

Volume - 32 No. 1  
QUARTERLY  
October 2018 to December 2018



International Federation of  
Physical Education, Fitness and  
Sports Science Associations

[www.ifpefssa.org](http://www.ifpefssa.org)



ISSN 2231-3265  
(Online and Print)

# International Journal of Health, Physical Education & Computer Science in Sports

A Peer Reviewed (Refereed)  
International Research Journal

Published by :

Indian Federation of Computer Science in Sports

[www.ijhpecss.org](http://www.ijhpecss.org) & [www.ifcss.in](http://www.ifcss.in)

Publication Impact Factor I2OR 4.005

ISRA Journal Impact Factor 5.115

Index Journal of



<b>Publisher:</b> <b>Indian Federation of Computer Science in sports</b> <b>www.ijhpecss.org and www.ifcss.in</b> <b>under the auspices of</b> <b>International Association of Computer Science in sports</b> <b>Email:rajesh2sports@gmail.com</b>	<b>International Journal of Health, Physical Education and Computer Science in sports</b> <b>ISSN 2231-3265 (On-line and Print)</b> Journal Impact factor is 5.115.Journal published Quarterly for the months of March, June, September and December. IJHPECSS is refereed Journal.Index Journal of Directory of Research Journal Indexing, J-Gate, 120R etc
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## A Study On Skill Performance Of Tennis Players In International Match

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### Abstract

Sport is accepted as part of society and culture throughout the world. Sports and games also effect on social processes, human values, social life and International affairs. It is Universal in the sense that it is practiced in every country and yet it does not always take the same form in each country. The present study deals with which the skill performance of sportsman in Tennis and to find out how these skills are effective in the International tournament. Purpose of the study is to analyse the skills that most frequently used by the lawn tennis player in Inter-National matches of Wimbledon tournament. Data were collected from Wimbledon semi-final and final matches through the video recorder of that tournament-2015 were taken. By observing video recorded motion picture, Investigator noted, all the skills used in the matches. Result can be checked and verified on the light of hypothesis to prove the purpose of this study. It might understand that, most of the basic skills are executed more are than the advance skills. From this investigator conclude that, service and drives are the skill is used highest number of repetition to score maximum points in these three matches of Inter-National Wimbledon tournament to secure the top ranking. At the end of the match, researcher opines that, for the purpose of analysis result was taken from the video records is more accurate then manual analysis of results in the live matches. In spite this following recommendation were made, this type of study can be implementing in other game. In Inter-National tournament study the skills and behavior of the player to improve the performance of the each player in their future. Changes or adaptation of techniques, skills and usable playing equipment for respective game.

### Introduction

Sport is accepted as part of society and culture throughout the world. Sports and games also effect on social processes, human values, social life and International affairs. It is Universal in the sense that it is practiced in every country and yet it does not always take the same form in each country. Fitness is the ability to perform physical tasks with the minimum of efforts. This means that fitness is associated with efficiency. The fitter one works efficiently, and this increasing efficiency affects the whole of your body organism. It can combat depression, and illness, positive attitude towards all aspects of life and lead to greater mental clarity.

Physical fitness is not only one of the most important keys to a healthy body. It is the basis of dynamic and creative intellectual activity; the eminent Physical Education theorist went on to say that without physical fitness. "We will undermine our capacity for thought, for work and for the use of that skill vital to an expending or a complex nation" Skill related physical fitness includes power, speed, agility, balance, and Co-ordination and re-action time. Sports are of great significant to human life because it is deeply involved with various institutions of society. Sports activities are the major recreational and fitness tools; through it peoples maintain & improve their health and fitness. The present study deals with which the skill performance of sportsmen in Tennis and to find out how these skill are effective in the International tournament.

## Methodology

The purpose of present study was to make a quantitative analysis of offensive skill performance of tennis players during the men's Wimbledon Inter-National tournament. The main objective of this study was to analyse the best offensive and defensive skills used by player during the playing condition of matches. By observing entire matches played in Wimbledon men's tournament held on 2015. The researcher fulfil this study, through videos of the three matches were taken into consideration. The data were shown in repetition of skills and techniques during the match and it had converted in to percentage with using tables and graphs.

## Analysis And Interpretation Of Data

The analysis and evaluation of performance is based on the performance given by the play and it depend on the present condition of skills or techniques used the players as per the opponent playing actions, skills and complexities of performance. The exact and entire measurement of all skills actions and the player's performance in a match becomes very difficult. A quantitative analysis with the objective, reliable result were based on the recording of video analysis performance, analysis of data has been based on the techniques and skills executed in the matches. Appears to provide the most useful record of performance. The investigator decides on a checklist and digital video display of recorded performance of the matches were observed and analysed, for the purposes of scoring and recording of offensive and defensive skills performance with adding the percentage on the basis of performance.

**Table No. 01 NUMBER OF TOTAL REPETITION OF SKILLS AND TECHNIQUES**

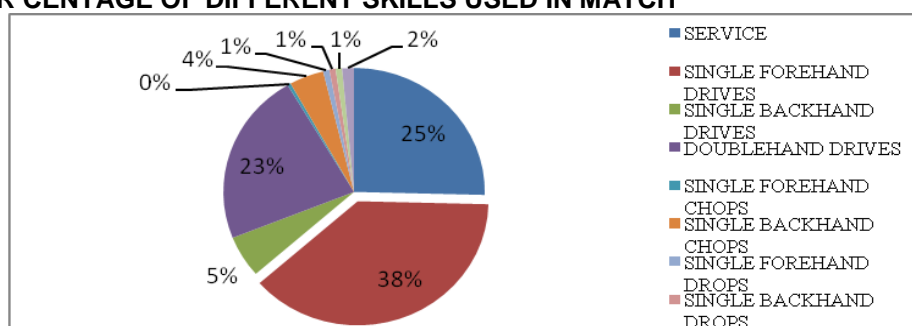
Sl.No	SKILLS		FIRST SET	SECOND SET	THIRD SET	FOURTH SET	NO. OF REPETITION	Per cent age
1	SERVICE		194	96	112	149	551	25
2	DRIVES	SINGLE FOREHAND	309	138	178	204	829	38
		SINGLE BACKHAND	29	32	25	25	118	5
		DOUBLEHAND	177	91	141	79	488	22
3	CHOPS	SINGLE FOREHAND	6	0	2	1	9	0
		SINGLE BACKHAND	30	22	16	25	93	4
4	DROPS	SINGLE FOREHAND	5	1	7	4	17	1
		SINGLE BACKHAND	8	2	5	2	17	1
5	SMASH		3	4	8	2	17	1
6	LOB		10	4	14	4	32	1

Above table and graph no. 01 represented the overview of repetition of skills and techniques exhibited in different sets. Total number of skills exhibited in each set is different. Because, it depends on player fitness, present condition of mental ability, their talent in playing situation and opponent playing ability. In this table total major six skills were considered for the assessment of player's ability, even though it is not enough to assess the standard of the players, that too with the semi-final and final match of Wimbledon. The investigator tries his level best to give the best result with available data. In first set maximum

number of services and drives are exhibited compared to other sets, because of player's fitness and level of strength endurance has more in first set. Where as in second and other sets minimum number of services and drives are exhibited, it may causes due to their level of fitness and playing ability as well as psychological of failure and success of techniques.

By analysing the data collected during the semi-final and final matches, it is clearly state that, maximum number of repetition of skills exhibited in Inter-National tournament. As per the each and every techniques and skills are analyse as follows, service- 25 per cent (551), single forehand drive- 38 per cent (829), single backhand drive- 5 per cent (118), double hand drive- 22 per cent (488), It shows that, the maximum repetition of single forehand drive skill is played in this game. In chops skills, single backhand as played 4 per cent (93) times and single forehand played as 01 per cent (9), it shows the single backhand as played more than the single forehand due to get success in the rally as well as to get score and secure positive result in the match . Single forehand and backhand was equally repeated of 17 times. In Smash skill 17 times is repeated and Lob was 32 times repeated. Normally players are executed the skills in spite of complexity, they were try to create more difficult situation to execute the technique by opponent. It is simple mental logic for all the winning players.

**Graph No. 1. PER CENTAGE OF DIFFERENT SKILLS USED IN MATCH**



This analysis shows that comparing of all the skills and techniques used in the game. The maximum number of time repeatedly used the skills and techniques were performed by the player during the competition situation is drives skill of 68%. It is most frequently used for safe return and get success or control over the matches.

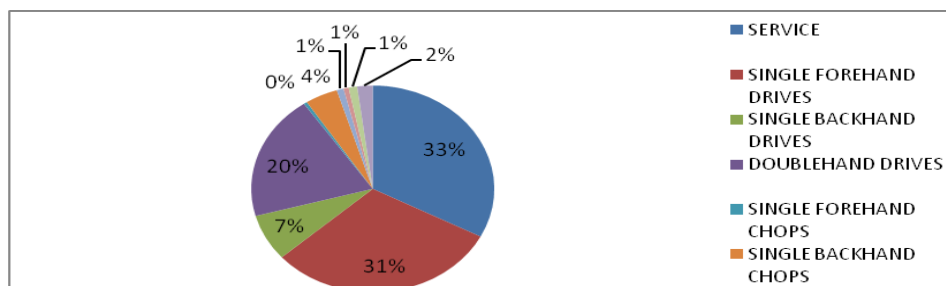
**Table No. 02 NUMBER OF TOTAL TECHNIQUES FAULTS IN GAME**

Sl.No	SKILLS		FIRST SET	SECOND SET	THIRD SET	FOURTH SET	NO OF FAULTS	Per cent age
1	SERVICE		57	21	31	34	143	33
2	DRIVES	SINGLE FORE HAND	53	16	33	33	135	31
		SINGLE BACK HAND	10	7	7	8	32	7
		DOUBLE HAND	27	14	20	25	86	20
3	CHOPS	SINGLE FOREHAND	1	0	0	1	2	0
		SINGLE BACKHAND	7	3	3	6	19	4
4	DROPS	SINGLE FOREHAND	2	1	0	1	4	1
		SINGLE BACKHAND	2	0	0	1	3	1
5	SMASH		0	2	1	2	5	5
6	LOB		3	2	2	2	9	9

Table and graph no. 02 represents the number of failures/fault skills and techniques exhibited in different sets, during the semi-finals and final matches of tennis Wimbledon tournament. Total number of fault skills exhibited in each sets is different. Because it depends on player fitness, mantel ability, their talent in playing and in result pressure. In first set maximum number of failure in services and drives skills are exhibited, compared to other played sets, because of player motor fitness and their level of execution of techniques will be more in first set. Where as in second set minimum number of failure in services and drives skills are exhibited less compared to other three sets. In first set maximum number of faults in single forehand drives 31 per cent (53) times compare to second set but in third and fourth set again players has been made 33 single forehand faults. It clearly indicates that, maximum fault were accure in the first set, after starting the match always in sports, the players required some time to adjust with the court, environment, spectators and confidence over the execution of techniques in the match compare to other sets, because of player's fitness and level of strength will be slowly increase.

Number of faults made in single backhand drives 10 times Compare to second, third and fourth sets because backhand hand drive in tennis one of the toughest drive compare to other drives and opponent players were trying the send the ball in weaker zone of single back hand drive, the players are wish to play forehand drives in tennis, it gives maximum confidence to execution of techniques compare to other techniques and by playing forehand drives easily player can play powerful drives. This drives are more perfection, than any other techniques

**Graph No. 02: Percentage of total Techniques faults in Game**



The above representation of Graphs and Tables clearly justify that, the maximum number of faults played in the match is 71% of drive skills during the semi-finals and final match, it is notified that, the players are lost the match with execution of more number of faults in drives.

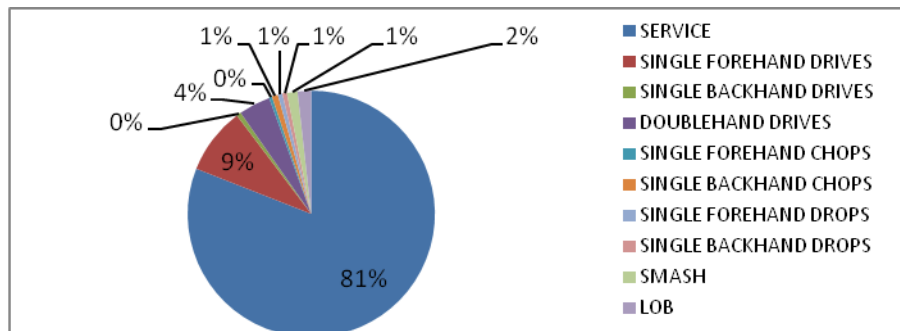
**No. 03. NUMBER OF TOTAL SUCCESS OF SKILLS AND TECHNIQUES**

Sl. No	SKILLS		FIRST SET	SECOND SET	THIRD SET	FOURTH SET	NO. OF SUCCESS	Per cent age
1	SERVICE		137	75	81	115	408	81
2	DRIVES	SINGLE FOREHAND	14	13	9	8	44	9
		SINGLE BACKHAND	0	0	1	2	3	1
		DOUBLEHAND	5	7	4	5	21	4
3	CHOPS	SINGLE FOREHAND	0	0	1	1	2	0
		SINGLE BACKHAND	0	2	2	0	4	1
4	DROPS	SINGLE FOREHAND	0	0	1	2	3	1
		SINGLE BACKHAND	1	0	1	1	3	1
5	SMASH		3	1	1	2	7	7
6	LOB		4	1	2	2	9	9



The table and graph no.03 representing the overall scoring/success in skills and techniques exhibited in different sets, it may vary with each sets. Because, it depends on player fitness, mental ability and situational adjustment of techniques for success over the set. In first set maximum number of failure in services and drives skills are exhibited compared to other sets, It may occur due to adjustment of playing condition, material were used for play and environmental condition has played a major role to adjust with the failure, second, third and fourth sets were executed the techniques with high standard to minimise the failure of implement the techniques has adopted by the players.

**Figure. 3 NUMBER OF TOTAL SUCCESS OF SKILLS AND TECHNIQUES IN PER CENTAGE**



The above table and graph clearly shows that, the maximum number of points or success of skill performed in the match is 81% of fore hand service. Normally in the game of tennis, majority of players depend on their failure and success is ace service. Perfection in- service were directly getting the points or it may create simple return of ball from the opponent, this might be the advantage of the player to success.

## **Summary, Conclusion and Recommendations**

### **Summary**

Tennis is one of the richest game in the world, day by day tennis is attracting more number of the player and spectators as compared from the early days. There is no age limitation to play tennis. Tennis is one of the popular games in the world. Still tennis is played by only richest people. It is rich and expensive game in all aspects, such as playing, learning, teaching, ground maintenance and equipment with this need well equipped fitness centres.

While coming to learn tennis is bit difficult and expensive. Where it required time, and money power. Even though an expert in tennis coaching, can't observe techniques in all the skills and behaviour of the player's at live matches. It is hard task to analyse skills during the match played by the players in live. As technology improved in modern days. Whole match can be recorded with high different dimension form. As attempt of studying skills performed or exhibited in semi-final and final match of Inter-National Wimbledon tournament is done through video records. Data is collected by observing carefully with the video record of those three matches. Check list is prepared by tallies in each set of Wimbledon tournament.

## **Conclusion**

The analysis of skills and techniques exhibited in semi-final match in Inter-National Wimbledon tournament is done through video recorded clips. Data is collected in each set of these three matches and prepared a check list by observing the video. Using this data, analysis is done to study the performance of the skills played by the player in Inter-National tournament.

It might be understood that, most of the basic skills are executed more than the advanced skills. From this investigation, it is concluded that, service and drives are the skills used highest number of repetitions to score maximum points in these three matches of Inter-National Wimbledon tournament to secure the top ranking.

At the end of the match, the researcher opines that, for the purpose of analysis, results were taken from the video records are more accurate than manual analysis of results in the live matches.

## **Recommendation**

This type of study can be implemented in other games.

In Inter-National tournament, study the skills and behavior of the player to improve the performance of each player in the future.

This study will be recommended that, changes or adaptation of techniques, skills and usable playing equipment for respective games.

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## **Effects Of Aerobic Training With And Without Moringa Oleifera On Resting Heart Rate, Low Density Lipoprotein, High Density Lipoprotein And Testosterone Among College Men Athlete**

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### **Abstract:**

The purpose of the study was to investigate “Effects Of Aerobic Training With And Without Moringa Oleifera On Resting Heart Rate, Low Density Lipoprotein, High Density Lipoprotein And Testosterone Among College Men Athlete”. Moringa Oleifera: Many studies show that Moringa oleifera may lead to modest reductions in blood sugar and cholesterol. It may also have antioxidant and anti-inflammatory effects and protect against arsenic toxicity. Moringa leaves are also highly nutritious and should be beneficial for people who are lacking in essential nutrients. Selection Of Variables: The following variables were selected for this study. I. Dependent Variables: 1. Resting Heart Rate, 2.High density lipoprotein 3.Low density lipoprotein 4.Testosterone.II.Independent Variables: 1. Aerobic Training 2. Moringa Oleifera with Aerobic Training 3.Control Group. Experimental Design: The subject were selected for this study through the random group design consisting of pre and post test, forty five college men athletes randomly divided into three groups, the group was assigned as an experimental group and control group. The groups are 1. Aerobic Training, 2. Moringa Oleiferawith with Aerobic Training,3.Control Group. Statistical Technique: Analysis of Covariance statistical technique was used, to test the significant difference among the treatment groups. If the adjusted post-test results were significant, the scheffe's post hoc test was used to determine the paired mean significant difference. Thirumalaisamy R. (2004). After incorporate statistical technique, it was found that a significant decrease in Resting Heart Rate and low density lipoprotein and greater increased in high density lipoprotein and testosterone in experimental group II (Moringa Oleifera with Aerobic Training) due to eight weeks of Natural Supplementation with aerobic training than that aerobic exercise group.

Moringa Oleifera: Many studies show that Moringa oleifera may lead to modest reductions in blood sugar and cholesterol. It may also have antioxidant and anti-inflammatory effects and protect against arsenic toxicity. Moringa leaves are also highly nutritious and should be beneficial for people who are lacking in essential nutrients.

Health Benefits Of Moringa Oleifera: Boost Testosterone: One of the biggest marketing claims made by manufacturers of moringa supplements is its ability to increase testosterone levels, boost erections and enhance sexual performance. Essentially that it is an aphrodisiac. Moringa Oleifera on Lower Cholesterol: Modern societies are increasingly suffering from high amounts of cholesterol in the blood. Cholesterol is a big problem because it is linked to an increased risk of heart disease. Many plant foods such as chia seeds, flaxseeds, almonds and oats are found to effectively reduce cholesterol. Moringa also has similar cholesterol-lowering effects. In a particular study Moringa has been found that Moringa possesses a hypolipidaemic effect which reflects a decrease in the lipid profile. In another study it was found that Moringa Oleifera leaf powder along with high-fat diet decreased the high-fat diet-induced increases in serum, liver, and kidney cholesterol levels by 14.35%, 6.40% and 11.09% respectively.

**Statement Of The Problem:** The purpose of the study was to investigate “Effects Of Aerobic Training With And Without Moringa Oleifera On Resting Heart Rate, Low Density Lipoprotein, High Density Lipoprotein And Testosterone Among College Men Athlete”.

**Selection Of Variables:** The following variables were selected for this study.

**I.DEPENDENT VARIABLES:** 1. Resting Heart Rate, 2.High density lipoprotein 3.Low density lipoprotein 4.Testosterone.**II.INDEPENDENT VARIABLES:** 1. Aerobic Training 2. Moringa Oleifera with Aerobic Training 3.Control Group

**EXPERIMENTAL DESINGN:** The subject were selected for this study through the random group design consisting of pre and post test, forty five college men athletes randomly divided into three groups, the group was assigned as an experimental group and control group. The groups are 1. Aerobic Training, 2.Aerobic Exercise with Moringa Oleifera, 3.Control Group

**TRAINING SCHEDULES AND SUPPLEMENTATION:** During the training period, the experimental group underwent their walking program period of eight weeks for all days with Moringa Oleifera. The experimental group underwent walking for forty five minutes of duration seven days per week.

**Statistical Technique:** Analysis of Covariance statistical technique was used, to test the significant difference among the treatment groups. Thirumalaisamy R. (2004).

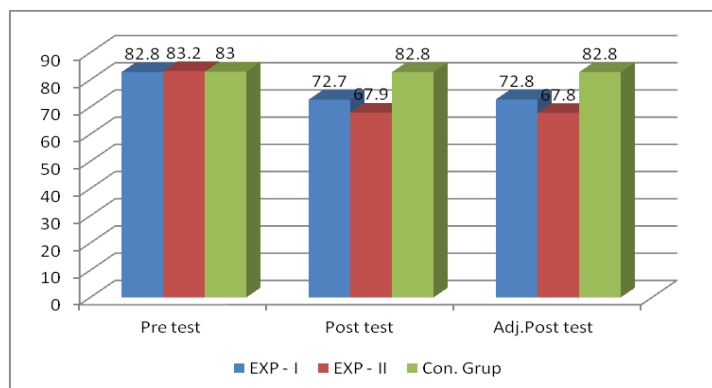
**Computation Of Analysis Of Covariance:** The following tables illustrate the statistical results of Effects Of Moringa Oleifera With Aerobic Training On Resting Heart Rate, Low Density Lipoprotein, High Density Lipoprotein And Testosterone Among College Men Athlete and ordered adjusted means and the difference between the means of the groups under study.

