height. The vertical jump is an essential scale that is utilized in highly competitive sports; the skill used to reach a point high above the ground. The vertical jump performance can help coaches to select the beat training stimulus in order to improve the individual performance of their athlete. Strength training is essential to develop the vertical jump capacity and consequently to perform specific offensive and defensive handball motor activity. Jumping performance is also related to speed and explosive training.

In order to improve the throwing ability and jumping performance strength training plays a vital role. Weight training or resistance training is the term given to strength training used to supplement or improve performance in other sports or activities. Physical conditioning of athletes plays an important role in improving the athletic performance. Resistance training is the total conditioning program for athletes. Increased strength through resistance training involves muscle adaptations resulting in muscle hypertrophy and hyperplasia.

The steps in formulating a strength training program depends on,

Materials And Methods

STUDY DESIGN

Quasi experimental study design was adopted for the study. In the current study the participants are given heavy resistance training for a period of six weeks.

STUDY SETTING

Department of Physical Education, PSG IMS&R Ground, PSG Hospitals, Coimbatore.

STUDY DURATION: Total study duration: 6 months

POPULATION AND SAMPLING

Amateur male hand ball players in the age group of 20-22 years, referred from the department of Physical Education, PSG College of physiotherapy, Coimbatore were chosen as population for this study. A total of 20 participants were selected by convenience sampling method. The nature, risks and benefits of the study were explained to the participants by the principal investigator. The participants were allocated after obtaining their consent.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Handball players with a playing experience of minimum 1 year
- Age: 20-22 years BMI: 19-25

EXCLUSION CRITERIA

- Goal keepers
- Unfit players (for example, getting injured during the training sessions)
- Recent upper and lower limb trauma
- Recent upper and lower limb surgery

INSTRUMENT AND TOOL FOR DATA COLLECTION

MEASUREMENT TOOL:

- One repetition maximum score
- Vertical jump testThrowing distance using inch tape measurement

HEAVY RESISTANCE PROTOCOL

EXERCISES	**SESSION 1**	**SESSION 2**	**SESSION 3**	**SESSION 4**	**SESSION 5**	**SESSION 6**
BENCH PRESS	80% RM; 3 SETS, 3 REPS	80% RM; 3SETS, 5 REPS	85% RM; 3 SETS, 3 REPS	85% RM; 3 SETS, 5 REPS	90% RM; 3 SETS, 2 REPS	90% RM; 3 SETS, 3 REPS
PULL-OVER	80% RM; 3 SETS, 3 REPS	80% RM; 3 SETS, 5 REPS	85% RM; 3 SETS, 3 REPS	85% RM; 3 SETS, 5 REPS	90% RM; 3 SETS, 2 REPS	90% RM; 3 SETS, 3 REPS
HALF-BACK SQUAT	80% RM; 3 SETS, 3 REPS	80% RM, 3 SETS, 4 REPS	85% RM; 3 SETS, 4 REPS	85% RM; 3 SETS, 6 REPS	90% RM; 3 SETS, 3 REPS	90% RM; 3 SETS, 4 REPS

EXERCISES	**SESSION 7**	**SESSION 8**	**SESSION 9**	**SESSION 10**	**SESSION 11**	**SESSION 12**
BENCH PRESS	90% RM; 3 SETS, 4 REPS	90% RM; 3 SETS, 5 REPS	95% RM; 3 SETS, 2 REPS	95% RM; 3 SETS, 3 REPS	95% RM; 3 SETS, 4 REPS	95% RM; 3 SETS, 4 REPS
PULL-OVER	90% RM; 3 SETS, 4 REPS	90% RM; 3 SETS, 5 REPS	95% RM; 3 SETS, 2 REPS	95% RM; 3 SETS, 2 REPS	95% RM; 3 SETS, REPS	95% RM; 3 SETS, 4 REPS
HALF-BACK SQUAT	90% RM; 3 SETS, 5 REPS	90% RM; 3 SETS, 6 REPS	95% RM; 3 SETS, 3 REPS	95% RM; 3 SETS, 2 REPS	95% RM; 3 SETS, 5 REPS	95% RM; 3 SETS, 5 REPS

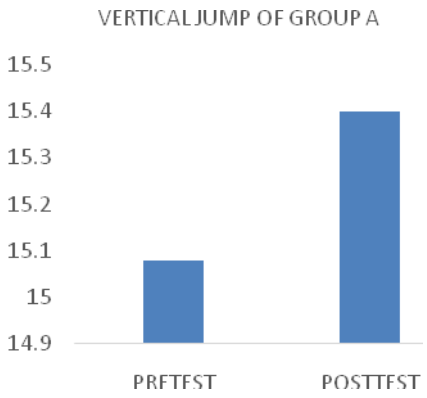
NUMBER OF WEEKS	EXERCISE	SETS	REPETITIONS
1st	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3
2nd	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3
3rd	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3
4th	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3
5th	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3
6th	HALF BACK SQUAT, BENCH PRESS, PULL OVER	3-6	1-3

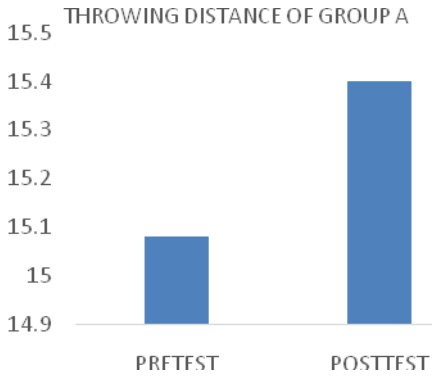
RESULTS AND DISCUSSION

A total of 20 participants were included in the study, and they were divided into two groups; experimental group and control group. Experimental group took part in the heavy resistance training program for a period of 6 weeks and the control group followed their regular handball regimen for a period of 6 weeks. Vertical jump and throwing distance were chosen as outcome measures for the study. Data were collected before and after the training and compared. None of the participants experienced any discomfort during the training session.

The obtained data were analyzed. The pre-test and post-test values of vertical jump height and throwing distance of the heavy resistance group was taken before and after the training program and it is presented in **Graph 1 & Graph 2**

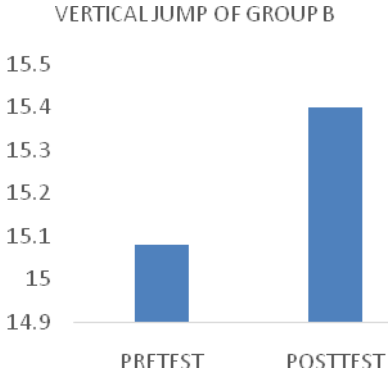
GRAPH 1 **GRAPH 2**

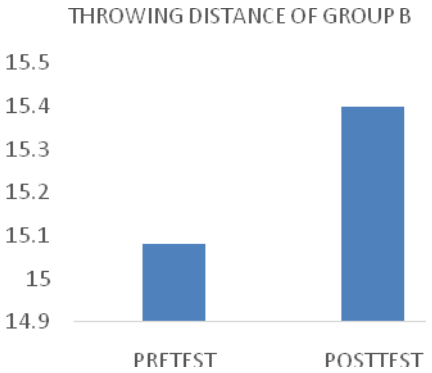




The pre-test and post-test values of vertical jump height and throwing distance of the control group was taken before and after the training program and it is presented in **Graph 3 Graph 4**

GRAPH3 **GRAPH 4**





The paired ‘t’ test for vertical jump is performed within a single set, after a period of 6 weeks and the values are 12 and 3.86 for the experimental and control group respectively. The paired ‘t’ test for throwing distance performed within a single set and the values are 8.63 and 1.088 for experimental and control group respectively. The calculated independent ‘t’ test value of Group A and Group B were 9.968 in vertical jump and 8.831 in throwing distance respectively.

The independent ‘t’ test value of Group A and Group B is presented in Table 1 & 2

The vertical jump height mean and throwing distance mean of the Group A & Group B was taken before and after the training program and it is presented in **Graph 5 & Graph 6**

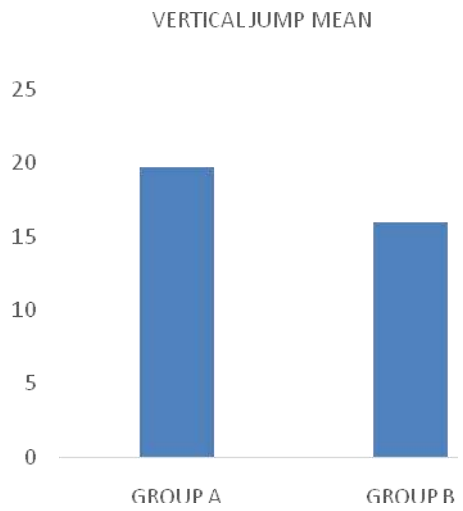
Table 1- VERTICAL JUMP INDEPENDENT 't' TEST

Vertical jump height	No. of participants	Mean	Mean difference	Standard deviation	't' value	'P 'value
GROUP A	10	19.65	3.72	0.6734	19.16	<0.001
GROUP B	10	15.93				

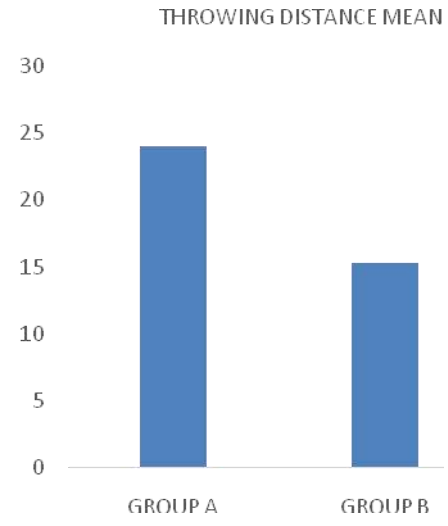
Table 2 - THROWING DISTANCE INDEPENDENT 't' TEST

Vertical jump height	No. of participants	Mean	Mean difference	Standard deviation	't' value	'P 'value
GROUP A	10	24.02	8.64	0.6439	7.6036	<0.001
GROUP B	10	15.38				

GRAPH 5



GRAPH6



Conclusion

With reference to statistical analysis and interpretation of the study, it is concluded that the heavy resistance training protocol shows significant improvement in the jumping performance and throwing ability when compared to the conservative protocol.

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Performance and Kinematics of Various Throwing Techniques in Team-Handball

Herbert Wagner, Jürgen Pfusterschmied, Serge P. von Duvillard and Erich Müller

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A Comparativestudyof Agility,Flexibility and Explosive power of National level Player of Karate, Boxing and Taekwondo

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R.V.Patel College of Commerce
V.L.Shah College of Commerce (G.M.)
Sutexbank College of ComputerApplication and Science

Introduction:

ItistheconceptthattheartofKarate-docanbetracedbacktosixthcenturyinChina.The oriental martial arts have an old history and tradition. Having appeared at drawn of the civilization and changing with the development of the humanity and social system. The served not only as a means of self -defence but also were an integral part of the culture accumulating and increasing the greatest achievement in the various fields of knowledge and above all the knowledge about the human being themselves their inner world. The time when Chinese martial arts appeared was not reflected in any of the historical documents the fighting techniques weredescovered and developed during a long period of continuous conflict between men and animal or between tribes the experience of the conflict was accumulating and techniques created on its base were passed from generation to generation.