#### COMPUTATION OF ANALYSIS OF COVARIANCE OF RESTING HEART RATE

Means	EXP - I	EXP - II	Con. Group	S.V	S.S	D.F	M.S	O.F	T.F
Pre test Mean	82.8	83.2	83	B	1.2	2	0.6	0.07	3.23
				W	344.8	42	8.2		
Post test	72.7	67.9	82.8	B	1726.9	2	863.4	102.37	
				W	354.2	42	8.4		
Adj.Post test Mean	72.8	67.8	82.8	B	1740.8	2	870.4	132.15	
				W	270.0	41	6.5		

#### DISCUSSIONS AND FINDINGS OF RESTING HEART RATE

This result indicated that the effect of Moringa Oleifera with aerobic training and aerobic training had



significantly reduced the Resting Heart Rate Among College Men Athlete, when compared with control group in terms of means. Further findings of the study indicated that aerobic training with Moringa Oleifera had greater reduction in Resting Heart Rate than the aerobic training.

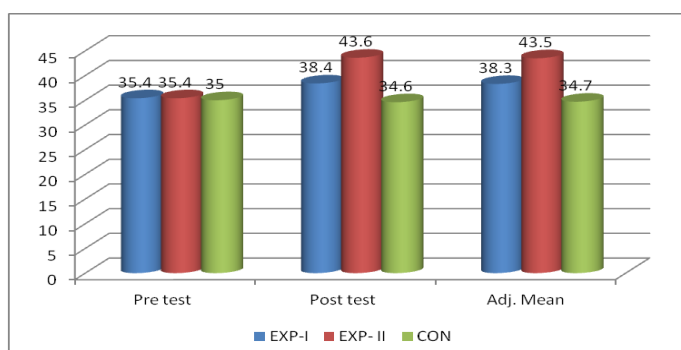
In Experimental Group had implementing the aerobic training with Moringa Oleifera prescription is influenced the significant reduction in Resting Heart Rate, when compare to the control group. It's all because of the supplementing the natural products is influenced and converted the excess cholesterol spent as energy for stamina and it avoid to formation of cholesterol in the body. So its concluded that the aerobic training with Moringa Oleifera had significantly influenced Resting Heart Rate and to avoid the unnecessary effect to the heart.

#### COMPUTATION OF ANALYSIS OF COVARIANCE OF HDL

Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	35.4	35.4	35.0	B	1.3	2	0.6	0.17
				W	170.2	42	4.0	
Post test Mean	38.4	43.6	34.6	B	2	301.9	77.08	23.59
				W	164.5	42	3.9	
Ad.post test Mean	38.3	43.5	34.7	B	585.5	2	292.7	86.85
				W	138.2	41	3.3	

**DISCUSSION ON FINDINGS OF HIGH DENSITY LIPOPROTEIN:** From these analyses, it is found that the results obtained from the experimental groups had increase in the High Density Lipoprotein when compared with the one from the control group. This is due to the inclusion of Moringa Oleifera with Aerobic

with  
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Training in the analyses on Experimental Groups. In Experimental Group II had implemented the aerobic training Moringa Oleifera prescription is significantly reduced in High Lipoprotein, when compare to the group. It's all because of the supplementing the natural products influenced and converted the cholesterol spent as energy for stamina and it avoid to formation of

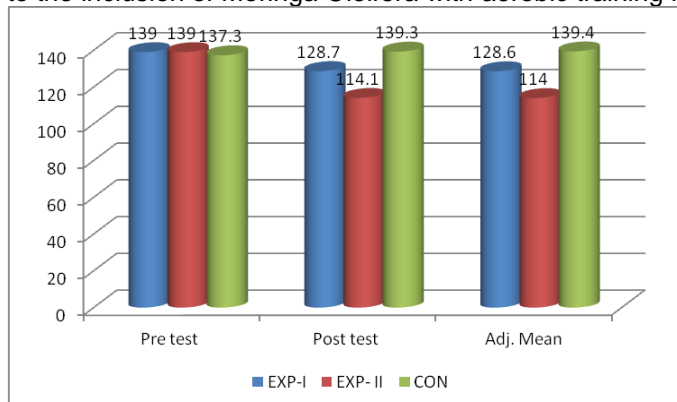
cholesterol in the body and high density lipoprotein is transporter to bring back the excess cholesterol to the liver and utilized as energy for working muscle. So its concluded that the aerobic training with Moringa Oleifera had significantly influenced increased High Density Lipoprotein and to avoid the cholesterol deposition in the body.

TABLE – IV - COMPUTATION OF ANALYSIS OF COVARIANCE OF LDL

Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	139	139	137.3	B	27.7	2	13.8	0.34
				W	1691.3	42	40.2	
Post test	128.7	114.1	139.3	B	4802.8	2	2401.4	71.94
				W	1402	42	33.3	
Adj.Post test Mean	128.6	114.0	139.4	B	4808.6	2	2404.3	71.13
				W	1385.8	41	33.8	

### Discussion On Findings Of Low Density Lipoprotein

From these analyses, it is found that the results obtained from the experimental groups had significant reduction in the Low Density Lipoprotein when compared with the one from the control group. This is due to the inclusion of Moringa Oleifera with aerobic training in the analyses on Experimental Groups.



It is interesting to note that the results obtained from Experimental Group II had more effect than Experimental Group I on the reduction of Low Density Lipoprotein level. This is due to the implementation of Moringa Oleifera with aerobic training in the Experimental Group II.

These results are found to be in good agreement with the earlier works done by different researchers. Coggan et.al (1990) has proved that the Supplementations with Walk causes a decreased reliance on Low Density Lipoprotein as an energy source during exercise performed at the same absolute intensity due to a lower rate of appearance, disappearance and clearance. After Supplementations with Walk, steady state Low Density Lipoprotein turnover, over a period of Eight Week.

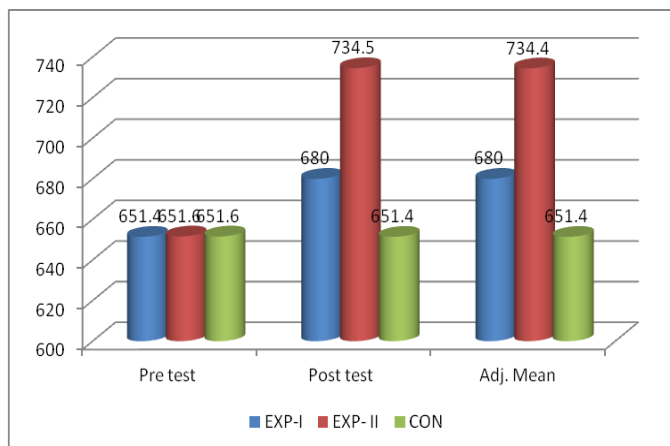
It is concluded that the bad cholesterol (LDL) is always block and build up waxy substances deposited in the arteries. So due to this reason we have to maintain the normal level of ldl in the body is always is good for the internal systems.

### Computation Of Analysis Of Covariance Of Testosterone

Means	EXP - I	EXP - II	Con. Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	651.4	651.6	651.6	B	0.40	2	0.2	0.00
				W	17924.4	42	426.7	
Post test	680	734.5	651.4	B	53440.5	2	26720.27	38.3
				W	29289.4	42	697.3	
Adj.Post test Mean	680.0	734.4	651.4	B	53413.9	2	26706.9	44.5
				W	24581.7	41	599.5	

## Discussion On Findings Of Testosterone:

From these analyses, it is found that the results obtained from the experimental groups had significantly increased in Testosterone level when compared with the one from the control group. This is due to the inclusion of Moringa Oleifera with aerobic training in the analyses on Experimental Groups. It is



interesting to note that the results obtained the value of testosterone from Experimental Group II had greater increase from its lower level to maximal level than the Experimental Group I on the improvement of Testosterone. This is due to prescription of Aerobic Training With Moringa Oleifera to boost the volume of testosterone in the Experimental Group II. It is concluded that the experimental groups had greater improvement in volume of Testosterone in men athletes.

## Results:

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

Experimental group II (Aerobic Training with Moringa Oleifera) showed significantly greater reduction on Resting Heart Rate, Low Density Lipoprotein and increased high density Lipoprotein, testosterone than the Experimental group I at the end of eight week period of time of training at the end of eight week period of time.

## Findings:

After incorporate statistical technique, it was found that a significant decrease in Resting Heart Rate, Low Density Lipoprotein and greater increased in high density lipoprotein, testosterone in experimental group II (Moringa Oleifera with Aerobic Training due to eight weeks of Natural Supplementation with aerobic training).

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## **Body Image in Relation to Lifestyle Practices among BSPE Students in MSU-Marawi**

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### **INTRODUCTION**

In today's society, people, more often than not look up to the K-Pop stars because of their slender physique and soft, smooth skin. In the Philippines, girls and women alike idolize Miss Universe 2015 Pia Wurtzbach because of her amazingly curvaceous body and her confidently beautiful smile. For the male Filipinos, they would follow what many athletes do, like those in the NBA and PBA, in order for them to, at least, imitate their moves, looks, and actions. This leads these followers to enhance their lifestyle practices. They would engage themselves in a lot of physical activities like sports and would really sweat it out in the gyms. They try to only eat nutritious food and snacks as well as find solutions to make themselves stress-free. In addition, they would tend to avoid habits that would eventually wreak havoc into their lives.

In a place where simple living is the trend, that is, inside the Mindanao State University – Marawi campus, students have access to the internet, television, or magazines where they can be bombarded with sometimes unrealistic and unobtainable appearance. Accordingly, nowadays, encouragement to focus on appearance is at an all-time high in this culture. But will these students, particularly in this study, the Bachelor of Science in Physical Education (BSPE) majors, be affected by this? It is for these reasons that this study was conducted: to check the respondents' satisfaction or dissatisfaction of their body image as well as to ascertain their lifestyle practices.

According to the Encyclopedia of Women's Health (2014), body image is the perception that a person has of his physical self and the thoughts and feelings that result from that perception. Gomez (2009) made a simpler definition as "body image is how one sees himself when he looks in the mirror or when he pictures himself in his mind."

Body image is a widespread preoccupation. In one study of college students, 74.4% of the normal-weight women stated that they thought about their weight or appearance "all the time" or "frequently." But the women weren't alone; the study also found that 46% of the normal-weight men surveyed responded the same way (*"What is Body Image?"* n.d.). In another study conducted with the LGBT community, it was found out that of the 263 lesbian women respondents, 48% had dieted in the past 3 months, almost half were dissatisfied with their weight, and low self-esteem was strongly linked to body dissatisfaction. Another study found that gay men diet more, are more fearful of becoming fat, and are more dissatisfied with their bodies in general as well as with their degree of muscularity than heterosexual men.

The researcher personally believes that having a positive body image has a connection with engaging in healthy lifestyle practices. These practices include participating in regular physical activity, eating properly, managing stress, and avoiding destructive habits.

In the study conducted by Bednarzyk, Wright, and Bloom (2013), majority (71%) of their respondents indicated they were satisfied with their body, although many (60.3%) wanted to alter it.



Majority (65.1%) had a normal BMI. Only 23.3% meet physical activity guidelines. Healthy lifestyle behaviors were engaged in by the respondents, but not routinely. Body image was correlated with healthy lifestyle behaviors.

Greenleaf (n.d.) said that how one feels about his body can influence his physical activity participation. Corbin, Lindsey, and Welk (2000) mentioned that regular physical activity is a positive addiction in which the result is beneficial to an individual. It can improve the quality of life. Interestingly, it is important to note that those who exercise regularly are more likely to adopt other healthy lifestyles. Corbin et al. (2000) further mentioned that good eating habits can help an individual feel and look his best. Eating properly is a goal that is achievable. Furthermore, reducing stress in life and learning to cope with stress are associated with feelings of well-being and an improved quality of life. In addition, avoiding destructive habits like use of tobacco products and alcohol is also a way to adhere to a healthy lifestyle which is essential to increasing quality and years of healthy life.

### **Statement Of The Problem**

This study aimed to answer the following questions:

1. What is the profile of the respondents in terms of sex, age, year level, ethnicity, and BMI?
2. What is the result of the lifestyle practices of the respondents in terms of physical activity, eating habits, stress management, and avoidance of destructive habits?
3. What is the body image of the respondents?
4. Is there a significant relationship between sex, age, year level, ethnicity, and BMI with the lifestyle practices?
5. Is there a significant relationship between sex, age, year level, ethnicity, and BMI with body image?
6. Is there a significant relationship between lifestyle practices and body image?

### **Methods**

#### *Samples*

There were 54 samples involved in the study: 30 female and 24 male Bachelor of Science in Physical Education (BSPE) students of the College of SPEAR, who were officially enrolled during the Summer Term of AY 2014 – 2015. The data were collected within the month of July 2015.

#### **Instrumentation**

In gathering data, this study used a questionnaire which was comprised of three parts. The first part gathered information of the samples' sex, age, year level, ethnicity, height, and weight (to compute for the Body Mass Index or BMI). The BMI was calculated by dividing the respondents' weight in kilograms by their height in meters squared ( $\text{kg/m}^2$ ). The second part was the adapted Questionnaire Measuring Body Image and Dissatisfaction (Mciza et al., 2005), which was used to assess body image satisfaction or dissatisfaction. The third part was the modified Lifestyle Assessment to measure lifestyle practices. There were four (4) subscales which contained four (4) items each with choices of Always (3 points), Sometimes (2 points), and Never (1 point). These subscales included Physical Activity (*ex. I do exercise for muscle fitness at least two days a week*); Eating Habits (*ex. I limit the amount of fat, saturated fat, and cholesterol*); Stress Management (*ex. I take time out during the day to relax and recover from daily stress*); and Avoidance of Destructive Habits (*ex. I do not smoke or use other tobacco products*).

#### **Statistical Analyses**

The descriptive statistics in the form of frequency and percentage distribution for the profile of the respondents was used.

In testing to determine the extent or magnitude of the relationship between the variables, the correlation coefficient was used through the Pearson Product Moment of Correlation (Pearson  $r$ ).

The Statistical Package for the Social Sciences (SPSS) version 20 was utilized to come up with the results.

## Results And Discussions

### *Profile of the Respondents*

The study found out that majority of the samples were female students ( $f=30$  or 55.6%) as compared to the male students ( $f=24$  or 44.4%). This is attributed to the fact that in the MSU-Marawi campus, female students outnumbered the male students. In the entire existence of the College of SPEAR, there are always more female BSPE majors than their male counterparts.

Majority were 20 – 22 years old ( $f=32$  or 59.2%). The College of SPEAR, as always, accepts pursuers from the Technology courses as well as shifters from other colleges and this is one of the reasons why there were still students who have not graduated even at 20 – 22 years old.

Most were third year students ( $f=24$  or 44.4%). It is at this level that major courses are starting to get more difficult. Other than that, this may also be the period wherein students get more serious and become more focused on the price, that is, graduation, by next year level, hence this result.

While in terms of ethnicity, majority of the students enrolled in the College of SPEAR were non-Muslims ( $f=42$  or 77.8%). This may be because non-Muslim students are more exposed to sports, dance, and recreation activities as compared to the Muslims ( $f=12$  or 22.2%) who have their unique culture and tradition to follow.

In terms of the BMI, it was revealed that majority of the respondents ( $f=43$  or 79.6%) were “Normal” with body mass indexes of 18.5 – 24.9. Only a few were rated as “Overweight” or “Underweight” and none were considered “Obese.” This simply meant that these respondents had good height to weight ratio (their weight is proportional to their height).

Almost all of the respondents were rated “Good” in their physical activities ( $f=50$  or 92.6%). These respondents are Physical Education major students and have already learned concepts and practices of physical activities from their classes. These respondents may have accumulated 30 minutes of moderate physical activity most days of the week by brisk walking, climbing the stairs, yard work, or home chores. They also do vigorous activities, like sports and games, at least three days a week.

However, in terms of eating habits, majority were rated “Poor” ( $f=29$  or 53.7%). This is really a sad realization since it may be attributed to the fact that students do not have the proper choices of food to eat here in the campus. They just buy whatever they see as cheaper or only what their allowances can afford. Thus, there is less control as to the amount of fats, saturated fats, sugar, and salt intake.

The study also found out that majority ( $f=36$  or 66.7%) had “Good” ways of combatting stress. This may be due to the fact that the MSU campus is also a simple community wherein family, friends, and colleagues are closely-knit. Since the pace of life is not so fast, it is easy for the respondents to find time to relax and recover from the stress of daily living.

For the avoidance of destructive habits, majority of the respondents ( $f=47$  or 87.1%) were rated “Average.” It can be said that it is a bit difficult to stop using tobacco products and alcohol especially since they may have acquired this habit from way back in the past. However, there are also those individuals whose motto is “I haven’t tried and I promise not to try” when it comes to these products, just like the researcher herself.

When it comes to the results in the body image, majority ( $f=29$  or 53.7%) were satisfied while 25 (46.3%) respondents were dissatisfied with their body image. This proves that majority of the BSPE majors are happy with their current weight, body shape, and appearance. There is an appreciation of what they are able to do with their bodies and they just enjoy being active.

### **Correlation of the Variables**

When the p-value obtained is greater than 0.05 level of significance, the relationship between variables is not significant. However, if the p-value is lesser than 0.05 level of significance, the relationship between variables is significant.

For the correlation of the variables, it was found out that only physical activity had a significant relationship with age ( $p=0.045$ ); avoiding destructive habits with sex ( $p=0.007$ ), age ( $p=0.006$ ), and ethnicity ( $p=0.009$ ); and the over-all lifestyle practices with ethnicity ( $p=0.024$ ). For the main variables in this study, there was no significant relationship between body image and lifestyle practices ( $p=0.234$ ).

## CONCLUSIONS

Based on the results of the study, older respondents tend to engage more in physical activities like sports and games as well as other forms of activities that will increase their strength and endurance. This means that as one gets older, the more likely that he will become more active in his physical activity participation.

On the other hand, the female respondents were better in avoiding destructive habits compared to the males; the younger BSPE major students were better in avoiding destructive habits compared to the older students; while the non-Muslims were better in avoiding destructive habits compared to the Muslims.

For the overall lifestyle practices, it was found that the non-Muslims tend to have better management of the lifestyle practices.

However, in this study, it was found out that body image is not significantly correlated with lifestyle practices.

## RECOMMENDATIONS

It is recommended that students should be thoroughly informed on the effects of poor eating habits, by integrating it in lectures and classroom discussions, or even seminars and trainings on nutrition and diet. Moreover, the performance of good lifestyle practices should be instilled to these students, old and young, male and female, Muslims and non-Muslims alike, to prevent possible health problems in the future. These students should also be encouraged to maintain body image satisfaction to be able to accept, appreciate, and respect their body which may result to a positive outlook towards life. For future studies, increasing the number of respondents, which may also include other students in the university, should also be considered as well as including other healthy lifestyle behaviors.

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## Physical Fitness Components: Predictive Accuracy in 400m Sprint Performance

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### Introduction

Bungalows need small, 2-storey buildings demand bigger, while highest towers require the largest necessary foundations; such that height of the building is directly dependent on its foundation. Will this be also true to sports? Does it follow that: optimized sport's performance can be paralleled with a very strong foundation? Foundation in sports is commonly referred to as physical fitness components clustered into Health-Related Components (HRC) and Performance-Related Components (PRC). HRC are designated to improve health, wellness, and quality of life and enumerated as body composition, flexibility, cardiovascular endurance, muscular endurance, and muscular strength (Catapang, 2000). On the other hand, those PRC are important in performing the more technical aspects of many sports and these are agility, balance, coordination, speed, reaction time and power ("Fitness Components," n.d.). Since sports is of a wide-ranged in scope, this study focused on one of the most exciting and breath-taking event in athletics, the 400m sprint.

According to Quencetani, (2005) the 400m sprint is regarded as a "prolonged sprint" and the term appears to be appropriate, especially when one considers that Michael Johnson's 1999 world record of 43.18 is the equivalent of four consecutive 100m in 10.795 seconds. Sometimes, the event is also referred to as the "killer event" because, being just beyond the limit through which a well-trained runner can maintain his or her maximum speed, a huge stress is placed on the organism with the body invariably fatiguing, "rigging" or "tying up", especially in the closing stage. As early as 1888, this led Montague Shearman, the most famous observer of athletics in the 19th century, to refer to 440 yard (now 400 meters) runners as "runners who run themselves blind before reaching the tape". To this effect, many experts and sports personalities are studying how to improve 400m sprint performance and focused more on factors like speed, power, reaction time, etc., skill-related components only to affect 400m sprint performance. This study is a complete package and considers all the Physical Fitness Components, not only the skill-related but also the health-related, as the parameters to influence and predict 400m sprint performance.

### Methodology

#### Research Design

This study employed correlational and determination methods. The correlation method determined the significant relationship and the extent of relationships bridging the fitness components and the 400m sprint performance. The determination method established the predictive accuracy one parameter could share to 400m sprint performance.

#### Population

The population of this study composed of PE4-Athletics male students regularly attending and officially enrolled during the 2nd semester academic year 2014-2015 of the Mindanao State University Main Campus. A total of 59 students were included in the population.

## Samples and Sampling Procedures

Complete enumeration was employed in this study. The 59 PE4-Athletics male students were distributed into 3 sections and enumerated as: PE4-FfGg4, PE4-Gg4, and PE4-Yy4 with 20, 19, and 20 regularly attending students.

## Instrumentation

This study gathered data using the physical fitness standardized tests: the body mass index (BMI) for body composition by World Health Organization, the 6-min run test for cardiovascular endurance by Bolonchok (2008), The sit and reach test for flexibility by Allsen et. al. (1993), the push-up test by McGlynn, (1996), the Sargent jump test for elastic leg strength by Dudley Allen Sargent (1921), shuttle run test for agility by Mackenzie, B. (2007), Stork Stand test for balance by Johnson & Nelson (1979), the alternate wall hand toss test for coordination by American Guidance Service (1969), the standing long jump for power by Hede, et al. (2011), the ruler drop test for reaction time by Mackenzie (2004), the 50-meter sprint test for speed by AAPHERD, and the 400m dash performance. All tests excluding push-up, ruler drop and Sargent chalk jump require time monitoring so stopwatches were used. Other instruments and materials such as weighing scale, meter tape, meter stick, ruler, tennis balls, boxes, flag lets, cones, wooden blocks and chalks were used necessary for the conduct of the different tests. Tests' results were recorded individually in the sample's score card.