Karate, Boxing and Teakwondo is the combination of different activities like jumping, kicking, punching, blocking, attacking and defensive, so art in sports the study is made to compare of national level players of Karate, Boxing and Teakwondo.

Methodology

The purpose of the study is to compare the agility, flexibility and explosive strength of players of karate, Boxing and Teakwondo. For the study total number of 30(10in each group) national players of Karate, Boxing and Trakwondi.Theal age of the subject are between 18 to 21 years . For the measurement of agility the shuttle run test was conducted for the measurement of flexibility seat and reach test was conducted and for the measurement of explosive strength the standing broad jump test was conducted.

Analysis of Data

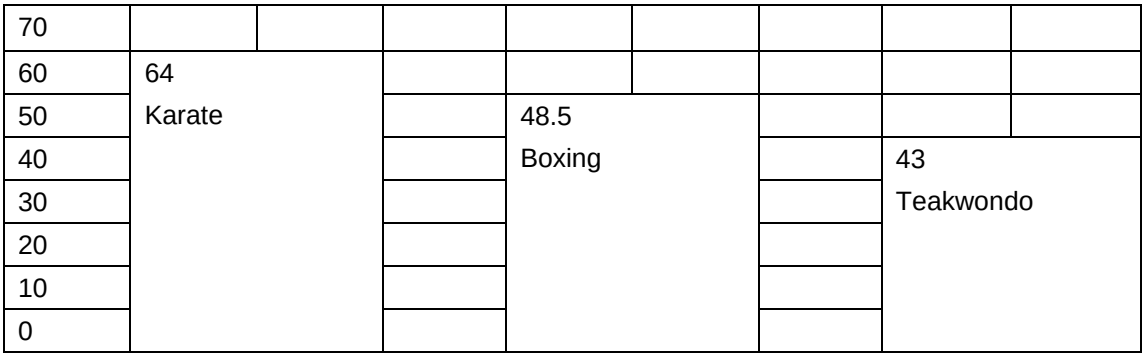
For the Statistical analysis the ' F' test (ANOVA) was taken in use ANOVA was calculated at 0.05 level of significance. Analysiswas based on "F" ratio calculation through " ANOVA".

TABLE-1

Groups	Mean		S S	DF	MMS	"F "Ratio
Karate	64.00	BETWEEN Group	2371.67	2	1185.83	9.41
Boxing	48.50					
Teakwondo	43.00	Within Group	2402.50	27	126.01	

Significant level at 0.05F =[2, 27] =3.35

Graph -1



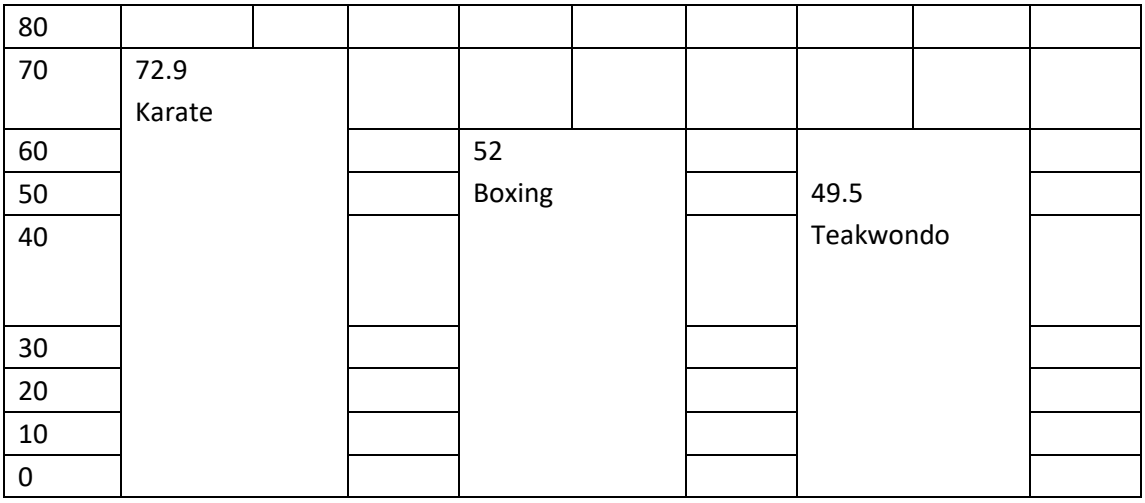
MEAN

Table 2

Group	Mean		SS	DF	MMS	"F" Ratio
Karate	72.92	Between Group	3302.07	2	1651.03	13.72
Boxing	52.00					
Teakwondo	49.50	Within Group	3249.40	27	120.35	

Significant level at 0.05=(2.27)=3.35

Graph - 2



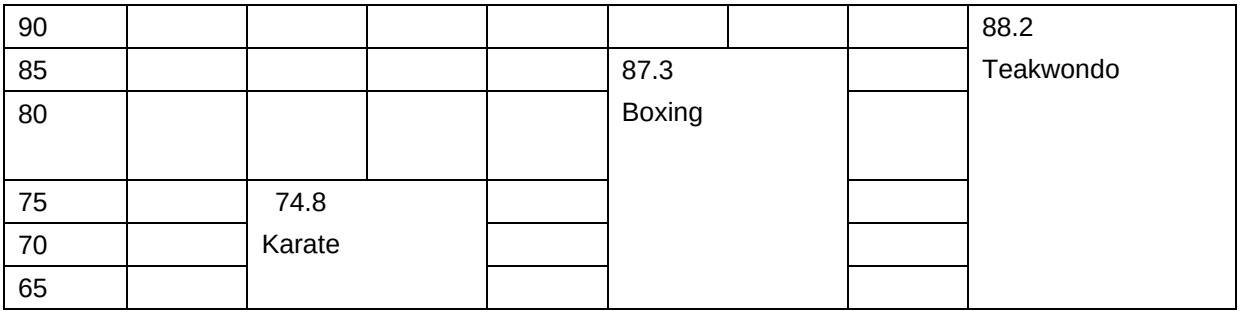
MEAN

Table 3:Mean and F - Ratio of three different groups in Explosive Strength

Groups	Mean		SS	DF	Mean Square	"F" Ratio
Karate	74.80	Between Groups	1122.07	2	561.03	4.39
Boxing	87.30					
Teakwondo	88.20	Within Groups	3453.30	27	127.90	

Significant level at 0.05F= (2,27)=3.35

Graph - 3



MEAN

Conclusion:

Within limitations of the present study following conclusion may be drawn

1. The agility and flexibility of karate player is better than boxing day Teakwondo players
2. In the explosive strength of Boxing and Teakwondo players was better than karate players.

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The Effect of Resistance Training and Circuit Training on selected Physical and Physiological Variables Among College Male Boxing Players

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Introduction

The Resistance training has two primary functions in a workout programme; instability and support. Instability during an exercise forces you to engage your core muscles to maintain your balance, making the exercise more difficult. Training the core with instability helps to develop a strong support system for your legs and back, which prevents injuries and helps you to get the most out of exercise routine. The Training can also be used to support your back as you work on developing core stability. For instance, you can place the ball against the wall and lean your back against it as you do a squat.To add lower back support to an abdominal crunch, sit on the ball, walk your feetout in front of you until you are lying backon the ball with a neutral spine, and do crunches from there.Rutherford and Jones (1986) suggested that addoptions from resistance training resulted in better coordination of synergistic and stabilizer muscles. Behm(2002) and colleagues reported the effect of unstable conditions, as induced by setting on Swiss Ball on force production of the knee extender's. Robert examined the effects of Swiss Ball exercise on core stability and stated that there is a improvement in core strength among the subjects.

Objective of the Study:

The main objective of the Study was to find out the Effect of Resistance Training and Circuit Training on silected Phyy and Psychological variables among college male Boxing Player.

Methodology

Selection of Subject:

Thirty male Boxers were silected from Jivan Jyoti Trust Education Society who have represented an inter collegiate tournament. The purpose of the study is to compare the agility, flexibility and explosive strength of players of karate, Boxing and Teakwondo. Theal age of the subject are between 18 to 21 years .

For the measurement of agility the shuttle run test was conducted for the measurement of flexibility seat and reach test was conducted and for the measurement of explosive strength the standing broad jump test was conducted.

Analysis of Data

For the Statistical analysis the ' F' test (ANOVA) was taken in use ANOVA was calculated at 0.05 level of significance. Analysiswas based on "F" ratio calculation through " ANOVA".

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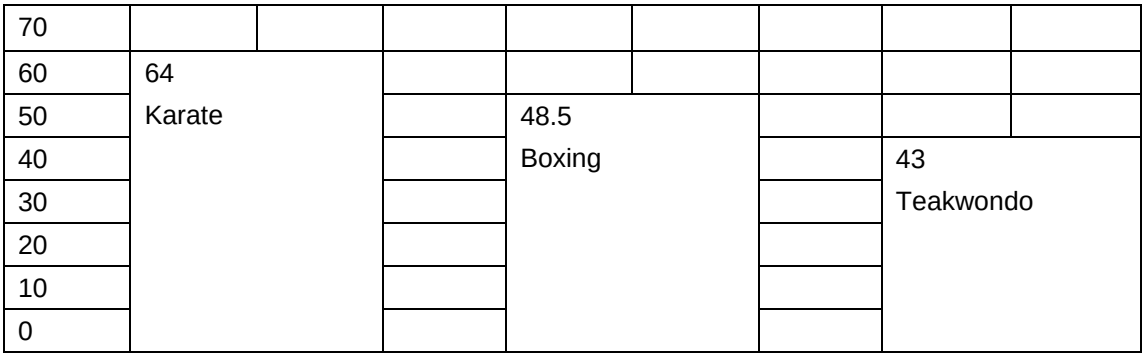