## Data Collection Method

The study was conducted by the researcher together with the trained researcher assistants. They gave briefings to the samples regarding the procedures of the different tests and safety measures, then the conduct commenced after warm-up exercises. The samples rotated to the different stations that were created. The test results were recorded in the individual sample's score card right after a specific test with corresponding tester's signature reflected opposite to the test. The results of the tests then were finally tabulated in the quantification of data form in preparation for the statistical treatment.

## Statistical Treatment

For the correlation portion, Pearson r was used. This statistical tool measured the strength of the linear relationship between two sets of interval-scaled and/or ratio-scaled variables (Lind, 2000). To give precise meaning of the findings, the coefficient of determination ( $r^2$ ) measured the predictive accuracy for r (Dunn, 2001). Predictive accuracy is the percentage contribution of one variable when correlated to another.

## Results and Discussion

The results for the statistical analyses among compared variables were presented in the Table below.

Physical Fitness Components	400m Sprint Performance		
Health-Related	p-value	r-value	r <sup>2</sup> -value
Body Composition	0.004	0.365**	0.1332
Cardiovascular Endurance	0.000	-0.576**	0.3318
Flexibility	0.091	-0.222	0.0493
Muscular Endurance	0.152	-0.189	0.0357
Muscular Strength	0.642	-0.062	0.0038
Skill-Related			
Agility	0.000	0.494**	0.2440
Balance	0.084	-0.227	0.0515
Coordination	0.004	-0.367**	0.1347
Power	0.000	-0.555**	0.3080
Reaction Time	0.164	-0.184	0.0339
Speed	0.000	0.699**	0.4886

## Findings

Based from the statistical treatment results, these findings were recognized:

*Body Composition* has positive linear ( $r = 0.365$ ) significant relationship ( $p = 0.004$ ) to 400m sprint performance. Body mass index ( $\text{mass}/\text{height}^2$ ) increases with elapsed time in 400m dash, meaning lighter and taller samples ran faster than the heavier and shorter ones. Moreover, body composition could share 13.32% ( $r^2=0.1332$ ) to the 400m dash performance.

*Cardiovascular endurance* has significant ( $p = 0.000$ ) inverse ( $r = -0.576$ ) relationship to 400m sprint performances and follows that as cardiovascular endurance increases, the time of the 400m sprint performance decreases. So that those samples of better cardiovascular endurance run faster in 400m dash than those with poor. Furthermore, cardiovascular endurance contributes 33.18% ( $r^2=0.3318$ ) to 400m dash performance.

*Agility* confirmed positive linear ( $r = 0.494$ ) significant relationship ( $p = 0.000$ ) 400m dash and declares that those samples with superior agility travel faster in all sprinting events than those of inferior agility, and predicts 24.40% ( $r^2 = 0.2440$ ) of the 400m dash performances.

*Coordination* played an inverse ( $r = -0.367$ ) significant relationship ( $p = 0.004$ ) to 400m dash performance and is capable of contributing 13.47% ( $r^2 = 0.1347$ ). Finding expounds that good hand coordination could lead to faster 400m sprint performance.

*Power* revealed inverse ( $r = -0.555$ ) significant relationship ( $p = 0.000$ ) to the 400m sprint performance. Longer jumps correspond to lesser time (faster run) and proclaim that those who could jump longer distances are also capable of running fast in 400m dash. Leg power predicts 30.80% ( $r^2 = 0.3080$ ) of the performance.

*Speed* expressed linear ( $r = 0.699$ ) significant relationships ( $p = 0.000$ ) to 400m dash performance and proclaims that those who have faster speeds are also performing well in sprints. Speed could share 48.86% ( $r^2 = 0.4886$ ) of the 400m dash performance.

*Flexibility, Muscular endurance, Muscular strength, Balance and Reaction time* have no significant relationship to 400m sprint performance.

### **Conclusion**

Based from the findings of the study, the following conclusions are driven:

*Body Composition, Cardiovascular endurance, Agility, Coordination, Power, and Speed* are significant predictors of the 400m sprint performance.

*Speed* is the *best predictor*, *Cardiovascular Endurance* 2<sup>nd</sup> best, *Power* 3<sup>rd</sup>, *Agility* 4<sup>th</sup>, *Coordination* 5<sup>th</sup>, and *Body Composition* 6<sup>th</sup>.

### **Recommendations**

Based on the findings of the study, the researcher presents the following recommendations:

To the Physical Educators

From the findings: the best predictor-speed (48.86%), 2<sup>nd</sup> best-cardiovascular endurance (33.18%), 3<sup>rd</sup> best-power (30.80%), 4<sup>th</sup> best-agility (24.40%), 5<sup>th</sup> best- coordination (13.47%), and 6<sup>th</sup> best-body composition (13.32%); it is recommended that physical educators should disseminate these new information to their students and co-teachers.

To the Coaches, Trainers and Athletes

The findings of the study could be the bases in the identification and selection of potential sprinters by letting them undergo the fitness tests both for the health-related and performance-related components.

Moreover, performances on sprints could be maximized by developing training programs including: 1) speed (1<sup>st</sup>), cardiovascular endurance (2<sup>nd</sup>), leg power (3<sup>rd</sup>), agility (4<sup>th</sup>), coordination (5<sup>th</sup>), and body composition (6<sup>th</sup>) for the 400m sprint in addition to the techniques and tactics on the different sprinting events.

In situations where time duration in training is not sufficient to include all specified variables, the first 4 of the fitness components of speed (1<sup>st</sup>), cardiovascular endurance (2<sup>nd</sup>), leg power (3<sup>rd</sup>), and agility (4<sup>th</sup>) shall be given more priorities for they could contribute highest percentage to sprinting performances.

### **For further Studies**

The subjects involved in this study are PE 4 male students and non-experienced, it is then recommended that further similar studies shall be conducted to include skilled and highly skilled athletes. It is also recommended that another similar study shall be conducted on females. Such study will provide additional information and can be utilized for comparison. Lastly, parameter such as: leg length, stride length, no. of strides, height, weight, frequency and duration of training, training attitude, motivation, diet, and lifestyle shall be looked into for future studies.

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**Efficacy Of Yogic Practices For The Promotion Of Academic Achievement, Mental Health And Health Related Physical Fitness Of Adolescent School Students**

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**Background:**

The goal of study was to evaluate mental health, academic achievement and health related physical fitness, of adolescent's school Students were randomly assigned to 8 weeks of yoga training. Students end-program self-report measures of mood, anxiety, perceived stress, resilience, and other mental health variables, academic achievement through assessment and their physical fitness. Independent evaluation outcome measures revealed that yoga participants showed statistically significant differences relative to controls on measures of anger control, emotions, memory power and fatigue/inertia, the yoga group over time were either minimal or showed improvements. Results suggest that implementation of yoga is acceptable, feasible for school students, setting and has the potential of playing a protective or preventive role in maintaining mental health, academic achievement and health related physical fitness. **Objectives:** The main objective of the study was to assess the efficacy of yogic Practice on mental health, academic achievement and Health related physical fitness of adolescent school students. **Materials and Methods:** The 60 adolescent students were selected on the basis of their present performance in school education. Students were divided into two groups. One Experimental group and other Control group were given pre- test in three variables and Yoga training for 8 weeks for Experimental group. A yoga consisting of asana, pranayama, kriyas, etc. The Experimental and Control groups were again post-tested. **Results:** The results show that students, who regularly practiced yoga performed better in academically with suitable improvement in health status and behavior. The study further shows that the students performed yoga, performed better than non-yogic group. **Keywords:** , Academic achievement, Mental health , School Students, Yoga Asana

**INTRODUCTION**

Yoga is the "Union of the individual self with the universal self" (Iyengar, 2001). Yoga, which originated in India more than 5,000 years ago, is a Hindu system of philosophy that encompasses the body, mind and spirit. Its aim is ultimate physical health and happiness, together with mental peace and tranquility

Yoga is a practical aid, based on a harmonizing system of development for the body, mind, and spirit. Yoga derives its philosophy from Indian metaphysical beliefs. The word yoga comes from Sanskrit language 'yuj' and means union or merger. The aim of yoga is to strike a balance between mind and body and attain self-enlightenment. To achieve this, yoga uses movement, breath, posture, relaxation and meditation in order to establish a healthy, lively and balanced approach to life. Yoga is a method of learning that uses three main structures: Exercise, Breathing, and Meditation. The exercises of Yoga are designed to put pressure on the Glandular Systems of the body, thereby increasing its efficiency and total health. The Breathing Techniques are based on the concept that breath is the source of life in the body and a gentle increase in the breath control improves health and functions of both the body and the mind. These two systems prepare the body and mind for Meditation, making it easier psychologically to achieve a quiet mind and be free from everyday stress. Studies of yoga with adolescents and children have been rare, despite the increasing trend towards introducing yoga for children and adolescents in schools and

yoga studios (**white,2009**). One of the major goals of normal development is a high standard of physical fitness and intellectual way improvement in academic achievement. Maintaining an appropriate level of Mental health, Health related fitness allows a person to :

- ☐Meet emergencies and Challenges in life
- ☐Reduce the risk of disease and injury
- ☐Work Efficiently with Positive Health.
- ☐Participate and enjoy physical activity to improve personality (sports, recreation, leisure)
- ☐Look one's Physical best and Positive Image.

## 1.2 THE CONCEPT OF YOGIC PRACTICES

Although the word 'Yoga' has many connotations, etymologically it means 'Integration.' The aim of Yoga itself is integration of personality in its all aspect. In order to help the development of such integration various techniques are employed. These techniques or practices enjoined in Yogic literature and handed down in different traditions also go under the name of Yoga.

**According to Himalaya Yoga Peeth, (2014)** 'Yogic Practices' is classified in **Asana, Pranayama, Bundhas, Mudras, Kriyas** and **Dhyana**, the meaning of the same is described below:

**Asana** (Gharote M. L., 2009 p. 20)

These are certain patterns of postures that stabilize the body and mind. They aim at establishing proper rhythm in the neuromuscular tonic impulses and improve the general tone of the muscles. 3

**Pranayama** (Gharote M. L., 2009 p.21)

These are the practices in the control of respiratory impulses which form one of the main channels of the flow of autonomic nerve currents. They are practiced for bringing control over the autonomic nervous system and dismissing the mental fluctuations.

**Bundhas and Mudras** (Gharote M. L., 2009 p. 22)

These consist of practices wherein one tries to consciously control certain semi-voluntary and in-voluntary muscles in the body. In these muscles there is an integration of central and autonomic nerve supply. By bringing these muscles under volition one could influence thereby the activity of the autonomic nervous system which functions as a whole. Bandhas and mudras help to tone up the internal organs, decongest them and stimulate their healthy functioning.

**Kriyas**(Gharote M. L., 2009 p.17)

These are purification processes; usually classified into six divisions and therefore they are often called Shatkarmas or Shatkriyas. Each one of these consists of many sub-sections. They not only purify the internal organs but also train the reflex mechanisms.

**Dhyana**(Gharote M. L., 2009 p. 18)

This is a continuum of mental practices involving from initial withdrawal of senses to the complete oblivion of the external environment. Literally, there are innumerable stages and practices which could be included under this head.

The nature of all Yogic practices is Psycho-physiological. Some practices which emphasize on the direct control of mental processes are more psychological.

**CONCEPT OF ACADEMIC ACHIEVEMENT** Academic achievement is considered as a key criterion to judge one's total potentialities and capabilities. Therefore it is more pressing for the individuals/ students to have high academic achievement. The term achievement refers to the degree or the level of success attained in some specific school tasks especially scholastic performance, in this sense academic achievement means the attained ability to perform school tasks, which can be general or specific to a given subject matter. Academic achievement could be defined as self-perception and self-evaluation of one's objective academic success. Academic achievement generally indicates the learning outcomes of pupil. Achievement of those learning outcomes requires a series of planned and organized experiences. Good (1973), has defined, academic achievement as knowledge attitude or skill developed in the school subject usually designed by test scores or by marks assigned by teacher or by both. Consequently, academic achievement could be defined as self-perception and self-evaluation of one's objective success (Srivastava, 2009).

Academic achievement performance is the outcome of education — the extent to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important procedural knowledge such as skills or declarative knowledge such as facts (Ward, Stoker, & Murray-Ward, 1996). Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. School systems mostly define cognitive goals that either apply across multiple subject areas (e.g., critical thinking) or include the acquisition of knowledge and understanding in a specific intellectual domain (e.g., numeracy, literacy, science, history). Therefore, academic achievement should be considered to be a multifaceted construct that comprises different domains of learning. Because the field of academic achievement is very wide-ranging and covers a broad variety of educational outcomes, the definition of academic achievement depends on the indicators used to measure it. Among the many criteria that indicate academic achievement, there are very general indicators such as procedural and declarative knowledge acquired in an educational system, more curricular-based criteria such as grades or performance on an educational achievement test, and cumulative indicators of academic achievement such as educational degrees and certificates. All criteria have in common that they represent intellectual endeavors and thus, more or less, mirror the intellectual capacity of a person (RicardaSteinmayr, 2015). 5

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## **CONCEPT OF HEALTH RELATED PHYSICAL FITNESS**

Health-related physical fitness is defined as fitness related to some aspect of health. This type of physical fitness is primarily influenced by an individual's exercise habits; thus, it is a dynamic state and may change. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardio respiratory endurance. All

these attributes change in response to appropriate physical conditioning programs, and all are related to health (Hoeger, 2011).

According to (Kansal,1996) Health-related fitness is a physical state encompassing cardio respiratory endurance, muscular strength and endurance, muscular flexibility, and body composition are defined respectively as:

*Cardio respiratory endurance:* the ability of the heart, lungs, and blood vessels to supply oxygen to the cells to meet the demands of prolonged physical activity (also referred to as aerobic exercise)

**Muscular strength and endurance:** the ability of the muscles to generate force

**Muscular strength:** Ability to exert maximum force against resistance.

**Muscular endurance:** Ability of a muscle to exert sub-maximal force repeatedly over a period of time.

**Muscular flexibility:** the achievable range of motion at a joint

**Body composition:** The amount of lean body mass and adipose tissue (fat mass) in the human body  
**.EDUCATIONAL IMPLICATIONS OF ADOLESCENCE STAGE**

Adolescence derives its name from 'adulthood' meaning 'grow to maturity'. The transitional period between childhood and adolescence is called puberty (from Pubertas meaning 'age of manhood') which transforms a child into an adult. Beginning with puberty and gradually submerging into adulthood, adolescence covers a period of 6 to 8 years extremely crucial in an individual's life. Ordinarily adolescence commences at 12 and ends with 19 year with variations in individual growth due to genetic or environmental factors causing children to be either early or late matures. In India, girls begin to mature by 10-11 years and hereditary factors play important role in the onset of adolescent growth-spurt.

While pre-adolescence (puberty) is referred to as a period of "predictabilities and unpredictability's" adolescence is rightly labeled as an age of "great stress and strain, and storm and strife" (Stanley Hall). As the child crosses the threshold of puberty, he suddenly finds himself caught in biological upheaval, psychological chaos and emotional disequilibrium. Like a boat sans rudder and sails, he is left tossing on the high tides of the stormy sea of growth. Far reaching changes occur in his physiology and body –chemistry significantly influencing his behavior, psychological make-up and adjustment in society. The child is virtually unable to understand what is happening to him. He struggles hard to get out of the state of confusion and chaos with all his might, thereby determining the direction of his personality.

## CONCLUSION

The present experiment, within limitations warrants the following conclusion:

Yogic Practices were useful in Improving Academic Achievement. Improvement has been recorded in School Academic Unit test exam of the Adolescent School Boys significantly.

Yogic Practices were useful in developing Mental Health. Improvement has been recorded in Ego Strength, Philosophy of Life, Self-Acceptance and Total Mental Health of the Adolescent School Boys significantly.

Yogic Practices were useful in developing Health Related Physical fitness variables. Improvement has been recorded in Muscular Strength, Muscular Endurance, Cardiovascular Endurance, and Flexibility and in Body Composition of the School Adolescent Boys significantly.

## Recommendations

After considering all pros and cons of the present study following recommendations regarding its implications and suggestions for further studies are made:

□ Regular Yogic Practice should further be extended to lower age group of the school students and also for College students. □ It can also be extended to those who are suffering from Psycho-Physiological problems. □ To tackle the Health Related Physical Fitness and Psychological problems of the growing age students as suggested may be immense helpful.

□ This study can also be conducted on adolescent Girls students.

□ Along with Psychological Variable, Study can also be conducted on Physiological Problems, & Biochemical problems, etc.

## CONTRIBUTION TO THE KNOWLEDGE

The present investigation evolved a new knowledge about Yogic practices for Health Related Physical Fitness, Mental Health and Academic Achievements of Adolescent School Students. The module of Yogic practices is the valuable contribution of this study. Thus, without doubt, the result of this investigation has added quantum of knowledge to the literature of physical education and sports.

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## **Effect Of Imagery On Bowling Accuracy Skill Performance Of Cricket Players At The Zonal And University Level.**

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### **Abstract**

Bowling in cricket is an important aspect of the game as the bowler has the task of not only containing the score but also to take the wickets and get the opponents out. Bowling in cricket needs a lot of accuracy in pitching it in the right area by the bowler, lack of accuracy in pitching the ball in the right area will lead to the bowler getting punished for boundaries. In this study the purpose was to examine the relationship of imagery and its effects on the bowling accuracy skill. Players were divided into two groups namely control group (CG) and Experimental Group (EG) each consisting of thirty players. The Bowling Accuracy skill test score of the Experimental Group (EG) had a pre-test mean value of  $13.4 \pm 3.22$  and a post-test mean value of  $16.37 \pm 4.80$  which is significant with  $t = -2.809$  and  $p\text{-value} = 0.007 < 0.05$ . The Control Group (CG) had a pre-test mean value of  $10.63 \pm 3.60$  and a post-test mean value of  $12.03 \pm 3.13$ . It is not significant with  $t = -1.607$  and  $p\text{-value} = 0.113 > 0.05$ . As a result, there was a significant change in the Experimental Group (EG) due to the imagery intervention when compared with the Control Group (CG). Key words: Cricket, Bowling Accuracy Skill Test, imagery, Experimental Group, Control Group.

### **Introduction**

Bowling is a sporting vocation that takes great fitness, stamina and skill, but also great strength of character. It will never be as obviously glamorous or rewarding as batting. And yet nothing is more rewarding for the fast bowler than seeing the stumps fly or the batsman flinch, or, in the case of the spinner, seeing the batsman beaten in the flight and stumped yards out of his ground. Even the workhorse medium-pacer takes no less delight in seeing the ball nip or swing away, finding the edge, and carrying safely to the wicket-keeper, or jogging back to thump into the front pad plumb in front.

The action of bowling is an unnatural and apparently illogical one. The Oxford Dictionary of cricket suggests: 'it is arguable that the evolution of cricket has to a very large extent been determined by developments in bowling, rather than by developments in batting.' Earlier the bowler used to toss the ball to the batsman underarm. The next change was the invention of the ball that bounced only once on its way to batsman (what might be called a 'length' ball), and this dominated games in the mid-eighteenth century. It forced batsmen to fundamentally change their techniques, and cricket became a game in which batsmen played forward and began defending, rather than standing back and swiping at the ball, much as hockey players do today.

But things started to change in the nineteenth-century, when bowling predominantly was a round arm delivery technique. It was necessary to be held straight and more or less horizontally to the ground. The round-arm action was fully implemented in the year 1835, which compelled the bowler to compulsorily bowl the ball with a straight hand almost horizontally to the ground and above the level of the shoulder.

### **The basic action of bowling**

The following forms the core of fast bowling in modern day cricket. It is built on three basic foundations namely

1. Momentum 2. Balance 3. Timing

Momentum helps the bowler to carry himself to the point of delivery, balance is required to control all your movements as you bowl the ball; and timing controls the finer aspects of bowling such as line, length and flight.

### **Phases of bowling**

#### **The run-up and jump into the beginning of the gather.**

The front arm extends high, the body turns sideways; the back foot is parallel to the crease; the head looks over the front shoulder; and the ball tucks in near the chin and points towards the target.

#### **The set-up.**

The gather is completed. This is the start forward of the uncoiling spring effect: the front knee is brought upwards, so that the body rocks back; the bowling arm now begins to extend towards the bottom of the arm movement.

#### **The unfold.**

The bowler 'unwinds' towards the target; the front foot comes down and forward with the front arm (both arms are now virtually parallel to the ground); the head begins to follow the front arm down over the top of a straight and braced front leg. Some "give" in the front leg is acceptable to prevent injuries, as long as the front leg straightens out again at the moment of delivery. The bowler's eyes are fixed on his target.

#### **The delivery.**

The head is level and the eyes in line with the chosen target; the bowling arm swings up and through the full extent of the arm movement path, with the ball being released at the top of the arch as the arm is about to swing down again. The bowling arm follows through fully towards the batsman, which is vital when getting the ball to swing, seam or spin: don't catapult the ball out of the fingers.

#### **The follow-through.**

The body completes its circle (with a turn of the hips) and the bowling arm follows the same path as the front arm. Allow momentum to drain away by running some way down the pitch if necessary; fast bowlers can actually injure themselves if they stop immediately down the pitch.