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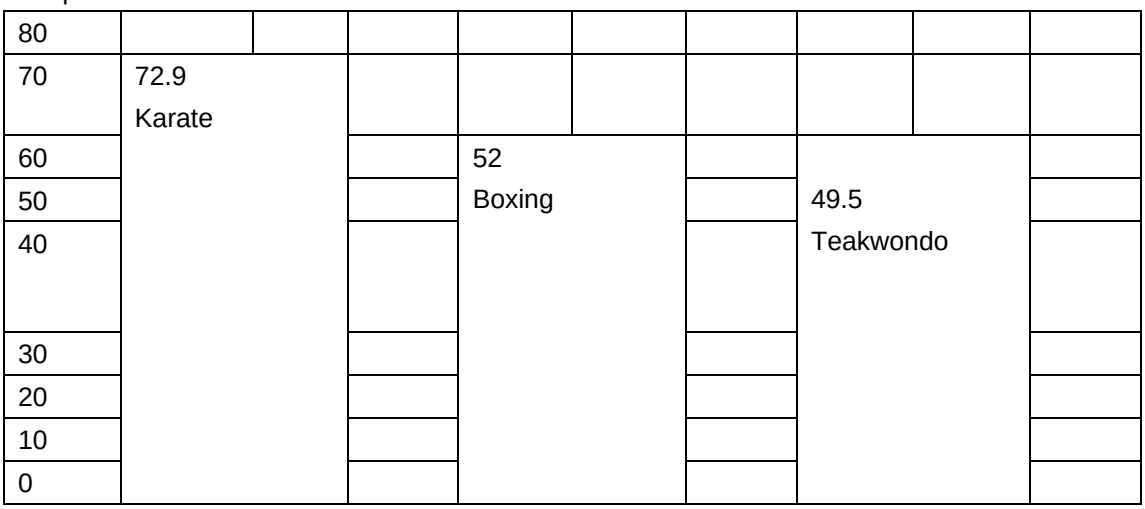

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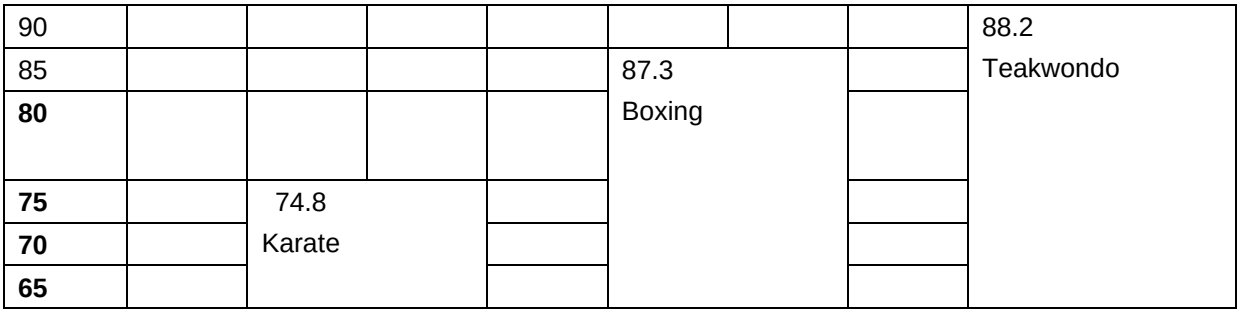

MEAN

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2. In the explosive strength of Boxing and Teakwondo players was better than karate players.

Reference

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Individualized Effect And Compared Effect Of Various Muscle Specific Resistance Training On Muscular Strength And Body Compositionamong Inter-Collegiate Hockey Players.

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Abstract
The study was to find out the individualized effect and compared effect of various muscle specific resistance training on muscular strength and body composition among inter-collegiate hockey players. For this purpose sixty intercollegiate hockey players were selected from participants of district level inter-collegiate tournament. The subject's age ranged from 18 to 25 years. The subjects were divided into two equal groups of thirty each. Group-I underwent Various Muscle Specific Resistance Training Group (VMSRTG), Group – II acted as control group. The duration of the training period was restricted to twelve weeks and the number of sessions per week was confined to three. Analysis of Variance (ANOVA) was applied to determine whether the programmes of training produced significant improvements in selected variables after twelve weeks of training. After twelve weeks of various muscle specific resistance training the experimental group showed significant improvement on muscular strength and body composition.KEYWORDS: muscular strength, body composition, hockey.

Introduction

Resistance training is a form of exercise for the development of strength and size of skeletal muscles. Resistance training, also known as weight training is for everyone. According to the American Sports Medicine Institute (ASMI) resistance training is a "specialized method of conditioning designed to increase muscle strength". Resistance training can be performed in a variety of ways with resistance machines, free-weights (dumbbells and barbells), rubber tubing, or own body weight, as in doing pushups, squats or abdominal crunches.

Benefits Of Resistance Training

As the goal of resistance training, the ASMI says, is to “gradually and progressively overload the musculoskeletal system so it gets stronger”. Regular resistance training will strengthen the bones, and strengthen the muscles. According to *Keith Cinea*, any fitness programme should include resistance training, along with aerobic exercise and flexibility training. Aerobic workouts, which strengthen the cardiovascular system, focus primarily on the large muscle groups of the lower body. Strength training offers a way of balancing that out by challenging all the major muscle groups, including those in the chest, arms, back and abdomen. According to medical research, generally the resistance training strengthens the muscular system, strengthens the skeletal system, and improves bone density (decreases the chance of osteoporosis) and increases metabolism. So a well -planned resistance training program should be a part of everyone’s health, fitness and lifestyle regardless of age, gender or goals.

Muscular Strength

Muscular strength is defined as the maximum amount of force that a muscle can exert against some form of resistance in a single effort. ... In the gym, a single repetition at a given weight is an example of muscular strength

Body composition

Body composition is used to describe the percentages of fat, bone, water and muscle in human bodies. Because muscular tissue takes up less space in the body than fat tissue, body composition, as well as weight, determines leanness.

STATEMENT OF THE PROBLEM

The present study was to find out the individualized effect and compared effect of various muscle specific resistance training on muscular strength and body composition among inter-collegiate hockey players.

METHODOLOGY

For the purpose of this study 60 players were selected randomly from AcharyaNagarjuna university the age of the subject were in the range between 18 – 25 years. Muscular strength and body composition was selected as the study variables. All the subjects were divided into two equal groups each group consist of 30 subjects. The pre-test (initial) push-ups for muscular strength and skin fold measurement for body composition was conducted and the performance was recorded for both the group. Group I underwent various muscle specific resistance training(VMSRTG) for 12 weeks and group II control group(CG) was not given any treatment after 12 weeks the post-test was conducted for group I and group II.