### **VISUALIZATION/IMAGERY**

Imagery is a key ingredient in Neuro-Linguistic Programming. Players may be encouraged to develop their own mental pictures. This helps them mentally to rehearse their game in an optimistic and reinforcing way. While acquiring the skill you'll need to practise it at least twice a week. You could conjure up different memories each time: the more positive reinforcement, the better. Because the technique is so intense, once you have mastered it, it is best to save it for moments when it's really needed. It's a useful exercise for the night before an important innings or game, particularly for players struggling with fear of failure or loss of form. It puts them in touch with their talent and positive feelings about the game and helps break the spiral of anxiety and gloom that invariably accompany a slump of performance.

Visualization can include a secondary skill—that of autogenic phase training. This is simpler than it sounds, although it takes practice. The athlete first has to master the technique of deep relaxation. Then, at the moment of intense visualization, he or she will repeat a certain affirming phrase (such as 'I am going to take five wickets next time I bowl' or, less specifically, 'I feel confident and strong' or 'I am going to help my team win'). Sports Psychologists might also encourage their clients to repeat their chosen phrase last thing at night before a big game. The idea is to associate the phrase with your optimum state of deep concentration and readiness to play the game. Eventually, this can become a mantra you can recite (quietly) in the dressing room or even on the field. Doubters should note that this technique has been shown to induce beneficial changes in muscle temperature, in heart and breathing rates, and in the brain's electrical activity (Noakes and Granger, 1995). These techniques are excellent tools for anyone who needs to perform at consistently high levels.

Imagery can be termed as person using his senses to create or recreate an experience or visual image in the mind that at times may seem to be real as seeing the image with his naked eye (Vealey & Greenleaf, 2010). This states that

In the absence of an external stimulus an image can be created in the mind

It may consist of one or more physical senses

An image is created from information stored in the sensory store, working memory or long-term memory. In real sense, the brain cannot tell the difference between an actual physical event and the vivid imagery of the same event (Szameitat, Shen, & Sterr, 2007). Sometimes even in day times we often dream and those dreams are so vivid and life like that we believe that it is true. For this reason, imagery can be used by the brain to provide powerful repetition, elaboration and preservation of important athletic sequences and skills. Not surprisingly, imagery has become a widely researched topic in the field of sports psychology which are in published studies, books (e.g., Callow and Hardy 2005; Moran 2004; Murphy et al. in press), an entire book (Morris et al. 2005) and the introduction of a journal devoted to publishing imagery research in the physical domain (Journal of Imagery Research in Sport and Physical Activity).

### **Objectives of the Study**

To study the effect of imagery intervention on accuracy of bowling skill in bowling.

### **Methodology**

#### **Bowling Accuracy Test**

This bowling accuracy skill test is also known as NARAASHANS CRICKET BOWLING ACCURACY TEST (Salman Ahmad Khan, et al. 2014). Bowling in cricket has been very competitive and has become more aggressive. So, in order to access the level of accuracy this test was administered by the researcher to understand how much accuracy is seen in the bowlers during the tests. The test will be instrumental in boosting the confidence level of the bowlers and also help the coaches to access the level of accuracy of bowling in cricketers.

Purpose of the test: The researcher for the study has selected accuracy in bowling as the primary skill for the subjects. The purpose the study was to establish a relationship between the effects of imagery and the level of changes in the execution of the bowling accuracy skill in the Experimental Group (EG) for the completion of the imagery intervention. And also, to compare the results of the bowling accuracy with the Control Group (CG) where no imagery intervention was given.

#### **Methodology of the test:**

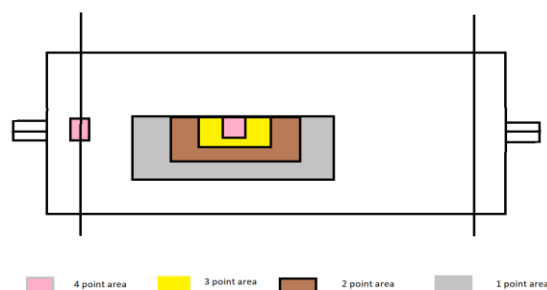
The bowling accuracy skill test was undertaken by the 60 subjects each who belonged to the Experimental Group and the Control Group. Testing took place on a cemented wicket surface. The aim of the test was to ball 24 legal deliveries by the subject with 6 balls in an over with a rest in between an over. Before doing the test on the subjects, a demonstration trial was shown to the subjects with the help of a trained helper. The subjects were told to undergo a good warm up session. Later the subjects were divided into a group of four participants each (as per instructions given by Bob Woolmer 2008). Each bowler was told to ball an over each of 6 legal deliveries followed by other bowlers. A total of 24 balls were to be bowled by each subject comprising of 4 over spell. The bowlers had to aim at the target areas to earn the points. The target area was laid on the cemented wicket which was of a designated measurement. Each area had a specified score and the subjects were told to pitch the ball in these specified areas. The scores were all written down in a score card and was tabulated. The target area had a set of 5 hitting areas with a designated point for each area. The number of hits on different area in the 24 ball (4 overs) would determine the total score of the player. If the ball lands on the line of any designated area then that was counted as the part of that very target area i.e. the higher point will be given. Points given are shown as below:

TARGET	POINTS AWARDED
Hitting 4-point area	4 points
Hitting 3-point area	3 points
Hitting 2-point area	2 points
Hitting 1-point area	1 points
Beyond 1-point area	0 points



**Imagery Script:** The subjects were made to read the imagery script which was developed by the researcher. The script included the steps involved in imagery. The subjects were made to sit in a hall and were told to do deep breathing and later on they had to read the script which had details of the bowling skills. The script consists of the very details of the bowling skill. The subjects had to then rehearse the skill in a match situation at a match speed of execution of the bowling skill. The script had details of the run-up, gather, leap and landing of the foot along with the release of the ball and follow through. The subject also had to imagine of himself pitching the ball in the right designated area for accuracy.

**Marking for the test:** A square of 9 inches with its centre is drawn at a distance of 3 meters from the popping crease. The back line of the square is perpendicular to the leg stump which is the 4-point area and is as per the standard measurement of the distance of cricket stumps i.e., 9 inches. A square of 9 inches is also drawn on the popping crease at the block hole. The 9 inches square drawn on the popping crease is a four (4) point hitting area. The three (3) point area is drawn by extending 9 inches from above, below and front side of the four (4) point area. The Two (2) point area is drawn by extending 9 inches from above, below and front side of the three (3) point area. Also, the one (1) point area is drawn by extending 9 inches from above, below and front side of the two (2) point area. All the line shall be 3 cm thick and shall be included in their respective point areas. The areas outside the one (1) point area shall be the area for zero (0) point hitting area. Hence the marked areas shall be the target zones for the bowlers.



Layout of the bowling accuracy skill test. fig 3

## Results and Discussion

The researcher had conducted a Bowling accuracy Test for both the groups i.e. Experimental Group (EG) and the Control Group (CG) which consists of 30 subjects each. The imagery intervention was carried out only for the Experimental Group (EG) as a part of the research. both pre-test and post-scores were analysed and were compared in the analysis part of the research. The following is the findings in the study:

Table 1 Comparison of Bowling Accuracy Test between the Experimental Group (EG) and Control Group (CG).

Skill	Group	Mean		“t” Value	“p” Value
		Pre-test	Post-test		
Bowling Accuracy Test	Experimental Group	13.4± 3.22	16.4 ± 4.80	-2.809	0.007 <sup>S</sup>
	Control Group	10.6 ± 3.6	12 ± 3.14	-1.607	0.113 <sup>NS</sup>

*Note.* Values are given as Mean ± SD for groups of sixty subjects each. The level of significance is taken at 0.5 with df 58.

In Bowling Accuracy Test, the Bowling Accuracy Control Group (BACG) pre-test score is  $10.633 \pm 3.595$  and post test score is  $12.0333 \pm 3.1347$ . It is not significant with  $t = -1.607$  and  $p\text{-value} = 0.113 > 0.05$ . The Bowling Accuracy Experimental Group (BAEG) pre-test score is  $13.4 \pm 3.22276$  and post-test score is  $16.3667 \pm 4.8029$ . It is significant with  $t = -2.809$  and  $p\text{-value} = 0.007 < 0.05$ . The results show that accuracy level of experimental group has significantly changed after imagery practice.

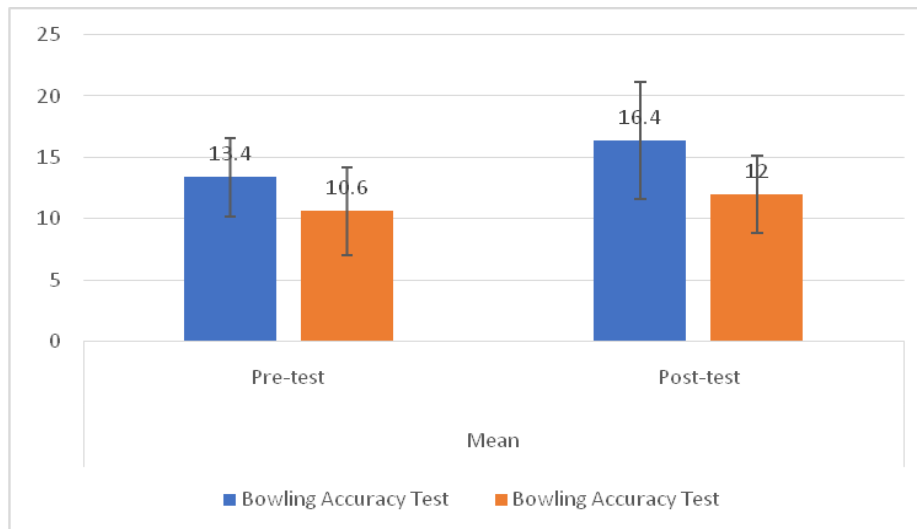


Figure 1. Comparison of Bowling Accuracy Test between the Experimental Group (EG) and Control Group (CG).

### Conclusion

The result of the study in relationship to the Bowling Accuracy skill Test shows that there is a significant change in the Bowling Accuracy of the Experimental Group (EG). The change was not significant in the Control Group (CG). Hence it can be concluded that the change which was seen as significant in the Experimental Group (EG) was due to the Imagery intervention of four-week period consisting of a 5 session Imagery Intervention per-week.

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## **Anxiety Levels In Male And Female Chess Players-A Comparative Study In Sports Psychology**

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### **Introduction:**

Anxiety is a psychological and physiological state characterized by somatic, emotional, cognitive and behavioral components. The root meaning of the word anxiety is 'to vex or trouble'; in either the absence or presence of psychological stress, anxiety can create feelings of fear, worry, uneasiness and dread. Anxiety is considered to be a normal reaction to a stressor. It may help a person to deal with a difficult situation by prompting one to cope with it. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder. Physical effects of anxiety may include heart palpitation, muscles weakness and tension, fatigue, nausea, chest pain, shortness of breath, stomach ache/ head ache and immune and digestive system function are inhibited (the fight or flight response). External signs of anxiety may include pale skin, sweating, trembling and papillary dilation. Someone who has anxiety might also experience it as a sense of dread or panic. Competitive anxiety causes performance deterioration. Optimum level of anxiety before, during and after the competition enables the sports person to be ready to perform. Too much of anxiety causes muscle tension, nervousness, in ability to make decisions, feeling over whelmed, feeling out of control, trembling, nail biting, increased sweating, etc., which deteriorates the performance. Many athletes who perform well during ~ 162 ~ International Journal of Physiology, Nutrition and Physical Education training or practice can suffer from performance anxiety on game day. If feelings of nervousness, anxiety or fear interfere with your sports performance.

### **Objective Of The Study :**

The purpose of this study was to compare the Sports Competitive Anxiety between Male and Female Chess Players of Hyderabad District.

### **Methodology**

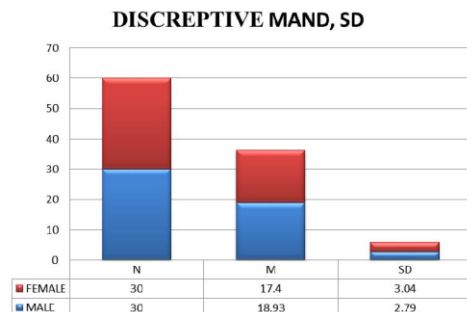
Total (N=60) Chess male and female players, male (30) and Female (30), belonging from the Hyderabad, Telangana State were selected. The variable selected for the present study was Sports Competitive Anxiety. Sports Competitive Anxiety Test (SCAT) by R. Martin, 1990 was used as criterion measure. For comparing Sports Competitive Anxiety between the male and female players, descriptive Statistics and independent 't' test were applied at 0.05 level of significance. Age ranged of the players is between 18-25 years. The variable selected for the present study was Sports Competitive Anxiety. Criterion Measures For the purpose of the this study was Score obtained in the sports competition anxiety test questionnaire In this study Sports Competition Anxiety Test (SCAT Martens, 1990) was used to measure Sports Competition Anxiety.

score sequence was 1, 2, 3, for ten test items which were taken for the scoring purpose were 2, 3, 5, 6, 8, 9, 11, 12, 14, and 15 6 and 11 score reverse was carried according to the following key score (1) Response hardly ever (2) sometime (3) often however Spurring questions e.g. 1, 4, 7, 10 and 13, were not scored out as suggested by Rainer Martren. Was criterion measure of the study Sports competition anxiety Test (SCAT) constructed by was used for the collection of data for this study. Scoring of SCAT Sports Competition Anxiety Test (SCAT) by consists of total 15 statements. Scores obtained for each statement was added up which represent an individual's total score on Sports Competition Anxiety (SCAT Score). Then the SCAT score was analyzed. Statistical Analysis For comparing Sports Competitive Anxiety between male & female chess players, descriptive statistics' and Independent t test was applied at 0.05 level of significance. Data analysis was performed using SPSS 21 software.

## Results and Discussion:

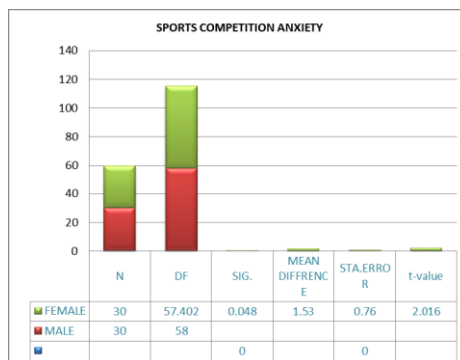
The statistical analysis of data has been presented in this study. The Sports Competition Anxiety data was collected on total (N=60) (sixty) chess Players, (30) Male and (30) Female were selected as subjects from District Hyderabad. To characterize and compare the sports competition anxiety test (SCAT) of male and female Chess players. it is found 't' value (2.016) from table 2 there is no significant difference between male and female chess players of Hyderabad District.

**Study 1:** Mean and standard deviation of sports anxiety test of chess Male and Female Players. Descriptive Statistics Groups N M Sd Male 30 18.93 2.79 Female 30 17.40 3.04 Significant at 0.05 level. Table 1: reveal that the mean and standard deviation score of sports anxiety of chess male players:  $18.93 \pm 2.79$ , female players:  $17.40 \pm 3.04$ .



Graph 1: Graphical representation Mean and SD of sports competition anxiety of male and female chess players.

**Study 2:** Independent t-test of Sports Competition Anxiety of The Male and Female Chess Players. Independent t- test Groups N Df Sig. (2tailed) Mean Difference Sta. Error Difference t-Value Male 30 58 .048 1.53 .760 2.016 Female 30 57.402 Significant at 0.05 level.



## Conclusions

The following conclusions were drawn on the basis of the analysis of the present data:

No significant difference was found between the female and male chess players in the State in relation to Sports Competitive Anxiety. On the basis of mean scores it can be seen the female chess players were having less Sports Competitive Anxiety level than male chess players. During the study investigator realized that the Competitive Anxiety depends upon player's experiences and number of participation in the different tournaments.

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## **Student Self-Regulation And Self-Determination As Predictors Of Positive Student Outcomes In Ethiopian Sports Academies**

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### **Abstract**

Although much has been learned in recent years regarding student self-regulation and self-determination, little is known about the potential contribution of self-regulation and self-determination to research on sports academy student's learning experience and outcomes. Also, the self-regulation and self-determination of Ethiopian sports academy students and the potential educational impacts have not been known due to the lack of empirical evidence. This study examined the magnitude of Ethiopian sports academy student self-regulation and self-determination and the predictive validity of these constructs on student positive outcomes. Thus, the study used survey data from samples ( $n = 257$ ) of students in two selected Ethiopian sports academies (Ethiopian Youth Sports Academy and Athlete Tirunesh Dibaba Sports Academy). The study applied Pintrich's self-regulation theory (SRT) and Ryan and Deci's self-determination theory (SDT) as guiding frameworks. The SRT hypothesizes that academic environments support students' ability to regulate their own learning improve learning effectiveness and efficiency, thereby positively contributing towards the attainment of multiple learning outcomes. Also, the SDT hypothesizes that environments that support perceptions of autonomy, competency, and social-relatedness improve motivation, thereby positively influencing multiple learning outcomes. Findings indicate above average levels of self-regulation and self-determination for the two sports academies subgroups. Also, group difference tests revealed significant positive differences in average scores between-groups categorized by institution,  $.28 \leq \text{Cohen's } d \leq .56$ . Moreover, correlation results between variables are found to be ( $r$  ranging from .39 to .71 and  $p < .01$ ) for the total group. These expected correlations were between modest to moderate strengths. Implications of the findings, limitations in the existing research; and suggested improvements are discussed. **Key words: Sports Academies, Self-regulation, Self-determination, and Ethiopia.**

### **Background of the study**

Self-determination is one of the essential ingredients of student's participation and commitment in learning and sports (Beachboard et al., 2011). The Self-determination theory (SDT) is a theory of motivation. Ryan and Deci (2000, p. 69) describe motivation as the "energy, direction, persistence... aspects of activation and intention" that address the why of human behavior. Motivation is vital: if students do not want to learn, little learning is likely to take place as learning is an active process requiring the individual conscious and deliberate effort (Richards & Levesque-Bristol, 2014). Numerous studies have confirmed that intrinsic or more internalized forms of motivation are associated with increased interest, engagement, effort, learning, and satisfaction with education (Deci & Ryan, 2010). Deci and Ryan (1985) identified three basic needs conducive to the development of more highly internalized motivation. These are: autonomy, competence, and relatedness.

Autonomy is an internal perceived locus of causality, which has the ability to posit that choice and autonomy enhance intrinsic motivation. Competence is conceptualized as a sense of self-efficacy, and it is vital in the motivating scenario because people adopt activities that make them feel their actions affect outcomes (Harter 1992). Relatedness is described as “the need to feel belongingness and connectedness with others” (Ryan & Deci, 2000) (p. 68). Feelings of relatedness, measured in terms of institutional climate and teacher-student relationships, have been linked to outcomes including self-efficacy, engagement, interest in learning, and higher grades (Vansteenkiste, Lens, & Deci, 2006). Research reinforces the importance of school and family as support networks in health promotion among young people (Melissa et al., 2007).

It is hard to think about the academic success of students in schools if the students are not self-directed and self-motivated and cannot sustain cognition, affect, and behavior in order to assist in pursuing their academic and professional goals (Zimmerman, 2002). Self-regulation refers to individuals’ beliefs about their capability to engage in appropriate actions, thoughts, feelings, and behaviors in order to pursue valuable educational, psycho-social, and sports-related goals while self-monitoring and self-reflecting on their progress toward goal completion (Pintrich & Zusho, 2007). The need for self-regulation of students enrolled in post-secondary education such as sports academies is undisputable (Gould & Carson, 2008). Promoting the self-determination and self-regulation of students, particularly adolescents in sports academies, has become increasingly important as today’s student athletes are tomorrow’s world class leaders in competitive sports (Elferink-Gemser, 2005). Also they need to be proactive and self-disciplined and engage in self-creation, self-initiation and self-evaluation of academic and sports-related tasks. Moreover, students are expected to exercise control of their conduct, maintain motivation, develop plans for the future, and put into effect goals and learning strategies (Pintrich, 2004; Pintrich & Zusho, 2007).

### **Research Questions**

Is there a significant difference in scores of perceived self-determination and self-regulation across institution, class year, gender, and sports participation types?

What is the relationship between students’ self-determination and self-regulation during the sport academy years?

### **Significances**

By examining a couple of institutional contexts, this research better understood the perception students hold about their mechanisms of self-regulation and self-determination in sports academies in Ethiopia. Also with this understanding, teachers can plan interventions to promote student engagement across disciplines, and school administrators can assist with maximizing student engagement.

### **Research Methods**

#### **Research Design**

As stated earlier in the introduction, the proposed research applied, Ryan and Deci’s Self-Determination Theory (Ryan & Deci, 2000), and Pintrich’s self-regulation theory (Pintrich & De Groot, 1990) to the analysis of the primary data collected from students enrolling in two sports academies in Ethiopia. To this end, this research used a cross-sectional survey design comprising of a questionnaire to solicit self-reported evidence about students’ self-regulated characteristics and self-determination.

#### **Study Participants**

The study population includes students and study participants were selected based on criteria and systematic selection procedures applied at the different stages of the selection process. Two sports academies: Addis Ababa sports academy and Asela sports academy were included. Then, the sampled (n= 257) enrolled in these two institutions were included in the study of student engagement experiences, their self-determination and self-regulation.

#### **Instrument for Data Collection**

Students’ questionnaire was modified from the modified version of the student engagement survey (Jimma, 2014), Ryan and Deci self-determination questionnaire (Ryan & Deci, 2000), and the short version of self-regulated learning questionnaire (Asmamaw, 2014).