STATISTICAL TECHNIQUE

Analysis of Variance (ANOVA) was applied to determine whether the programmes of training produced significant improvements in selected variables after twelve weeks of training.

RESULTS

Table – 1 :Computation of Analysis of Variance of pre and post test for the group I and group II on muscular strength

test	Group I	Group II	SV	SS	DF	MS	F-ratio
Pre-test	30.39	29.92	Between	15.00	1	15.00	1.62
			Within	537.73	58	9.27	
Post-test	36.10	30.6	Between	453.15	1	453.75	43.15*
			Within	609.90	58	10.52	

*significant at 0.05 level (4.01)

The table I shows the pre and post test mean of muscular strength for the both groups. The pre test means of the group I and group II were 30.39 and 29.92 respectively. The obtained F value on the pre test score 1.62 was lesser than the table value 4.01 significant at 0.05 level. It proved that there was no significant difference between the group at the initial stage and randomization at the initial stage was equal post test mean for the group I and group II were 36.10 and 30.6 respectively. The obtained F value on the post test score 43.15 was greater than the table 4.01 and was significant at 0.05 level. Post test score analysis proved that there was significant difference between the groups.

Figure I:**Bar Diagram Showing The Mean Values Of Pre-Test And Post-Test On Muscular Strength OF VMSRTG AND CG**

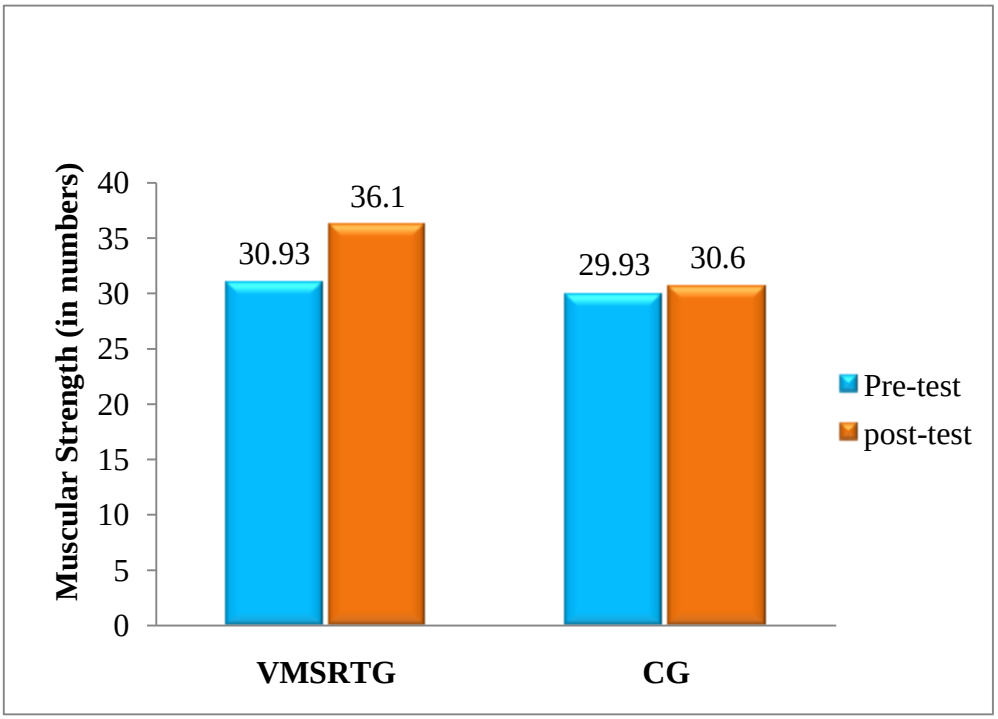


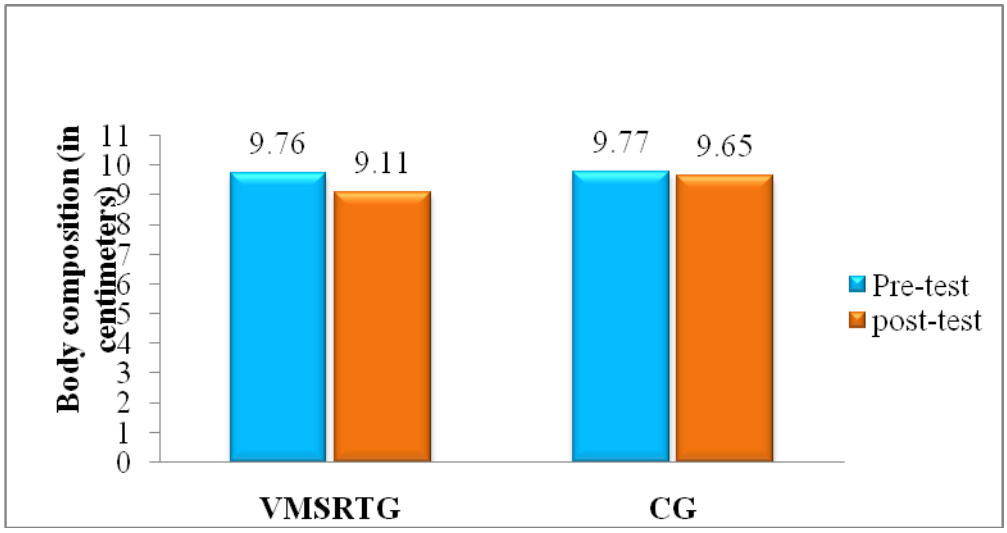
Table – II:Computation of Analysis of Variance of pre and post test for the group I and group II on body composition

test	Group I	Group II	SV	SS	DF	MS	F-ratio
Pre-test	9.76	9.77	Between	0.00	1	0.00	0.01
			Within	15.55	58	0.27	
Post-test	9.11	9.65	Between	4.43	1	4.43	17.57*
			Within	14.61	58	0.25	

**significant at 0.05 level (4.01)*

The table II shows the pre and post test mean of body composition for the both groups. The pre test means of the group I and group II were 9.76 and 9.77 respectively. The obtained F value on the pre test score 0.01 was lesser than the table value 4.01 significant at 0.05 level. It proved that there was no significant difference between the group at the initial stage and randomization at the initial stage was equal post test mean for the group I and group II were 9.11 and 9.65 respectively. The obtained F value on the post test score 17.57 was greater than the table 4.01 and was significant at 0.05 level. Post test score analysis proved that there was significant difference between the groups.

Figure I: Bar diagram showing the mean values of pre-test and post-test on Body Composition of VMSRTG and CG



Conclusions

It was concluded that the experimental group made a significant changes on selected physiological variables namely muscular strength and body composition from base line to post test.The control group did not show any significant difference in this study.

Recommendations

From the present study, it may be concluded that the improvement on selected physiological variables muscular strength muscular and body composition. Hence, Trainers and Physical Educators could adopt such training to improve specific resistance training group among their athletes.A similar study may be conducted by selecting on physiological and other performance factors as criterion variables.A similar study may be attempted by selecting the school level hockey players as subjects.A similar study may be conducted on female as subject.A similar study may be undertaken to analyze the hematological factors.

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Benefits of Massage for Sports Persons

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Introduction:

Massage increases the blood flow through the area being massaged, i.e. it produces hyperaemia. The delivery of nutrients and oxygen is therefore increased. These are required for muscle contraction and also to aid recovery of the muscles and maintain them in good condition. Massage generates heat in the tissues through the friction of the hands moving over the surface; through the friction between the tissues as they move over one another; through the dilation of vessels and capillaries, which allows more warm blood to flow through the part. Warmth increases the metabolic rate, which will improve the condition of the tissues. Warmth also improves flexibility of the tissues, muscle fibres, fascia, tendons and ligaments, which are therefore less prone to strains and sprains. Warm muscles contract more efficiently than cold muscles.Deep massage movements exert pressure on the tissues, which increases the permeability of cell membranes. This facilitates the exchange of tissue fluids between cells and vessels. Nutrients and oxygen are transported into the cells more efficiently and waste products transported out.

Discussion:

Massage speeds up venous and lymphatic drainage from the area, which removes the waste products of metabolism. Following training or performance, the waste productssuch as lactic and pyruvic acids build up within the muscle, producing pain andstiffness. The increased pressure produced by these acids also interferes with therecovery of the muscle.

Massage flushes these substances out of the muscles, thusreducing pain and stiffness and speeding up muscle recovery. Speedy recovery allows theathlete to fit in more training, which will raise the standard of performance.

Massage increases the flexibility of the tissues. Stretching manipulations such as wringing and muscle rolling move the tissues transversely. This stretches the muscle fibres and facial compartments to a greater extent than the longitudinal pull of stretch exercises. Muscles are also lifted and moved over supporting structures, muscle bundles are separated and fascial compartments are stretched. This greatly increases flexibility and extensibility, which will improve performance and reduce the risk of injury.Massage provides an early warning system to the risk of potential injury. Areas of tightness or tension may be detected in the course of a massage. Appropriate stretch manipulations and exercise can then be advised to overcome the problem and restore flexibility.

Massage will break down or stretch inflexible scar tissue found in muscles, tendons or ligaments of the sportsperson. These may be the result of past injuries or over-use. Scar tissue is part of the healing process and is laid down between the torn parts. It forms a tight inflexible mass that interferes with the normal function of the muscles or ligaments. Deep, short stroking movements or frictions will break down, or improve the flexibility of, this tissue, thus restoring function.

Massage will break down adhesions within the muscles. Exudates is part of theinflammatory healing process. If it is not quickly absorbed it becomes sticky and binds down the tissues, causing them to stick to one another. Deep friction will loosen and free these structures, allowing muscles and tendons to function normally.

Massage around joints will improve the circulation and generate warmth. This will improve the condition of joints and maintain the flexibility of joint structures. Frictions around the joint will break down adhesions from old traumas and free ligaments to function normally. Massage improves flexibility and elasticity of hard, bulky, inelastic muscles following hard isometric exercise training. These exercises impede the free flow of blood to the muscle, which slows down the metabolic rate. The condition of the muscle deteriorates, which reduces the level of performance.

Regular massage and other forms of training will prevent this deterioration.
Massage will promote local or general relaxation. The warmth generated in the tissues will aid relaxation. The fast removal of metabolic waste will prevent pain and stiffness developing, thus relieving tension. The rhythmic stretching manipulations promote relaxation. Slow rhythmical massage has a soothing effect on the nervous system. These movements produce a reflex response, which releases tension. General massage also has an effect on the autonomic nervous system, which improves relaxation.

Conclusion:

Massage may be used in four distinct categories to help sportspeople. Although all the basic massage manipulations may be used, certain considerations and adaptations must be made. It is important that athletes and their trainers are aware of these differences and appreciate their effects.