#### **Study Procedure**

This study reported about the predictability of student self-determination and self-regulation on their learning, development, and satisfaction, and provides an insight on students’ self-regulated characteristics and their determination in sports academies in Ethiopia. Following this, the researchers analyzed the factors of self-regulation and self-determination and how that affects student learning, development, and satisfaction based on data collected from students enrolled in Ethiopian sports

academies. Finally, the researchers examined the relationships of these constructs with a number of outcome measures including learning gains, development, and satisfaction.

### Research Analysis Methods

This research assessed differences in student self-determination and self-regulation by comparing the level or extent of having these characteristics based on the study participants reported within and across sports academies, gender, age, and year levels. For this, *t* test and effect size were calculated for the total sample. Moreover, correlation analyses were used to examine the patterns of relationships exhibited between the variables of interest.

### Results

#### Between Group Mean Differences

In this study, mean differences were computed to test whether or not students' engagement, self-determination, and self-regulation differ across academy type, gender, age, and entry year. The results of these analyses revealed no statistical significant between group differences for the variables across gender, age, and entry years. However, the group difference tests were significant between academy types. Table 1 presents the means and standard deviations for students of Ethiopian Sports Academy and students of Tirunesh Dibaba Sports Academy.

Table 1. *Differences in student self-regulation, and self-determination between students in Ethiopian Sports Academy and Tirunesh Dibaba Sports Academy*

Variable	Tirunesh Dibaba SP (n = 119)		Ethiopian Youth SA (n = 138)		95% CI		df	t	Cohen's d
	M	SD	M	SD	LL	UL			
Tse <sup>1</sup>	2.66	.62	2.35	.78	2.40	2.59	255	3.50***	.44
Plea <sup>2</sup>	2.75	.60	2.40	.81	2.47	2.53	255	3.90***	.49
Mcog <sup>3</sup>	2.57	.65	2.35	.79	2.36	2.54	255	2.41*	.30
Ilea <sup>4</sup>	2.43	.72	2.08	.78	2.14	2.33	255	3.76***	.47
Pcomp <sup>5</sup>	3.14	.64	2.67	.82	2.79	2.98	255	5.04***	.63
Rela <sup>6</sup>	3.02	.59	2.48	.93	2.63	2.84	255	5.45***	.68
Pauth <sup>7</sup>	2.27	.85	2.10	.87	2.07	2.29	255	1.62	.

*Note.* CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit; df = degrees of freedom; Cohen's d = Effect size.

<sup>1</sup>Time management and study environment, <sup>2</sup>Peer learning, <sup>3</sup>Metacognitive skills,

<sup>4</sup>Independent learning, <sup>5</sup>Practical competence, <sup>6</sup>Relatedness with others, <sup>7</sup>Personal autonomy

Effect size  $\delta$  is defined as the ratio of the difference between the mean values of students group in Ethiopian Sports Academy and students group in Tirunesh Dibaba Sports Academy over the pooled standard deviation,  $\delta = (\mu_1 - \mu_0) / \sigma$ .

Significance levels. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

As shown in Table 1, the analysis of mean difference for the variable Tse revealed a significant variation between groups in Tirunesh Dibaba and Ethiopian Sports Academies,  $t(3.50)$ ,  $p < .001$ , effect size .44 SD. Similarly, the analysis of mean difference for the variable Plea shows a significant variation between groups in Tirunesh Dibaba and Ethiopian Sports Academies,  $t(3.90)$ ,  $p < .001$ , effect size .49 SD. Also, the analyses for the rest of the other variables demonstrated significance differences. In general, almost all measured variables revealed differences in students mean scores across academy type. As depicted in Table 1, these observed differences ranges between .30 to .68, which fall between low to moderate levels of differences in students' self-regulation and self-determination domains.

### Correlation Analyses

We used Pearson correlation analysis for the total sample group to measure the extent of associations that exist between variables. The studied variables were components of self-regulation, self-determination and outcome measures. Table 2 presents the total group inter-correlations.

Table 2: Correlations between Self-regulation, self-determination & Positive Student Outcome Measures.

Measure	Gains in general education and practical competence	Gains in higher-order thinking skills	Satisfaction
SRL			
Tse1	.54	.56	.54
Peer1	.58	.59	.52
Mcog1	.56	.56	.51
Mixed1	.56	.56	.53

Measure	Gains in general education and practical competence	Gains in higher-order thinking skills	Satisfaction
SDT			
Competence	.68	.61	.56
Relatedness	.71	.68	.61
Autonomy	.50	.45	.39

As shown in Table 2, the 4-factor self-regulation domains and the 3-factor self-determination domains were found significant correlates of the 3 positive student outcome measures ( $r$  ranging from .39 to .71 and  $p < .01$ ) for the total group. These expected correlations were between modest to moderate strengths. Finding positive relationships between the proposed self-regulation model and the self-reported gains and satisfaction highlights the intimate relationship between perceptions of self-regulatory experience in sport academy and perceived attainment of gains and satisfaction. The results found in the current study is consistent with the literature in this field confirming the moderate effects of demographic variables on the learning gains and the significant greater effects of self-regulated variables after adjusting for the demographic variables (Khan et al., 2013; Luu & Freeman, 2011; Porchea et al., 2010). Further, the positive associations found between the self-regulated sub-components and the self-reported gains and satisfaction, in the current study, offer additional convergent validity evidence in support of the scale. However, this initial validation shows only the evidence in selected variables and sports academies; further study is needed to identify the variables more widely, including more sports academies to support generalizations in a broader sense.

### Study Limitations and Future Directions

Findings of the current study have implications for assisting students through the development of strategies that could facilitate the promotion of self-determination and self-regulation experiences as well as positive outcomes among students within the two studied institutions. However, the study has limitations and therefore caution must be exercised in generalizing the findings of this study to other groups of sport academy students in the studied context. The current study relied exclusively on self-report measures for its data. Also, the inclusion of only students of two academies of sports in the sample of the current study also limits the generalizability of the findings.

To help offset these limitations, future research should employ larger and more randomized samples across different academies to help improve the generalizability as well as decrease bias in the design. Longitudinal research designs would also help to better assess the changes in students self-regulation and self-determination over time.



## Conclusions

The findings of the current study supported the contention that students' self-determination and their self-regulated behaviors in sport would have a significant influence to improve the quality of student outcomes in the sport academy programs in Ethiopia. In addition, the findings suggest that an aspect of self-determination and self-regulation predicts students' gains in learning and development as well and overall satisfaction.

In support of both the self-regulation and self-determination literature, the findings of this study lend further assertions to the multidimensionality of self-determination behaviors and to the utility of self-regulatory and self-determination practices as an influence on the quality of positive student outcomes. In addition, these findings further extend previous notions of self-determination and self-regulation that were considered imperative aspects of quality coaching in earlier studies. These positive results reinforce the fact that the self-determination and self-regulation behaviors have a major impact in transforming the quality of positive student outcomes in the academies of sports, by refocusing coaches' attention on the changes in coaching approach that are powerful to improve the quality of sports learning, development and satisfaction for the students. This study group difference analyses support that student self-regulation and self-determination behaviors are experienced by sports academy students differently by institutional type than any other variable.

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## Self-Efficacy And Level Of Aspiration Of State Level Cricket Players Of Manipur

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### Abstract

The purpose of the present study is to find out Self-efficacy and level of aspiration of state level Cricket Players of Manipur. Fifty (50) state level cricket players were stratified random sampling technique who participated in the state level tournament of Manipur within the age ranged from 19 to 25 years in Imphal city. The data was collected by Questionnaire. The descriptive analysis of data was used in the study. The data was analyzed by percentage and graph. The cricket players of Manipur from Imphal city were high level of Self-efficacy and Aspiration. Keywords: Self-efficacy, Aspiration, Cricket

### INTRODUCTION

Man is the only creature who is inquisitive about the Universe-its services and wonders. In the opening, this inquisitiveness was about concrete things but soon after the focus shifted to abstract metaphysical concepts such as soul, mind, spirit etc. Some logical inclined thinkers became interested in the understanding of emotional processes and the various inspirations on human performance. Physical education delivers consciousness and learning boldness for the physical, mental, emotional, social and spiritual development of the human personality that strengthens the social associations and inspects the impact of contact between the individual, the family, the wider community and the environment on the health of population. Physical education and sport's access every human being has fundamental right for full advance of personality to develop physical, intellectual and moral powers through the educational System and in other aspects of social life. Movements are pre-shaped in thought, and individuals forestall either hopeful or doubtful scenarios in mark with their level of self-efficacy. Once an action has been taken, high self-efficacious persons invest more effort and persist longer than those with low self-efficacy. When setbacks occur, the former recover more quickly and maintain the commitment to their goals. Self-efficacy also allows people to select challenging settings, explore their environments, or create new situations. A sense of competence can be acquired by mastery experience, remote experience, verbal encouragement, or physiological feedback. Self-efficacy, however, is not the same as positive impressions or unrealistic optimism. Effectiveness is using images mediated the relationship between imagery ability and imagery use. People with low self-efficacy toward a duty are more likely to escape it, while those with high self-efficacy are not only more likely to attempt the duty, but they also will work harder and persist longer in the face of difficulties. Self-efficacy influences: what activities students select, (2) how much effort they put forth, (3) how persistent they are in the face of difficulties, and (4) the difficulty of the goals they set. Students with low self-efficacy do not expect to do well, and they often do not achieve at a level that is proportionate with their aptitudes. They do not believe they have the skills to do well so they don't try.

### STATEMENT OF THE PROBLEM

The purpose of the present study is to find out Self-efficacy and level of aspiration of state level Cricket Players of Manipur.

### OBJECTIVE OF THE STUDY

1. To conduct the test of self-efficacy and level of aspiration of state level Cricket players of Manipur.
2. To find out self-efficacy and level of aspiration of state level Cricket Players of Manipur.

## DELIMITATION

The following are the delimitation of the Studies

1. The study was delimited to Cricket Players only.
2. The Study was delimited to individuals between the chronological ages range from 19 to 25 years.
3. The study was further delimited to State cricket players of Manipur State.
4. Research was delimited to questionnaire study only.
5. The study was further delimited to following parameters namely
  - Self efficacy
  - Self aspiration

## LIMITATION

1. This study has not taken into cognizance of the influence of outside agencies and communities.
2. The researcher had no control over the daily lifestyle of the subjects which might influence the study may be consider as a limitation.

## Significance Of The Study

The following are the significance of the study

1. The result of the present study may by the foundation for a better and improved program and facilities in the special and peculiar condition of Imphal city.
2. This study will also helpful to those coming students who work on this field.
3. The result of the present study would give the knowledge about self-efficacy and level of aspiration.
4. This research may also make all those concerned authorities and profession in self efficacy and aspiration to their players.

## Methodology

The present study was undertaken with a view to compare the self-efficacy and level of aspiration of State level Cricket players of Manipur. Fifty (50) state level cricket players were stratified random sampling technique who participated in the state level tournament of Manipur within the age ranged from 19 to 25 years in Imphal city. The data was collected by administering the Schwarzer, R and M Jerusalem Self-efficacy Questionnaire and John J Ray, Fear of success and level of aspiration Questionnaire. The descriptive analysis of data was used in the study. The data obtained from given responses in the questionnaire rated according to the key and data was analyzed by percentage and graph.

## RESULTS

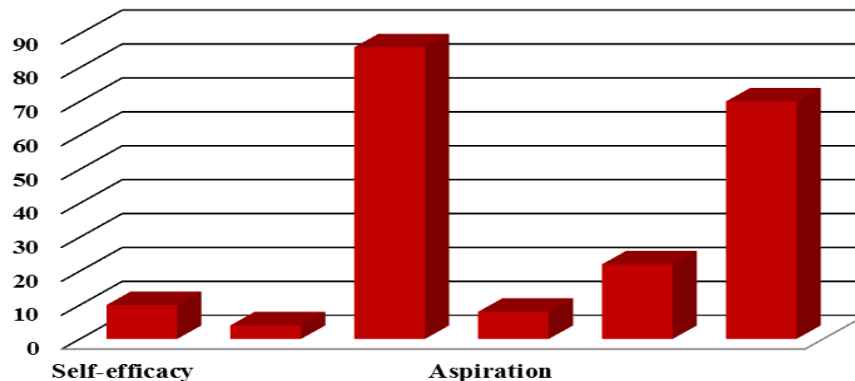
Self-efficacy and level of aspiration of state level Cricket Players of Manipur which was conducted on the entire subject by using the Schwarzer, R and M Jerusalem Self-efficacy Questionnaire and John J Ray, Fear of success and level of aspiration Questionnaire were highlighted in table 1 and figure 1.

**Table 1:** Level of scoring for Self-efficacy and Aspiration of state level cricket players of Manipur

Variables	Level of scoring	Scoring	No. of Players
Self-efficacy	Low	10-20	5
	Moderate	21-30	2
	High	31-40	43
Aspiration	Low	10-20	4
	Moderate	21-30	11
	High	31-40	35

From the table 1 revealed that the level of Self-efficacy and Aspiration of state level cricket players of Manipur found to be high scoring in between 31-40 which had 43 (forty three) players out of 50 (fifty) and 35 (thirty) players out of 50 (fifty) respectively. Figure 1 stressed the graphical representation for Self-efficacy and Aspiration of state level cricket players of Manipur showed highest 86% and 70% respectively on the score level of 31-40. Hence it proved that the cricket players of Manipur from Imphal city were high level of Self-efficacy and Aspiration.

**Figure 1:** Level of percentage for Self-efficacy and Aspiration of state level cricket players of Manipur



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## **Building Indicator Assessment Index For Men 14 - 15 Years Old Of Tug Of War Team In Ninh Kieu District, Can Tho City, Viet Nam.**

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### **Abstract**

The article uses the methods of scientific research in the sport, which building indicator assessment index for men 14 - 15 years old of tug of war team in Ninh Kieu District, Can Tho City, Viet Nam.

Key word: physical, index, tug of war.

### **Introduction**

In Vietnam, tug of war is a popular folk game for a long time, is held in the occasion of the festival, Tet traditional, due to conditions and requirements of yards. Tug of war are the most common content of the entertainment activities, the games of the armed forces, agencies, schools and people of all classes.

In 2012, with the aim of introducing and developing Tug of war in Vietnam, the Ministry of Education and Training is introducing it to the Phu Dong games to promote the practice of Tug of war in Secondary Schools. The success of male team in Can Tho City Secondary School in 2012 was a proud achievement. However, to ensure the training and training of the Department of Tug of war in the direction of specialization to achieve the highest achievement in the next Phu Dong Games. Based on the reference of scientific documents, namely in Ninh Kieu District, Can Tho City, the content of the criteria for evaluating the athlete's physical strength of the junior tug of war team is necessary. Based on our chosen research direction: Building indicator assessment index for men 14-15 years of Tug of war in Ninh Kieu district – Can Tho City.

To achieve the product, the subject pursues the following objectives:

- Summarize the physical assessment criteria for athletes to pull the age of 14 - 15 authors in and outside the country. Interviews with trainers, experts and professionals. Testing the reliability of indicators Develop evaluation criteria

In order to solve the above objectives, the method of document research, questionnaire interview, pedagogical method and statistics were used in the research.

Research subjects of the project are 16 male athletes 14-15 years old Tug of war team Ninh Kieu District - Can Tho.

Interviewers: 20 coach, expert, managers.

### **2. Results And Discussion**

2.1 Current status of the use of fitness indicators of male athletes 14-15 athletes tug of war the author at domestic and foreign.

Based on the material of Nguyen The Truyen (1999); Nguyen Ngoc Cu (1998); Nguyen The Truyen, Nguyen Thi Tuyet and Nguyen Manh Hung; Selection document of the Department of Culture, Sports and Tourism. Ho Chi Minh (2005); Chinese selection materials (2008); Endow Weenzel - René Wenzel. Based on that, the topic of surveying the training activities of the units have strong movement in the city. Based on the current survey, the statistical data on physical fitness indicators for male athletes 14-15 years old drag team in Ninh Kieu District - Can Tho City and eliminated the indicators inappropriate selection The following characteristics are typical:

**General Physical Test:**

1. Hand Pull Hand (kg)
2. Inverted hand force (kg)
3. Run 1500m (second)
4. Run 6 - 9 km (p)
5. Run high 30m (s)
6. Thigh muscles measured (kg)
7. Back muscular measuring (kg)
8. Run variable speed (s).

**Physical Fitness Test:**

1. Foot change with podium level (times)
2. Push in a minute (times)
3. Weighted weight with the weight of the person standing up to sit down for a minute (times)
4. Jumping rope in one minute (times)
5. Turn on the ruler with a distance of 30m (second)
6. Squatting ducks with a distance of 30m (second)
7. Carry on the shoulder running 30m (second)
8. Hand pulling single bar (l)
9. Standing average ton (s)
10. High turn with the lance 1-1.4m (l)
11. Maximum inhalation of lungs (l)
12. Pull pulley (s)
13. Hanging with glue wire (s)
14. Climbing with two hands 15 / Double inhalation.

**2.2.1. Interview result:**

From the results of the above, conduct the formulation and conduct the interview. Two interviews a month apart. Test the coincidence of the results of the two interviews, and compare them through the index  $\chi^2$ , in table 2.1.

Table 2.1 Comparison of the results of two interviews of physical fitness indicators of male athletes aged 14-15 in Ninh Kieu District - Can Tho City first time (n = 38); second (n = 37)

		Interview result					
No	Test	First		Second		$\chi^2$	p
		agree	%	agree	%		
General Physical Test:							
1	Hand Pull Hand (kg)	38	100	36	97.30	1.03	>0.05
2	Inverted hand force (kg)	35	92.11	36	97.30	1.01	>0.05
3	Run 1500m (second)	25	65.79	27	72.97	0.46	>0.05
4	Run 6 - 9 km (p)	35	92.11	33	89.19	0.19	>0.05
5	Run high 30m (s)	28	73.68	26	70.27	0.11	>0.05
6	Thigh muscles measured (kg)	26	68.42	27	72.97	0.19	>0.05
7	Back muscular measuring (kg)	20	52.63	25	67.57	1.74	>0.05
8	Run variable speed (s).	22	57.89	27	72.97	1.88	>0.05
Physical Fitness Test:							
9	Jumping leg change in a minute (time)	36	94.74	36	97.30	0.32	>0.05
10	Push in a minute (times)	36	94.74	37	100	2.03	>0.05
11	Pull the hand of the bar a minute (times)	25	65.79	27	72.97	0.46	>0.05
12	Wear for one minute (times)	30	78.95	32	86.49	0.75	>0.05
13	Jump for a minute (times)	31	81.58	31	83.78	0.06	>0.05
14	Standing on average a ton of time calculates the maximum execution time (seconds)	28	73.68	24	64.86	0.69	>0.05
15	Turn on the 30m (second)	36	94.74	36	97.30	0.32	>0.05
16	Elevate the platform with a height of 1-1.4m calculated in 1 minute (seconds).	26	8.42	26	70.27	0.03	>0.05

17	Squatting ducks 30m (second)	33	86.84	35	94.59	1.34	>0.05
18	Iodine inhalation calculates the maximum number of times (l)	22	57.89	24	64.86	0.38	>0.05
19	Dual beam beams calculate the maximum number of executions (l)	23	60.53	26	70.27	0.79	>0.05
20	Passenger on the shoulder running 30m (second)	38	100.0	36	97.30	1.03	>0.05
21	Pull the pulley with a mass of 5 times the weight of the body 4 meters (s)	28	73.68	27	72.97	0.00	>0.05
22	Hanging with the zipper pulls the maximum carry time (seconds)	22	57.89	23	62.16	0.14	>0.05
23	Climbing with two hands (not grip) with the height from the ground to the top 10-15m calculated time (seconds)	24	63.16	26	70.27	0.43	>0.05

From the results of Table 2.1, the indicators were  $\chi^2$  calculated as (<3.84) at the probability of  $P > 0.05$ .

The results of the two interviews with experts, coaches and managers are highly consistent in terms of responses. From this result, the subjects selected for the tests had a total of  $\geq 75\%$  of the respondents. In order to ensure objectivity and to avoid subjective errors, each questionnaire has a "open" question for experts, coaches, referees, professionals, and teachers. They can add tests that they think are necessary.

From the results of the interview in Table 2.1, the subject has selected a system of tests to study the physical and technical development of male athletes 14-15 years old Tug of war team in Ninh Kieu District - Can Tho City as follows: General physical test: 3 tests - Physical fitness test: 7 tests

#### 2.1.2. Test the reliability of the indicators

In order to determine the reliability of the indicators, the topic of calculating correlation coefficient (r) under Pearson indicators between the two tests and the test results is presented in Table 2.2.

Table 2.2 Confidence test of male athletes' test of 14-15 year old Tug of war team Ninh Kieu District - Can Tho City

	Test	First $\bar{X} \pm S$	Second $\bar{X} \pm S$	r	P
General physical test	Hand pressure (kg)	32.74 $\pm$ 4.52	35.43 $\pm$ 4.77	0.94	< 0.01
	Inverted knee (kg)	31.11 $\pm$ 4.63	33.18 $\pm$ 4.77	0.85	< 0.01
	Running 1500m (second)	556.40 $\pm$ 55.56	553.62 $\pm$ 55.87	0.87	< 0.01
Physical fitness test	Jumping leg change in a minute (time)	55.00 $\pm$ 4.12	55.94 $\pm$ 3.91	0.98	< 0.01
	Push in a minute (times)	10.25 $\pm$ 1.61	11.81 $\pm$ 1.33	0.87	< 0.01
	Wear for one minute (times)	21.75 $\pm$ 4.28	24.13 $\pm$ 4.56	0.89	< 0.01
	Jump for a minute (times)	94.81 $\pm$ 18.12	97.06 $\pm$ 17.81	0.91	< 0.01
	Turn on the 30m (second)	14.88 $\pm$ 1.77	14.64 $\pm$ 1.82	0.99	< 0.01
	Squatting ducks 30m (second)	10.55 $\pm$ 2.03	10.52 $\pm$ 2.01	0.92	< 0.01
	Person on the shoulder running 30m (second)	10.38 $\pm$ 1.52	10.25 $\pm$ 1.47	0.93	< 0.01

Table 2.2 shows the reliability coefficients between the two tests ( $r > 0.8$  and  $P < 0.01$ ). Through the steps of synthesizing materials, interviews, testing the reliability of the test, the thesis has identified the physical and technical assessment of athletes 14-15 years old drag team Ninh Kieu - Can Tho city includes the following tests:

#### General physical test: 3 tests

1. Manual hand force (kg) 2. Inverted hand force (kg) 3. Running 1500m (second)

**Physical fitness test: 7 tests**

1. Foot swing with a platform height of 30 - 40 cm duration in one minute (times) 2. Push resistance in a minute (times) 3. weight with weight equal to the weight of the person Stand up for a minute (times) 4. Jump for a minute (times) 5. Turn on the frog for 30m (seconds) 6. Squatting for 30m (seconds) 7. shoulder running 30m (second)

Build physical evaluation standards of male athletes age 14-15 team tug of war Ninh Kieu District - Can Tho City.

2.2.1. *The physical strength of men in the 14-15-year-old athlete Tug of war team Ninh Kieu District - Can Tho*

Table 2.3 The physical strength of men in the 14-15-year-old athlete Tug of war team Ninh Kieu District - Can Tho (n= 16)

No	Test	Status		
		X	±	Cv%
1	Hand pressure (kg)	32.74	4.52	13.82
2	Inverted knee (kg)	31.11	4.63	7.88
3	Running 1500m (second)	556.40	55.56	9.99
4	Jumping leg change in a minute (time)	55.00	4.12	7.48
5	Push in a minute (times)	10.25	1.61	15.73
6	Wear for one minute (times)	21.75	4.28	9.69
7	Jump for a minute (times)	94.81	18.12	9.11
8	Turn on the 30m (second)	14.88	1.77	11.89
9	Squatting ducks 30m (second)	10.55	2.03	7.19
10	Passenger on the shoulder running 30m (second)	10.38	1.52	8.67
11	Measure the athlete's fall (cm)	1.52	0.09	5.71
12	4m rear wheel drive scooter (sec)	10.37	1.95	8.79

The data in Table 2.3 shows that the indexes have average homogeneity among research subjects (10% <CV <20%).

2.2.2 *Assessment of physical strength of men in the 14-15-year-old team pulling Ninh Kieu District - Can Tho City:*

Based on results of two physical and technical tests of 14-15 year old athletes from Ninh Kieu District - Can Tho City, the topic of scoring scale (C scale) to evaluate power and technique of male athletes 14-15 years old team dragging Ninh Kieu District - Can Tho City by the method of C-level is presented in chapter 2 according to the research indicators are presented in tables 2.4 and 2.5

Table 2.4 *Scoring test of general strength of male athletes 14-15 years old Tug of war team Ninh Kieu District - Can Tho City*

Score	Conveniently hand force (kg)	Negative hand force (kg)	Run 1500m (s)
1	21.43	19.54	695.31
2	23.69	21.86	667.52
3	25.95	24.17	639.74
4	28.22	26.48	611.96
5	30.48	28.80	584.18
6	32.74	31.11	556.40
7	35.00	33.43	528.62
8	37.26	35.74	500.84
9	39.53	38.06	473.06
10	41.79	40.37	445.28



*Table 2.5 Table of scores of professional strength test of male 14-15 year old athlete Tug of war Ninh Kieu District - Can Tho City*

Score	Jumping leg change in a minute (time)	Push in a minute (times)	Wear for one minute (times))	Jump for a minute (times)	Turn on the 30m (second)	Squatting ducks 30m (second)	Passenger on the shoulder running 30m (second)
1	44.71	6.22	11.05	49.52	19.30	15.61	14.19
2	46.77	7.03	13.19	58.57	18.41	14.60	13.43
3	48.83	7.83	15.33	67.63	17.53	13.59	12.67
4	50.88	8.64	17.47	76.69	16.64	12.58	11.91
5	52.94	9.44	19.61	85.75	15.76	11.56	11.14
6	55.00	10.25	21.75	94.81	14.88	10.55	10.38
7	57.06	11.06	23.89	103.87	13.99	9.54	9.62
8	59.12	11.86	26.03	112.93	13.11	8.53	8.86
9	61.17	12.67	28.17	121.99	12.22	7.51	8.10
10	63.23	13.47	30.31	131.05	11.34	6.50	7.34

2.2.3. Setting up the classification criteria for men's athletes 14-15 years old Tug of war team in Ninh Kieu District - Can Tho CityBased on the classification criteria of five male athletes from the age of 14-15 years, the team of Ninh Kieu District - Can Tho City will compete as follows:

Excellent: 9 - 10- Good: From 7 - <9 points - Average: From 5 - <7 points Weak: From 3 - <5 points Poor: From 0 - 3 points.

\* Classification of the test:According to the above convention, based on the scores of 2.4 and 2.5, to assess the physical strength of male athletes 14-15 years old Tug of war team in Ninh Kieu District - Can Tho city, including 10 tests with the maximum score of 100 points .

Table 2.6 Physical and technical classification of male athletes 14-15 years old Tug of war team Ninh Kieu District - Can Tho.

Tests	Classification				
	Excellent	Good	Average	Weak	Poor
	9 - 10	7 - < 9	5 - < 7	3 - < 5	0 - 3
General physical test	27 - 30	21 - < 27	15 - < 21	9 - < 15	0 - 9
Physical fitness test:	63 - 70	49 - < 63	35 - < 49	21 - < 35	0 - 21
Total	90 - 100	70 - < 90	50 - < 70	30 - < 50	0 < 30

2.2.4 Appraisal of male athletes 14-15 years old pull team co Ninh Kieu - Can Tho City:

Based on the results of Tables 2.3, 2.4, 2.5 and 2.6, the theme of the application of standard criteria and classification for athletes. Results presented in Table 2.7 and 2.8

Table 2.7 Results of personal scores of physical fitness test of male athletes 14-15 years old Tug of war team in Ninh Kieu District - Can Tho City.

No	Full name	General physical test				Rank
		Test 1	Test 2	Test 3	Total score	
1	Phan Nhut Thang	6.6	5.0	4.56	16.13	Average
2	Pham Nguyen Minh Duc	6.4	6.2	7.35	19.95	Average
3	Pham Viet Ky Anh	3.6	2.5	5.30	11.40	Weak
4	Ly The Hung	7.5	9.8	1.41	18.75	Average
5	Huynh Minh Quan	2.9	5.1	4.93	12.96	Weak
6	Huynh Minh Truong	3.3	2.4	5.37	10.98	Weak

7	Nguyen Minh Huy	6.8	5.9	1.83	14.53	Weak
8	Pham Anh Duy	6.9	5.4	9.15	21.50	Good
9	Thieu Quang Minh	4.3	4.1	4.85	13.21	Weak
10	Nguyen Huynh Quang Khanh	4.9	6.4	4.63	15.94	Average
11	Pham Minh Long	5.5	4.0	6.49	16.00	Average
12	Bui Tien Thong	8.0	7.4	3.86	19.27	Average
13	Tran Quang Khiem	3.8	3.9	4.22	11.88	Weak
14	Tran Nguyen Phuc Hau	5.2	6.2	7.60	19.05	Average
15	Banh Nguyen Minh Tuan	3.7	2.7	3.30	9.75	Weak
16	Pham Nhat Duy	0.5	3.0	5.15	8.69	Poor

\* Note: Test 1: Conveniently hand force (kg); Test 2: Negative hand force (kg); Test 3: Run 1500m (s)

*Table 2.8 Results of personal scores of physical fitness test of male 14-15 year old athlete of Ninh Kieu District - Can Tho City.*

No	Physical fitness test								Rank
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Total	
1	6.9	5.9	9.8	4.4	5.8	7.4	0.3	40.5	Average
2	4.5	7.2	5.6	7.2	5.9	6.0	2.0	38.3	Average
3	2.6	4.7	5.1	3.7	6.7	6.3	6.1	35.2	Average
4	10.3	-0.3	7.0	8.8	5.5	1.6	4.7	37.7	Average
5	4.5	7.2	0.4	4.5	2.2	3.2	5.9	28.1	Weak
6	4.0	4.7	4.2	7.4	9.3	4.6	6.1	40.2	Average
7	6.0	3.4	5.1	2.2	3.8	7.3	6.7	34.5	Weak
8	4.5	4.7	3.7	3.9	7.2	5.7	2.7	32.5	Weak
9	7.4	7.2	3.2	5.8	7.6	4.4	6.3	41.8	Average
10	5.0	5.9	4.2	6.0	3.2	5.1	6.0	35.5	Average
11	3.5	4.7	5.1	0.9	3.7	1.3	3.9	23.1	Weak
12	4.5	2.2	4.2	5.6	5.5	3.1	5.5	30.7	Weak
13	2.1	7.2	6.5	6.0	3.4	7.5	6.2	38.8	Average
14	5.5	5.9	6.5	3.3	4.1	7.5	4.0	36.9	Average
15	5.0	4.7	4.2	5.8	2.8	4.3	8.3	35.1	Average
16	3.5	4.7	5.1	4.5	3.2	4.7	5.4	31.1	Weak

\* Note: Test 1: Foot change in one minute (times); Test 2: Anti-push in a minute (times); Test 3: weight for one minute (times); Test 4: Jump rope in one minute (times); Test 5: Turn on the 30m ruler (second); Test 6: 30m squatting dip (seconds); Test 7: Carry on the shoulder 30m (second)

### 3. Conclusions

From the study results, the following conclusions are drawn:

Determine 10 physical fitness test for male 14-15 year old athlete of Ninh Kieu District - Can Tho City.

+ General physical test: 3 tests

1. Manual hand force (kg) 2. Inverted hand force (kg) 3. Running 1500m (second)

+ Physical fitness test: 7 tests

1. Foot swing with a platform height of 30 - 40 cm duration in one minute (times) 2. Push resistance in a minute (times) 3. weight with weight equal to the weight of the person Stand up for a minute (times)

4. Jump for a minute (times) 5. Turn on the frog for 30m (seconds) 6. Squatting for 30m (seconds)

7. shoulder running 30m (second) Develop criteria for assessing physical fitness of male athletes 14-15 years old Tug of war team in Ninh Kieu District - Can Tho City:

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## **Effect Of Sport Loading Training On Selected Physical Fitness Variables Among The Coastal Area Womens Basketball Players**

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### **Abstract**

The Purpose Of The Study Was To Examine The Effect Of Sport Loading Training On Selected Physical Fitness Variables Among The Coastal Area Women Basketball Players. The Study Was Formulated As A True Random Group Design, Consisting Of A Pre-Test And Post-Test. Thirty (30) Women Coastal Area Basketball Players From Chennai District, Tamilnadu State, India Was Selected As Subjects At Random And Their Ages Ranged From 18 To 25 Years. The Subject (N=30) Were Randomly Assigned To Two Equal Groups Of Fifteen Subjects Each. Pre Test Was Conducted For All The Subjects On Selected Physical Fitness Variables. This Initial Test Scores Formed As Pre Test Scores Of The Subjects. The Groups Were Assigned As Experimental Group I And Control Group In An Equivalent Manner. Experimental Group I Was Exposed To Sport Loading Training And Control Group Was Not Exposed To Any Experimental Training Other Than Their Regular Daily Activities. The Duration Of Experimental Period 6 Weeks. After The Experimental Treatment, All The Thirty Subjects Were Tested On Their Physical Fitness Variables. The Final Test Scores Formed As Post Test Scores Of The Subjects. The Pre Test And Post Test Scores Were Subjected To Statistical Analysis Using ANCOVA To Find Out The Significance Among The Mean Differences At  $P < 0.05$  And It Concluded That Experimental Group Showed Improvement Than Control Group. Keywords: Sport loading, Speed, Strength, Explosive Power, Coastal Area.

### **Introduction:**

Women's sports include amateur and professional competitions in virtually all sports. Female participation in sports rose dramatically in the twentieth century, especially in the last quarter, reflecting changes in modern societies that emphasized gender parity. Although the level of participation and performance still varies greatly by country and by sport, women's sport have broad acceptance throughout the world, and in few instance, such as figure skating, rival or exceed their male counterparts in popularity. Basketball involves approximately 450 million registered participation from over 200 national federations belonging to the Federation International de Basketball (FIBA). The modern game of basketball has evolved to the point where tall, heavy players are preferentially recruited to key positions close to the basket, while faster and more agile players are chosen for decades. When we compare the peoples with coastal area their physical abilities can be more than the normal peoples. Sports loading can be defined as the systematic addition of weight to the others player's body in any form or to the implements used in sports.

Sports loading is a technique designed to improve explosive concentric movements such as sprinting speed. A relatively light resistance that does not drastically alter sprinting form produces the best results. Sport loading along with strength training, speed endurance training, plyometric and over speed training procedure the greatest change in the exercise in the fast twitch muscle fibers.

#### **Hypotheses:**

It was hypothesized that there would be a significant improvement in speed from the base line to post training due to the influence of sports loading training among the coastal area women basketball players.

It was hypothesized that there would be a significant improvement in strength endurance from the base line to post training due to the influence of sports loading training among the coastal area women basketball players. It was hypothesized that there would be a significant improvement in explosive power from the base line to post training due to the influence of sports loading training among the coastal area women basketball players.

#### **Limitations:**

The impact of training schedules, previous experiences, motivational factors and various physical activities on the subjects playing ability were not taken into account. Hereditary, environmental factor and socio-economic status, which contribute to both physical and mental efficiency were not controlled. The quantum of physical exertion, life style and psychological stress and other factor that affects the metabolic functions were also considered as limitations. Variations in performance due to diet, climatic conditions, group conditions and other environmental factors that might affect study, were not considered.

#### **Delimitations:**

The study was delimited to thirty women coastal area basketball players from Chennai district, Tamilnadu, India. The study was confined to coastal area women basketball players between the age group of 18 and 25 years. The study was delimited to only sport loading training. The study was selected physical fitness variables name such as speed, strength endurance and explosive power was measured.

#### **Methodology:**

The purpose of the study was to find out the effect of sport loading training on selected physical fitness variables among the coastal area women basketball players. To achieve the purpose of the study 30 coastal area women basketball players in the age group 18 to 25 years were selected at random from Chennai district, Tamilnadu, India. Selected subjects were divided in to two equal groups of fifteen each. Group I acted as Experimental Group (Sport Loading Training) and Group II acted as Control Group. The Experimental Group I Participated in the Sport Loading Training for three alternate days only morning session for the period of six weeks. The control group training were maintained their daily routine activities and no special training was given.

The data pertaining to the variables in this study were examined by using to find out the significant improvement and analysis of covariance (ANCOVA) for each variables separately in order to determine the difference and tested at 0.05 level of significance and post hoc test also administered whenever 'f' ratio was significant.

**Table I Sport Loading Schedule for 1<sup>st</sup> to 6<sup>th</sup> week**

Weeks	Sport Loading Training	Duration	Intensity	Time	Frequency/Week	Rest
1-2	Stadium stairs	60 Mins	40 to 60%	7.00 to 8.00 am	3	2 Mins
						2 Mins
	Weight Vests (60 M)					2 Mins
						2 Mins
	Weight Body Suit (80 M)					2 Mins
3-4	Weight Sled (60 M)	60 Mins	50 to 70%	7.00 to 8.00 am	3	3 Mins
						3 Mins
	Step Running					3 Mins
						3 Mins
	Sand Running					3 Mins
	Weight Sled (70 M)					4Mins
						4 Mins

5-6	Weight Body Suit (80 M)	60 Mins	60 to 80%	7.00 to 8.00 am	3	4 Mins
	Weight Vests (70 M)					4 Mins
						4 Mins
						4 Mins

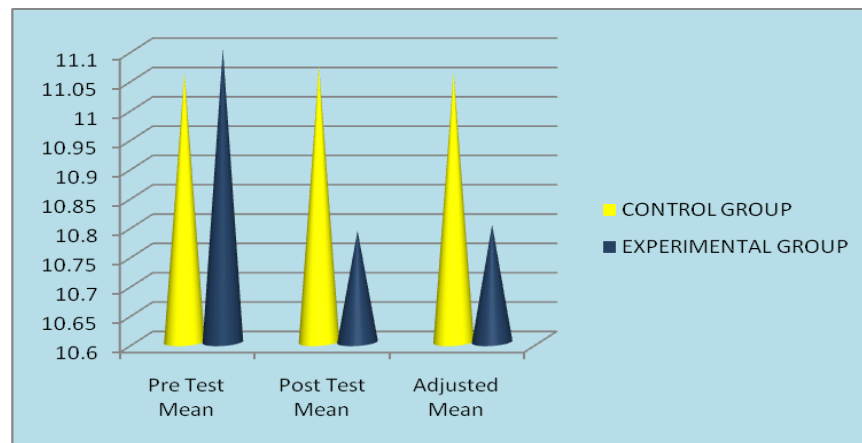
**Table II COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE SPEED OF EXPERIMENTAL AND CONTROL GROUPS**

Speed	Pre, Post, Adjusted Means		Source of variance	Sum of Squares	df	Mean squares	F ratio
	Sport Loading Training	Control Group					
Pre Test Mean	11.10	11.06	Between	0.013	1	0.013	2.65
			Within	0.135	28	0.005	
Post Test Mean	10.79	11.07	Between	0.577	1	0.577	46.42*
			Within	0.348	28	0.012	
Adjusted Post Test Means	10.80	11.06	Between	0.464	1	0.464	38.56*
			Within	0.325	27	0.012	

\*Significant Table F-ratio at 0.05 level of confidence for 1,28 was 4.20, 1,27 (df) = 4.21

The above table indicates the adjusted mean value on speed of experimental and control groups were 10.80 and 11.06 respectively. The obtained F-ratio of 38.56 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on speed. The above table also indicates that both pre and post test means of experimental and control groups differ significantly.

**Figure-1 SHOW THE MEAN VALUES ON SPEED OF SPORT LOADING TRAINING AND CONTROL GROUPS**



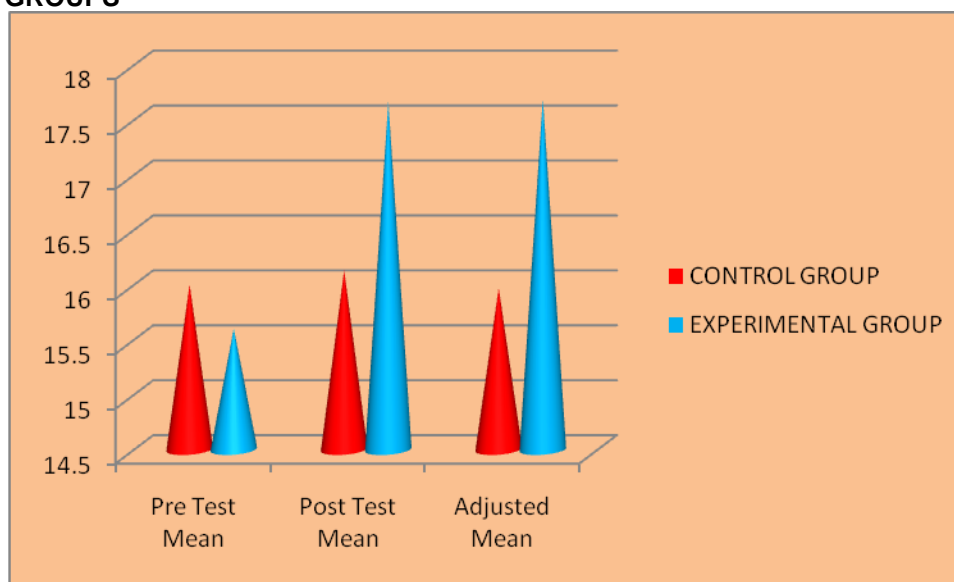
**Table III COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE STRENGTH ENDURANCE OF EXPERIMENTAL AND CONTROL GROUPS**

Strength Endurance	Pre, Post, Adjusted Means		Source of variance	Sum of Squares	df	Mean squares	F ratio
	Sport Loading Training	Control Group					
Pre Test Mean	15.60	16.00	Between	2.133	1	2.133	0.914
			Within	65.333	28	2.333	
Post Test Mean	17.66	16.13	Between	20.833	1	20.833	12.32*
			Within	47.333	28	1.690	
Adjusted Post Test Means	17.69	15.97	Between	21.582	1	21.582	12.50*
			Within	46.583	27	1.725	

\*Significant Table F-ratio at 0.05 level of confidence for 1,28 was 4.20, 1,27 (df) = 4.21

The above table indicates the adjusted mean value on strength endurance of experimental and control groups were 17.69 and 15.97 respectively. The obtained F-ratio of 12.50 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on strength endurance. The above table also indicates that both pre and post test means of experimental and control groups differ significantly.