Massage may be given in the following instances:Before an event or performance (pre-event massage)After an event or performance (post-event massage)As part of the training programme (training massage)As a rehabilitation treatment (treatment massage).

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Comparison of Speed among Sprinters and Long Jumpers of Schools in Hyderabad District of Telangana State

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Abstract:
Sprinting is the act of running over a short distance at (or near) top speed.The purpose of the present study to find out the Speed among Sprinters and Long Jumpers of Schools in Hyderabad. The sample for the present study consists of 30 Male Sprinters and 30 Male Long Jumpers of Hyderabad.To assess the Speed the 30 M Run Test Were conducted among Sprinters and Long Jumpers. It was found that Sprinters are having Just better Performance to Long Jumpers. There is no significant difference in the speed between sprinters and long jumpers.Key Words: Sprinters, Long jumpers, speed etc.

Introduction:
Sprinting is the act of running over a short distance at (or near) top speed. It is used in many sports that incorporate running, typically as a way of quickly reaching a target or goal, or avoiding or catching an opponent. Human physiology dictates that a runner's near-top speed cannot be maintained for more than 30–35 seconds due to the accumulation of lactic acid in muscles. In athletics and track and field, sprints (or dashes) are races over short distances. They are among the oldest running competitions. The first 13 editions of the Ancient Olympic Games featured only one event—the stadion race, which was a race from one end of the stadium to the other. There are three sprinting events which are currently held at the Summer Olympics and outdoor World Championships: the 100 metres, 200 metres, and 400 metres. These events have their roots in races of imperial measurements which were later altered to metric: the 100 m evolved from the 100 yard dash, the 200 m distances came from the furlong (or 1/8 of a mile) and the 400 m was the successor to the dash or quarter-mile race. The three phases of sprinting are acceleration, running at full speed and running quickly while fatigued. These three stages take place during any type of sprinting,
Sprinting events are the fastest competitions in track. They happen so quickly, they may seem like a single sprinting stage. But sprinters -- including hurdlers and relay runners -- all go through three distinct phases: drive, maximum velocity and maintenance.

The **long jump** (formerly commonly called the "broad jump") is a track and field event in which athletes combine speed, strength, and agility in an attempt to leap as far as possible from a take off point. This event has been an Olympic medal event since the first modern Olympics in 1896 (a medal event for women since 1948) and has a history in the Ancient Olympic Games.

There are five main components of the long jump: the approach run, the last two strides, takeoff, action in the air, and landing. Speed in the run-up, or approach, and a high leap off the board are the fundamentals of success. Because speed is such an important factor of the approach, it is not surprising that many long jumpers also compete successfully in sprints.There are three major flight techniques for the long jump: the hang, the sail, and the hitch-kick. Each technique is to combat the forward rotation experienced from take-off but is basically down to preference from the athlete. It is important to note that once the body is airborne, there is nothing that the athlete can do to change the direction they are traveling and consequently where they are going to land in the pit. However, it can be argued that certain techniques influence an athlete's landing, which can have an impact on distance measured. For example, if an athlete lands feet first but falls back because they are not correctly balanced, a lower distance will be measured.

Methodology:

AIM: To find out the Speed between Male Long Jumpers and Male Sprinters of Hyderabad, Telangana, India.

SAMPLE:

The sample for present study consists of 30 Male Long Jumpers and 30 Male sprinters o between the age group of 13to 16 years of schools in Hyderabad .

TOOLS: 30 Meter Run is used to collect the data for speed .

30 Meters sprint Test:

Objective:To monitor the development of the athlete's maximum sprint speed.

To undertake this test you will require:

• Flat non-slip surface, Cones and Stopwatch

• Assistant

This test requires the athlete to sprint as fast as possible over 30 metres

• The athlete warms up for 10 minutes

• The assistant marks out a 30 metre straight section with cones

• The athlete starts in their own time and sprints as fast as possible over the 30 metres

• The assistant starts the stopwatch on the athlete's 1st foot strike after starting and stopping the stopwatch as the athlete’s torso crosses the finishing line

• The test is conducted 3 times

• The assistant uses the fastest recorded time to assess the athlete’s performance.

Results and Discussion:

The results of the Study shows that Sprinters are having good Speed Compare to Long jumpers. The Long Jumpers generally requires training in a variety of areas. These areas include Speed work, jumping, weight training, plyometric training, bounding and flexibility. The Sprinters also requires training to improve the technique, speed work, plyometric training, bounding etc to improve all the motor qualities. Both Sprinters and Long Jumpers requires good technical and conditioning training to excel in the performance.

Table: 1 Showing the Performance of Long Jumpers and Sprinters in 30 M Sprints.

Group	N	Mean	Std. Deviation	t	Sig.
Long Jumpers	30	4.619	0.224	0.484	0.630
Sprinters	30	4.592	0.217		

In Table –I the Mean Values of Long Jumpers is 4.619 and sprinters is 4.592. The Standard Deviation of Long Jumpers is 0.224 and Sprinters is 0.217 and t is 0.484. Inspite the Sprinters mean is better than Long jumpers but they are very close to each other. There is no significant difference between Long Jumpers and Sprinters in Speed.

Conclusions:

It is concluded that Sprinters are having slightly higher speed Compare to Long Jumpers. The Sprinters and Long jumpers are both nearly equal in speed. Coaches must give Coaching to the sprinters and Long jumpers to improve their motor qualities to excel in the performance.

Recommendations:

Similar Studies can be conducted among females and in other events in athletics. This type of studies is useful for preparing the coaching and condition program for improvement of motor qualities among the long jumpers and sprinters.

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Wikipaedia, Long Jump