**Figure-2**  
**SHOW THE MEAN VALUES ON STRENGTH ENDURANCE OF SPORT LOADING TRAINING AND CONTROL GROUPS**



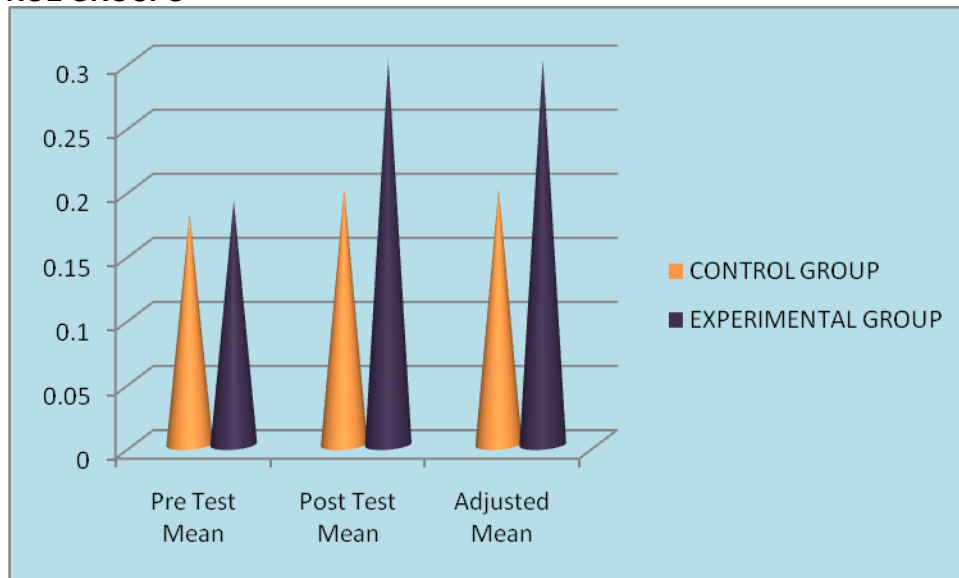
**Table IV COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE EXPLOSIVE POWER OF EXPERIMENTAL AND CONTROL GROUPS**

Explosive Power	Pre, Post, Adjusted Means		Source of variance	Sum of Squares	df	Mean squares	F ratio
	Sport Loading Training	Control Group					
Pre Test Mean	0.19	0.18	Between	0.001	1	0.001	0.37
			Within	0.025	28	0.001	
Post Test Mean	0.30	0.20	Between	0.073	1	0.073	40.04*
			Within	0.051	28	0.002	
Adjusted Post Test Means	0.30	0.20	Between	0.073	1	0.073	38.70*
			Within	0.051	27	0.002	

\*Significant Table F-ratio at 0.05 level of confidence for 1,28 was 4.20, 1,27 (df) = 4.21

The above table indicates the adjusted mean value on explosive power of experimental and control groups were 0.30 and 0.20 respectively. The obtained F-ratio of 38.70 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on explosive power. The above table also indicates that both pre and post test means of experimental and control groups differ significantly. The sport loading training showed the significant difference than control group on speed, strength endurance and explosive power. Since significant differences were obtained. The prime intension of the research was to analyze the effect of sport loading training on selected physical fitness variables among the coastal area women basketball players. While analyzing results it was revealed that there was a significant differences found in the experimental group.

**Figure-3:SHOW THE MEAN VALUES ON EXPLOSIVE POWER OF SPORT LOADING TRAINING AND CONTROL GROUPS**



#### **Discussion on Hypotheses:**

The findings of the study showed that there was significant improvement in speed from the base line to post training due to the influence of sport loading training among the coastal area women basketball players. Hence the first hypothesis was accepted.

The findings of the study showed that there was significant improvement in strength endurance from the base line to post training due to the influence of sport loading training among the coastal area women basketball players. Hence the second hypothesis was accepted.

The findings of the study showed that there was significant improvement in explosive power from the base line to post training due to the influence of sport loading training among the coastal area women basketball players. Hence the third hypothesis was accepted.

#### **Conclusions:**

It was observed that the six weeks of sport loading training have significantly improved the speed of coastal area women basketball players. It was observed that the six weeks of sport loading training have significantly improved the strength endurance of coastal area women basketball players. It was observed that the six weeks of sport loading training have significantly improved the explosive power of coastal area women basketball players. The experimental group had achieved significant improvement due to sport loading training and has significantly improved the selected physical fitness variables of coastal area women basketball players when compared to control group.

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## **Effect of Physical Exercises, Fartlek and Combined Training on Selected Physical Physiological and Psychological Variables among Men Trainee Sub-Inspectors of Andhra Pradesh**

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### **Introduction**

Physical exercise means planned, structured repetitive and purposeful physical activity. Physical exercises are performed quickly and with a lot of heavy breathing, Physical exercise in any organized activity that involves continuous participation and effects on whole body. Exercise occupies a leading role in keeping a person fit. It will be quite difficult to adjunct one's life in terms on stress, diet, and sleep and so on without proper exercise. Regular practices of physical exercise maintain the physical body in an optimum condition and promote health even in an unhealthy body. Physical exercise is a planned and expedient activity whose primary goal is to improve the health and physical shape of the participants and to activate the adaptive process that will produce certain positive changes in the human body.

### **FARTLEK TRAINING**

Aerobic Physical work out are done with oxygen. Use of oxygen in the body metabolic or energy generating process to perform the work by muscles is refereed as aerobics. Many types of exercise performed at moderate levels of intensity for extended periods of time are known as aerobic activity. Fartlek training is said to be the forerunner of the interval training system. It involves alternating fast-and slow running over natural terrain. Interval training is a programme of repeated running with a set of resting full jogging after each repetition. Continuous training is when an athlete's exercise in a steady aerobic way without any pauses or breaks in between.

### **PHYSICAL FITNESS**

"Physical fitness refers to the organic capacity of the individual to perform the normal task of daily living without undue or fatigue having reserves of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him." – Nixon.

### **OBJECTIVE OF THE STUDY:**

The researcher will prove that the physical exercises and fartlek training programme significantly influences selected physical, physiological, psychological variables.

The objective of this study to find out whether the existing training programme for trainee sub-inspectors has significant influence selected physical, physiological, and psychological variables. Whether the specified physical exercise or combination of physical exercise and fartlek training has made any significant influence on selected physical, physiological, psychological variables than the regular training for trainee sub-inspectors.

### **STATEMENT OF THE PROBLEM:**

The purpose of the study was to find out the "Effect of physical exercises, fartlek and combined training on selected Physical, Physiological and psychological variables among men trainee sub inspector of Andhra Pradesh."



### **Significance Of The Study:**

The present study would acquaint the authorities on the effect of physical exercises, fartlek training and combined effect of physical exercises and fartlek training on selected physical variables such as speed, explosive power, muscular endurance among trainee sub-inspectors.

The present study would acquaint the authorities on the effect of physical exercises, fartlek training on selected physiological variables blood pressure, resting pulse rate among trainee sub-inspectors.

The present study would acquaint the authorities on the effect of physical exercises, fartlek training and combined effect of physical exercises and fartlek training on selected psychological variables anxiety, self concept among trainee sub-inspectors.

It would facilitate to find out the differences among the existing physical activities provided to the trainees and the proposed physical exercises, fartlek training and combined physical exercises and fartlek training among trainee sub-inspectors.

### **HYPOTHESES:**

1. It is hypothesized that there would be significant improvement in selected physical variables due to physical exercises, fartlek training and combination of physical exercises and fartlek training to trainee sub-inspectors of Andhra Pradesh.
2. It is hypothesized that there would be significant improvement in selected physiological variables due to physical exercises, fartlek training and combination of physical exercises and fartlek training to trainee sub-inspectors of Andhra Pradesh.
3. It is hypothesized that there would be significant improvement in selected psychological variables due to physical exercises, fartlek training and combination of physical exercises and fartlek training to trainee sub-inspectors of Andhra Pradesh.

### **DELIMITATIONS:**

Physical exercises, Fartlek training

Combined training (physical exercises, Fartlek training)

Sixty four sub- inspectors randomly selected from Andhrapradesh police academy, which have been selected to undergo training during the year 2017-2018.

The age of the subjects ranged between 21 to 27 years.

To achieve the purpose of the study following variables has been selected physical exercises and fartlek training, physical, physiological and psychological variable.

The training schedule should be fixed 12 weeks programme.

The study is delimited with training of six days per week (each day 90 minutes of training).

The study further delimited to four equal groups three experimental and one control group.

### **LIMITATIONS:**

The trainee sub-inspectors would have been under different training methods to get them selected as trainees sub-inspector. The effects of training were not considered in this study.

Heredity and environmental factors which contribute to physical, physiological, psychological factors have not been controlled.

The scholar confined himself only to the men trainee sub-inspectors (direct recruitment) for this study.

### **Methodology**

#### **SELECTION OF SUBJECT**

To achieve the purpose of the study sixty four men trainee sub-inspectors were selected from Beachpally, Andhra Pradesh. Their age ranged from 21 to 25 years. The experimental treatment assigned such as fartlek training, physical exercise programme and fartlek training with physical exercise programme for a twelve weeks.

#### **Selection of variables**

The researcher had gone through various literatures and had discussions with various experts and with his guide before selecting of variables. The availability of techniques for the purpose of analysis, feasibility, reliability of the procedure and outcome were extensively taken care of before finding the variables. The following independent and dependent variables were selected.

Dependent variables:

Physical variables

Speed, Explosive power and Muscular endurance

Physiological variables

Systolic Blood pressure, Diastolic Blood pressure and Resting pulse rate

Psychological variables

Anxiety and Self-concept

Independent variables

Fartlek training and Physical exercise programme.

Fartlek training with physical exercise programme

### **Statistical Analysis Of Data**

The following statistical techniques were adopted to treat the collected data in connection with established hypothesis and objectives of this study.

The data was collected from the four groups before and after the training programme on selected physical, physiological and psychological variables of trainee sub inspector. Analysis of Co Variances (ANCOVA) was applied to find out the significant differences among all the groups in the selected variables. Whenever the adjusted post-test means were found significant, the Scheffe's post hoc test was administered to find out the pairs means difference. All the data were analyzed using computer with SPSS statistical packages. The level of significance was fixed at 0.05 level of confidence.

### **Conclusions**

On the basis of the interpretation of data, the following conclusions were drawn from the study.

Physical variables:

The selected physical variables speed, explosive power and muscular endurance significantly improved by three experimental groups when compared with control group.

The combined training group [fartlek training with physical exercise group] is better than the fartlek training group and physical exercise group on speed and muscular endurance.

Physical exercise group is better than the fartlek training group on explosive power and muscular endurance.

Fartlek training group is better than the physical exercise group on speed.

Further it was concluded that there is no significant differences exist between physical exercise group and combined training group [fartlek training with physical exercise group] on explosive power.

Physiological variables

The selected physiological variables resting pulse rate and cardiovascular endurance significantly improved by three experimental groups when compared with control group.

The combined training group [fartlek training with physical exercise group] is better than the fartlek training group and physical exercise group on cardiovascular endurance.

There is no significant differences exist between fartlek training group, physical exercise group and combined training group [fartlek training with physical exercise group] on resting pulse rate.

Further it was concluded that there is no significant improvement due to the effect of fartlek training group, physical exercise group and combined training group [fartlek training with physical exercise group] on systolic blood pressure and diastolic blood pressure.

Psychological variables

The selected psychological variables anxiety and self concept significantly improved by three experimental groups when compared with control group.

Further it was concluded that there is no significant differences exists between fartlek training group, physical exercise group and combined training group [fartlek training with physical exercise group] on anxiety and self concept.

## **Hawassa City Communities Lifestyle and Challenges to Do Regular Physical Activity and Exercise the Case of Administrative Civil Servants, Ethiopia**

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### **Abstract**

The main purpose of the study is to evaluate Hawassa administrative city community's lifestyle and challenges to do regular physical activities and Exercise. Therefore, an explanatory mixed methods design is employed. The target population was Hawassa city administrative civil servants, 6626 in number in 2017, and study sample were selected by using multistage sampling techniques so that from 35 governmental civil service offices 500 (248 are females and 252 are males) civil servants were recruited and grouped randomly in to Teachers', Office workers', Lawyers, Health workers', Engineers', and Runners (Guards, messengers and janitor) based on the nature of work they have. Data was collected through questionnaire, focus group discussion (FGD) and field observation supported with secondary data from previous study, journals, articles, and books. Then both descriptive statistics and inferential tools in which logistic regression were employed to analyses the collected data. From the first 500 distributed questionnaire, 466 samples were returned the questionnaire properly. As a result, predominant Civil Servant Communities daily routine seem to accommodate health lifestyle in terms of smoking, alcohol usage and balanced diet. But most of them are physically inactive due to using technological outlets, work position, lack of equipment, negative perception, negative background on physical activity, personal behaviour, lack of parental and peer support, and environment or inconvenient residence area. Therefore, gender, regular physical exercise program participation, and the daily routines are directly associated with lifestyle of respondents at 0.05 level of significance. Whereas, age, work experience, exercise background, usage of balanced diet, and hypokinetic problem does not associate with lifestyle of respondents.

**Key terms:** Lifestyle, Regular physical activity, Exercise, Balanced diet, Smoking etc

### **Introduction**

Healthy lifestyle approach is crucial for lifelong healthy living that can extend life expectancy. Being physically active is essential for physical, mental, economic and social wellness; and helps for demands of better quality of life. As indicated in (Anand et al., 2007) healthy lifestyle practices are including physical activity, healthy dietary behaviours, refrain from alcohols, and soon. Through regular physical activities it is possible to tackle obesity or related non-communicable disease and ensuring physically fit population that make a productive workforce in the daily duty of economy.

(Penedo & Dahn, 2005) indicates that exercise and physical activity are associated with better quality of life and health outcome. Advances in modern technology, however, have all but eliminated the need for physical activity in daily life. According to (Nambaka, Kamau, Andanje, Amusa, & Goon, 2011), the main challenges to participation in daily exercises program are negative attitudes, low awareness level, advancements of technologies, and lack of facilities.

Physical inactivity, along with other lifestyle-related health risk factors (e.g. unhealthy diet, tobacco use, alcohol consumption) is becoming increasingly prevalent in developing countries which face rapid economic and social development, urbanization and industrialization (Organization, 2005). By having this, the study tried to evaluate the current lifestyle of civil servants in relation with culture of doing daily physical activity.

#### **Objectives of the Study**

The main objective of the study is to evaluate Hawassa administrative city community's lifestyle and challenges to do regular physical activities and Exercise.

#### **Material and Methods**

##### **Description of the Study Area**

The study area is Hawassa city administration. Hawassa city, the capital of the Southern Nation Nationality of people region state (SNNPR) is located relatively 275km south of Addis Ababa, the capital city of Ethiopia. The city is one of the fastest growing cities of the country and booming infrastructural, rapid increase in the population, and the community living style inclines luxurious. It lies on the shore of Lake located in the Great Rift Valley. From this fact the city is flourishing resort city bounded by Lake Hawassa in the west.

##### **Research Design**

A clear design can lead to at least minimize error. Therefore, in this study an explanatory mixed methods design (Creswell, 2012) is being employed, because the study could comprise a quantitative investigation of study sample surveys followed by a multiple case qualitative studies based on the collected data from different stake holders through different instruments.

##### **Population of the Study**

The target population of this study is particularly Hawassa city administrative civil servants, 6626 in number in 2017 calendar, out of this 3631 are males and the remaining 2995 are females.

##### **Sample Size and Sampling Techniques**

Samples were selected by using multistage sampling techniques. First, purposive sampling technique were employed to select the only governmental civil servants live in Hawassa city. Second, comprehensive sampling techniques were used in order to get the whole target population in available civil service offices therefor, 35 governmental civil service offices are recruited. To use equal chances for both female and male participants, stratified sampling techniques were employed at the third stage based on sex. Fourthly, cluster sampling techniques were used that study sample were grouped randomly in to Teachers', Office workers', Lawyers, Health workers', Engineers', and Runners (Guards, messengers and janitor) based on the nature of work they have and amount of physical activities required. Finally, the total sample sizes of the study were 500 civil servants in which 248 were females and 252 were males.

##### **Sources of Data**

The study was used both primary and secondary sources of data. Primary data was collected through questionnaire, focus group discussion (FGD) and field observation. Secondary data were also collected from previous study, journals, articles, and books.

##### **Method of Data Analysis**

Both qualitative and quantitative data were analysed by descriptive statistics and inferential tools. Descriptive method of analyses was applied through percentage, Count and Chi-Square Test of Independence. Whereas, Advanced Statistical Modeling in which logistic regression was employed too for analyzing data set in categorical and explanatory form. Detailed discussion on logistic regression model can be found on (Hosmer, Lemeshow, & Sturdivant, 2000).

##### **Result**

##### **General Characteristics of Population**

From the first 500 distributed questionnaire, 466 samples are returned the questionnaire properly. Based on the nature of work and amount of physical activities required, data had been organized and analyzed through clustered form of Civil Workers as: Teachers', Office workers', Lawyers, Health workers', Engineers', and Runner (Guards, messengers and janitor).

## Descriptive Statistical Analyses Result

Table 1: General Characteristics of Civil Servants

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Height by meter	468	1.30	1.95	1.6821	.09775
Age	468	20	66	33.83	9.297
Weight by kilo gram	468	45	100	66.98	10.160
BMI	468	16.65	37.00	23.76	3.68708
Work Experience	466	1	35	9.17	6.923
Valid N (list wise)	466				

As illustrated in table 1, the minimum height of civil servant was 1.30m, and 1.95m maximum. The mean score of height is 1.68m with a standard deviation of 0.09775m. In terms of participant's age, the minimum one is 20years old whereas maximum age of the responds' is 60years old. The mean score of respondent's ages is 33years old with 9.297m standard deviation. The minimum weight of civil servant is 45kg, and 100kg maximum weigh. The mean score of their weigh show 66.98k.g with 10.160k.g standard deviation.

In terms of body mass index (BMI), the minimum one is 16.67k.g/m<sup>2</sup> that means underweight; on contrast maximum BMI is 37.00k.g/m<sup>2</sup> categorized as obesity; and yet the mean score 23.76k.g/m<sup>2</sup> which is acceptable BMI. In manner of working experience, minimum is 1 year and 35 years maximum; mean of working experiences is 23 years.

Hawassa Administrative city Communities Lifestyle

Table 2: Lifestyle in relation with Variables

Variables	Categories	Count	Column N%
Mostly spends personal leisure time	Just Watching TV	141	30.1
	Walking, playing football, or performing physical fitness exercise	67	14.3
	Just go to church or mosque/Attending religious program	130	27.8
	Go to recreation area	87	18.6
	Other	43	9.2
	Total	468	100.0
Describe personal daily routine	Use a balanced diet	261	55.8
	Usually drink alcohol	24	5.1
	Smoking cigarette	2	.4
	Doing a regular physical exercise	92	19.7
	Other	89	19.0
	Total	468	100.0
Using a balanced diet on regular bases (Balanced diet means eat carbohydrates, fat, proteins, vitamins, minerals, and enough water which the body requires in a day)	No	187	40.0
	Yes	281	60.0
	Total	468	100.0

Trends of spending personal leisure time.

Table 2 item 1 describes how far Civil Servant communities spend their leisure time. At this junction interestingly (30.1%) of participants spent by watching television during their leisure time; (14.3%) of respondents spending their leisure time actively in the manner of walking, playing football and/or do physical fitness exercise. However, nearly a third (27.8%) of participant replied that attending religious program. By the same token about (18.6%) replied that go to recreation area. Only limited proportion (9.2%) of respondents spending their time in a way of either reading book or engage at their home by doing some house hold routines.

Describe the daily routines of the community

Table 2 item 2 pinpointed that the daily routine of participants. Few numbers (0.4%) of participants replied that have a habit of smoking cigarette. On the other hand (5.1%) respondents reported that drinking alcohol is part of their daily routine. Nearly quarterly (19%) of subject do some other activities like playing pool and doing regular physical exercise. However, over half (55.8%) of them replied that strived all best to get balanced diet as per their economic status.

Trends of Using Balanced Diet at regular basis

As table 2 item3 discuss the response of respondents in relation with balanced diet. Below half (40%) respondents replied that their daily food schedule not included balanced diet; on the other hand, majority (60%) of respondent said that recipe included healthy foods in correct proportions of carbohydrates, proteins vitamins and mineral to maintain the healthy life.

Logistic Regression Result

Table 3:Results of Association between life style and Related factors

Characteristics	Cramer's V		Contingency Coefficient		Pearson Chi-Square		
	Value	Sig.	Value	Sig.	Value	Df	Sig.
Sex	0.137	0.003	0.136	0.003	8.767 <sup>a</sup>	1	0.003
Age	0.321	0.176	0.305	0.176	48.154 <sup>a</sup>	40	0.176
Work Experience	0.273	0.343	0.263	0.343	34.637 <sup>a</sup>	32	0.343
Participate in regular physical exercise program as a lifestyle	0.164	0	0.162	0	12.636 <sup>a</sup>	1	.000
Habits of doing exercise before joining the work	0.013	0.785	0.013	0.785	.075 <sup>a</sup>	1	0.785
Personal daily routine	0.224	0	0.219	0	23.554 <sup>a</sup>	4	.000
Balanced diet usage (carbohydrates, fat, proteins, vitamins, minerals, and enough water)	0.083	0.071	0.083	0.071	3.260 <sup>a</sup>	1	0.071
Health problem having related to physical inactivity and poor life style	0.054	0.73	0.054	0.73	1.294 <sup>a</sup>	3	0.73

Table 3 indicates that gender, regular physical exercise program participation, and the daily routines are directly associated with life style of respondents at 0.05 level of significance. Whereas, age, work experience, exercise background, usage of balanced diet, and hypokinetic problem does not associate with life style of respondents.

## Discussion

In the present study most of subjects are adults, and averagely normal body mass index (BMI) with reached working experience. The findings of the study indicate that the greater majority of civil servants spending their leisure time in passive manner in terms of physical exercise. This study also supported by (P Inyang & Okey-Orji, 2015). Based on the study results, adults spend daily time on TV watching, driving and other sedentary behaviours like computer operation, video games, reading of books or sleeping are favour for cardiovascular disease. As a result of (Dunstan et al., 2010), television viewing time was associated with increased risk of all-cause and cardiovascular disease mortality. Therefore, chronic disease prevention strategies could focus on reducing sitting time, particularly prolonged television viewing.

There are also indications that predominant Civil Servant Communities daily routine seem to accommodate health lifestyle in terms of smoking, alcohol usage and balanced diet. Therefore, this result contrast to the study of (Park & Kim, 2008) that alcohol consumption and smoking is inversely associated with physical activities. (Higgins, Gaul, Gibbons, & Van Gyn, 2003) and (Park & Kim, 2008) found that adolescents who smoke and consume alcohol tend to be less physically active. Then, greater majority civil servant communities intend to have good practice of eating balanced diet. According to (Hoeger & Hoeger, 2013), well-balanced diet is one of the fundamental ways to enjoy good health and live life to its fullest. The (Trumbo, Schlicker, Yates, & Poos, 2002), state on it that daily caloric intake should be distributed so that 45 to 65% of the total calories come from carbohydrates (mostly complex carbohydrates and less than 25 percent from sugars), 20 to 35 percent from fat, and 10 to 35 percent from protein.

Therefore, gender, regular physical exercise program participation, and the daily routines are directly associated with life style of respondents at 0.05 level of significance. Whereas, age, work experience, exercise background, usage of balanced diet, and hypo kinetic problem does not associate with lifestyle of respondents. In line with the this, (Trost, Owen, Bauman, Sallis, & Brown, 2002); (Muntner et al., 2005); and (Santos, Silva, Santos, Ribeiro, & Mota, 2008) found that physical activity is more frequent among males, probably due to higher activity at work outside the household and participation in competitive sports. According to (Vries, Kremers, Smeets, & Reubsat, 2008) behaviors as non-smoking and physical activity are associated with each other and being a smoker was inversely related to physical activity.

From the data, most of them are physically inactive due to using technological outlets, work position, lack of equipment, negative perception, negative background on physical activity, lack of knowledge, perceived behavior control, lack of parental and peer support, and environment or inconvenient residence area. In this view (Park & Kim, 2008) there is evidence of associations between physical activity and age, sex, parental education level, socioeconomic status, self-efficacy, perceived benefits, perceived barriers, perceived behavior control, parental support, peer support, past physical activity, depressive symptoms, smoking, alcohol consumption, and environmental determinants. According to (Pucci, Reis, Rech, & Hallal, 2012), Walking and moderate up to vigorous physical activities during leisure are a part of good lifestyle to contribute several aspects of quality of life like better levels of physical fitness, body weight control and health. Physical activity during transport is associated with reduction in the risk of stroke and non-communicable disease mortality.

### **Conclusion**

In the present study most of subjects are adults, and averagely normal body mass index (BMI) with reached working experience. The findings of the study indicate that the greater majority of civil servants spending their leisure time in passive manner in terms of physical exercise. The communities spent their daily routine including leisure time by watching TV, religious activities, reading book, and using computer, thus such activities may lead to sedentary lifestyle. There are also indications that predominant Civil Servant Communities daily routine seem to accommodate health lifestyle in terms of smoking, alcohol usage and balanced diet.

Therefore, gender, regular physical exercise program participation, and the daily routines are directly associated with life style of respondents at 0.05 level of significance. Whereas, age, work experience, exercise background, usage of balanced diet, and hypo kinetic problem does not associate with lifestyle of respondents.

### **Recommendation**

It is clear that being active people in their daily routine can help to be healthy. However, modern lifestyle forced us to be sedentary and that is dangerous for health. All peoples spent their office work in passive way may needs to cut long time sitting in front of television or the computer, riding in the car for even a short trip, use stair walk.

### **Acknowledgment**

We researchers acknowledge Hawassa University research and dissemination office for covering the fund, and we also thank all the staff members Hawassa University and Hawassa Administrative city civil service office for providing data.

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## **Effects Of Medicine-Ball Practice On 7-Meter Shooting Accuracy In Handball Players**

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### **Abstract**

Handball is most popular Olympic sport which requires dynamic movement like running, jumping and throwing; shooting on goal is one of the determinant factors for the team success. The purpose of this study was to investigate the effect of medicine ball training on the shooting precision especially on 7-meter shot accuracy among 28 Bahir Dar University sport science students ( $83.5 \pm 9.8$  kg body mass,  $1.82 \pm 0.09$  m body height and  $22.4 \pm 1.8$  years of age). The participant randomly categorized into experimental (14) and controlled group (16). Pre-test was taken at the base line and post test at the end of the training protocols (eight week Med ball throwing training). The four equal sized targets (50cmx50cm) hollow and made of metal was mounted at each corner of the goal each were labelled: top right (TR), bottom right (BR), top left (TL), and bottom left (BL) player performed 12 valid 7-meter shooting at random into four zones of the goal after Visual stimulus was given accurate and inaccurate shoot was recorded. the experimental group performed eight week two times per week Med ball training as additional to the normal training however the controlled group did not receive any additional training. Analyses were computed using SPSS. The result obtained showed that there was no significant difference between pre and post-test in terms of accurate and inaccurate shot ( $P > 0.05$ ). therefore coach's, how is giving training should give due attention in choosing a weight of medicine ball, pick a ball that did not to slow the motion, or range of motion that can be performed for 10 to 15 reps—or as many as you can do with good form. Key words; Medicine ball, 7-meter shoot, accurate shoot

### **Introduction**

Throwing is a basic ability of humans which is expressed from the early stages of development (Schmitt and Churchill 2003). Nowadays, the improvement of throwing skill is one of the main objectives in many sports, such as baseball, javelin, handball and others. During the last century several training methods have been established in order to achieve higher ball speed and accuracy. Handball is a dynamic group game consists of strong intermittent activities such as sprinting, jumping, throwing, hitting, blocking, and pushing between two teams of seven players (6 outfield players and a goalie on each s (Stark, 2011). In addition to technical and tactical skills, shooting on goal is a very important skill in team handball and it determines the success of every attacking. In team handball competition, the throwing movement finalizes the offensive action. To succeed in an attempt to score a goal, a team handball player must maximize the precision of the throw as well as ball velocity Shooting on goal is one of the most important aspects of the game. For a shot to be successful, it requires maximum ball velocity and precision. (Clanton & Dwight (1997), Wagner & Müller, (2008) Hermassi Et al(2010) and Marques et al (2007))According to them accuracy is as important as velocity, Player can shoot powerfully but goalie will save the ball if he/she did not consider the position of the goalie and shoot on the target. Related to handball, the efficacy of the throw depends on a high percentage of the speed of the ball being thrown, as well as the accuracy of the ball being launched at the goal in relation to the goalkeeper's position (Van den Tillaar and Ettema, 2004a; Van den Tillaar and Ettema, 2007).

In handball the referee awards a 7-meter throw when a fault obstructs a clear scoring opportunity. Generally, the set shot and the fall shot are used for 7-meter shot. (IHF, 2010). 2002-2010 teams on average earned a 7 m penalty 4.3-4.8 times per match and its efficacy for winner is 66.9% in 2002 and 69.7% in 2010. Czerwinski (1998) assessed shot efficiency from the statistical records of the 1998 Men's European Championship held in Italy. Average total shot efficiency was 53.7%, of the seven-meter throws 71%. Few studies demonstrate medicine ball throwing practice will improve the shooting power but not shooting accuracy. The effect of Handball specific medicine-ball training in 7-meter shoot in handball players is still not well understood and studied as compared to others skill of handball. Therefore the current study tried to investigate the efficiency of Handball specific medicine-ball throwing practice on 7-meter shooting accuracy in handball players.

### **Materials and Methods**

Twenty-eight Bahir Dar University sport science student (14 experimental and 14 control groups) took part in the experiment. All participants filled health history questioners and none of them had health problems especially injury on the upper extremity. The two groups were tested their shooting accuracy at the beginning and end of training protocol (8-week Med ball training). Players were grouped in to two (Med ball group (Med G) and controlled group (CG) randomly. The experimental groups execute medicine ball (0.8kg weight & 58 cm width) throwing practice at 7- meter twice per week for eight week besides the normal handball training schedule given by their coach.

### **Measurement Procedure**

The tests took place during in-season training week. In order to measure 7- meter Shooting to the Target, Players thrower to the target from 7m line. A standard handball and goal specified by the International Handball Federation (IHF) guidelines were used (ball: diameter=58-60cm, weight=425-475gr, goal: width=3 m, height=2 m).

The four equal sized targets (50cmx50cm) hollow and made of metal was mounted at each corner of the goal each target is dressed by net like a cone in order to hold balls thrower to the target. Targets were labeled: top right (TR), bottom right (BR), top left (TL), and bottom left (BL) relative to the subject viewing perspective the targets were chosen as the extreme points in the goal area and hence the targets most likely to give rise to differences in movement form (Bourne et al, 2011). In this test, the player had to perform 12 valid throws at random into four zones of the goal. Visual stimulus was given manually, control unit by pressing the designated button in order to turn on desired light according to the randomized order determined before the trials. The accurate and in accurate shot were registered before the trial in pre-test, subjects were instructed to warm up as they would for a training session. After following 5 min resting period, subjects were asked to shoot the ball following the visual stimulus.

### **Statistical Analysis**

Test results were completed using SPSS (version 20) and the results of the pre and post-test between accurate and in accurate shots were compared using Paired sample t-test within the group and the difference between pre- and post-test of the group analysed with independent t-test. Statistical significance was set at  $p \leq 0.05$ .

### **Results**

The average values of the basic parameters of physical characteristics of the subjects were:  $83.5 \pm 9.8$  kg body mass,  $1.82 \pm 0.09$  m body height and  $22.4 \pm 1.8$  years of age.

A paired-samples t-test was conducted to compare the effect of medicine ball shooting training and regular training on 7-meter shooting accuracy, result for different between accurate and inaccurate shot total point of handball shot (14) during pre-test and post- test protocol.

Table1. Effects of Medicine-Ball Practice on 7-Meter Shooting Accuracy

Measurement	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Sd	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Accurate pre-test – Accurate post-test	.286	2.400	.641	-1.100	1.671	.446	13	.663
Inaccurate pre-test – Inaccurate post-test	-.286	2.585	.691	-1.778	1.207	-.414	13	.686

The result showed that there was no significant difference in the score of between accurate 7-meter shot in pre-test (M=5.57, SD=1.7) and post- test (M=5.29, SD=2.4) performance,  $t(13) = 0.45$ ,  $P=0.66$  and score for inaccurate 7-meter shot in pre-test (M=6.43, SD=1.7) and post-test (M=6.71, SD=2.4) performance,  $t(13) = -0.41$ ,  $P=0.67$ . At the end of the study, as a main result, no significant differences were found on the performance (shooting accuracy) which is the output of training protocols in terms of accurate and inaccurate shots.

### Discussion

Medicine balls are mainly used for throwing and catching drills, the simplest and most effective tool for provide greater sport-specific training improvements in the upper body and Shooting ability in handball is a decisive factor in computation that needs greater upper body involvement. Rivilla. Et al (2011) Studied the effect of medicine ball(light and heavy) on shooting velocity in semi professional and non-professional group and found that light medicine ball has significant effect on shooting velocity on semi professional handball players. The study Gorostiaga.et al (2006) Heavy ball training can only enhance power and strength but can also enhance handball throwing velocity. An increase of external stimuli probably influences throwing kinematics and determinant of maximum force and movement velocity (mechanical power that can be achieved during fast movements) (Michael et al (2011))As van den Tillaar and Ettema G.( 2003.) accuracy did not improve when subjects were instructed to focus on it and when instructions increasingly emphasized accuracy, velocity decreased there for the Visual stimulus given by the tester may have an effect on the shooting performance especially on accuracy. since the final aim of the game is to score more times than the opponent, handball players has to shoot with good power and precision, Bayios I, and Boudoulos K. (1998) recommend explosive exercise for shooting power development and this exercise has to be done with light weight and Marques (2007) shooting accuracy is determinant factor for success of handball team the training protocols ha to consider movement specificity Michalsic et al. (2011) studied on throwing capacities on the base of functional age with exercise protocols (heavy medicine ball and light medicine ball) on throwing velocity with no goalkeeper at the goal. Conclude that heavy medicine ball improves shooting power but with different reason hamper shooting accuracy and recommended to use light one.

Several training methods have been suggested in order to improve this ability no significant differences were found between pre- and post protocols in terms of accurate and inaccurate shots especially in experimental group, throwing precision remained unaffected therefore Medicine ball training exercises seem inexpensive training strategy mimicking sport-specific movement activities but in relation to shooting accuracy especially in 7-meter shoot there is no significant improvement. There for this study confirmed that medicine ball training did not significantly affect the shooting accuracy especially on standing shoot (7-meter shot). Thus coach, how is giving training should give due attention in choosing a weight of medicine ball, pick a ball that's did not to slow the motion, or range of motion that can be performed for 10 to 15 reps—or as many as you can do with good form.

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## **Meditation For Pregnancy**

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### **Introduction:**

Pregnancy is an exciting time in every woman's life. A time of intense expectation. A time to rejoice, to welcome a new life into the world. It is also a time of overwhelming change which is happening at tremendous speed - physically, mentally and emotionally. The baby transforms from a tiny cell into a fully developed little person. While the mother experiences drastic developments. Some interesting, some difficult to handle. Yoga has 5 vital tools for pregnancy. When followed together, they work wonders on your health and your capability to have a smooth pregnancy. Smooth pregnancy and a natural childbirth are just some of the benefits of yoga. But more importantly, yoga does wonders on the physical and mental development of the foetus. Ensuring a healthy baby is every woman's dream and yoga helps you do just that.

Yoga and Pregnancy So what are these 5 tools:

**Yoga Exercises:** These gently work on the reproductive organs and pelvis to ensure a smooth pregnancy and a relatively easy childbirth. At the subtle level, these ensure optimum supply of blood and nutrients to the developing foetus.

**Breathing or Pranayama:** These powerful techniques ensure the abundant supply of oxygen and a better life force for you and your child. These methods work on your fitness during pregnancy.

**Mudras :** The psycho-physical stimulation of these gestures and locks have powerful effects on a woman's reproductive organs.

**Meditation :** As a therapeutic tool, meditation will help you resolve the deepest of neuroses, fears and conflicts, which are so common during pregnancy. Meditation brings with it an incredible awareness which helps you connect with your child in a way that is impossible to explain.

**Deep Relaxation :** Yoga Nidra (Yogic sleep) is particularly effective during pregnancy for physical and mental relaxation as well as for childbirth preparation. In this meditation will help you explore your inner self; establish that connection with your child that is impossible to explain. It creates a phenomenal understanding of you and you alone. It puts you in tune with your baby.

### **Meditation**

An ordinary person may consider meditation as a worship or prayer. But it is not so. Meditation means awareness. Whatever you do with awareness is meditation. "Watching your breath" is meditation; listening to the birds is meditation. As long as these activities are free from any other distraction to the mind, it is effective meditation.

Meditation involves concentration and relaxation – both of which are enhanced by yoga. Just as there are many styles of yoga, so too are there a variety of ways to meditate. The first stage of meditation is to find a focal point or method of focusing in order to free oneself from distractions. Some methods of focusing include:

**Sound:** Repeating a mantra, phrase or other sound.

**Visualizing:** Picturing an object with eyes closed, such as a lotus flower or the energy points in the body (chakras).

**Gazing:** Looking at an actual object with eyes open. Candles, flowers or pictures are common objects used in gazing.

**Breathing:** Observing the breath and what it feels like the sensations as it travels in and out of the body.

Research has confirmed that physiological and psychological changes take place in the body during meditation. For example, studies show that people who are meditating perspire less, have a slower rate of respiration and demonstrate lower blood pressure than normal. you can meditate during pregnancy as it not only reduces your stress but can also give your baby a better start in life. Meditation techniques can keep you healthy, relaxed and energized, thereby providing the focus you need for easy labor. It plays a vital role in tackling difficulties that arise in various stages of pregnancy. It is safe to meditate throughout your pregnancy and also during childbirth. Practicing meditation during early pregnancy can reduce anxiety and stress at the time of labor, and meditation during the second trimester can significantly reduce pains you experience in the third trimester. But in the third trimester, try not to stress yourself trying to meditate in a specific posture or for a specific duration.

Yoga experts believe that meditation helps you to:

- connect with your inner-most feelings, focus and concentrate, deal with mood swings, increase self-awareness, bond with your baby, feel better about your changing body, become calm and relaxed
- prepare yourself mentally for birth and beyond

Focusing on your body can help you to heighten awareness of the many changes that are happening inside you. Meditation can also help you to improve your mental focus. Both of these skills will prove invaluable when you go into labour. Doctors and scientists have studied the benefits of meditation on pregnant women and they have shown that it can help moms-to-be throughout pregnancy and especially at birth. Meditation during childbirth helps in enrichment of health during the prenatal period, to calm the pain during birth and even is beneficial in healing method during postnatal period. The regular practice of meditation and yoga during pregnancy reduce premature birth, lessens complications in the new-born baby and improve the weight of the baby. It is like that a woman can pass the benefits of meditation to the baby through the pregnant woman's bloodstream.

**Follow these measures while meditating during pregnancy:**

- Learn the meditation techniques from an experienced practitioner.

- Practice meditation every day, preferably at the same time. Early morning is the best time for it.

- Choose a quiet place where you won't be disturbed. If it is indoors, use a room with proper ventilation. You can also select an area in your garden or balcony.

- Sit with your spine straight and erect.

- Start with eight to ten minutes, and then extend your meditation time as needed.

- Do not meditate when you are tired or after you've had a heavy meal.

- Always follow the meditation with a stretch of deep relaxation (also called yoga nidra).

We also heard about Abimanyu from Mahabharatham and Bhaktha Pragalathan from Bhagavatham. They are the best examples that the baby will hear the good things and learn the good things from the mother's womb onwards. Most women who are pregnant are eager to do whatever they can to make sure their child gets the best possible start at life. So, Meditation is one of the important way to optimize both the mother and baby health and strengthen the bond between mother and child. It helps the mother to mold her baby as she like. The effects of meditation on pregnancy can have long lasting effects, not only on mother and child, but also on everyone in the family. Try to read good books and listen moral speech and also try to talk with your baby. So Keep practicing Meditation, it is good for those who are going to become mummies and also those who have become mummies.

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## Reproductive Health Needs And Service Utilization Among Youths In Bule Hora Town, Southeast Ethiopia

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### Abstract

**Background:** Youths are disproportionally affected by sexual and reproductive health problems compared with other segment of the population. But there is limited literature on utilization of reproductive health and its associated factors among youths in developing countries like Ethiopia. This study was conducted to assess RH needs and utilization of youths in Bule Hora town, South Eastern Ethiopia. **Methods:** Community based quantitative cross sectional study was conducted on 422 youths in Bule Hora town, Southern Ethiopia. Data was collected using self administered questionnaire under the supervision of principal investigators. Data entry was made using EPI INFO 6.0 version and then transported and analyzed by using SPSS 21.0 version statistical packages. **Results:** A total of 422 households were visited in three kebeles of which only about 394(93.4%) respondents agreed to be interviewed. As it was revealed by logistic regression age, and marital status were found to be the main predictors, independently and negatively associated with sexual activities. But sex (being a female) was independently and positively associated with sexual activities. According to this study females have more risk of sexual engagement compared to males. Also after controlling for confounding variables logistic regression show that living patterns (living with both family) was found to be the main predictors, independently and negatively associated with use of modern contraceptive. Despite having all these health problems only, 47.6% of them had visited public health institutions. **Conclusion and recommendation:** Generally there were RH problems like lack of adequate information, and the existence of risk sexual and RH behaviours, inappropriate health service utilization and socio cultural factors affecting youth reproductive health. Finally, programs that comprise both promotional activities and reproductive health services that could serve the hard to reach youth should be designed and implemented as a matter of priority. **Key words:** Reproductive health needs, service utilization, RH problems, youths

### 1. Introduction

Recent estimates indicate that 17.0% of the global population, 20.0% of Sub-Saharan Africa and 17.9% of Ethiopian population is composed of youths. Globally youths are facing different sexual and reproductive health (SRH) problems like unwanted pregnancy, unsafe abortion, STI/HV/AIDS. But people who are young are usually mistakenly perceived as healthy and as if they were not in need of special health services (1). Youths in Ethiopia also disproportionately suffer from RH problems like gender inequality, sexual coercion, early marriage, polygamy, female genital cutting, unplanned pregnancies, closely spaced pregnancies, abortion, STI/AIDS. The youths' lack of education, unemployment, and extreme poverty exacerbates these problems (2). In general the study is expected to generate relevant information that could help to design appropriate RH programs for this segment of population.

## **2. Methods and Materials**

### **2.1. Study Area and Period**

The study was conducted in Bule Hora town located Southern Oromia Region, Borena Administrative Zone. It is one of the 7 woredas in the administrative zone. The town is located 467 kilometers southeast of Addis Ababa along the high way that extends from Addis Ababa to Moyale. As projected by the National population and housing census of Ethiopia, the population of the woreda during the study period were approximately 308,138 and contain 36980 households of which greater than half percents are adolescent and youth group. The study was conducted from September 2015 to May 2016.

### **2.2. Study Design and Population**

A community based cross sectional quantitative study was used. All youths who were residents of Bule Hora town were the source population while youths residing for at least 6 months in the randomly selected kebeles during the study period were the study population.

### **2.3. Sampling**

Sample was calculated using 50% utilization of RH services among youths, margin of error of 5% and 95% confidence interval with 10% non-response rate. The sample for each of the three kebeles was proportionally allocated based on their number of household. Then by using the household identification number obtained from the kebele administrative as a sampling frame, households were selected using the lottery method. In each household, eligible youth 15-24yrs was selected and interviewed. When more than one eligible were found in the household, one was selected using lottery method. When households with no eligible youths were identified, next household with eligible respondent was selected. Youths who were eligible but were not at home during the visit were revisited and interviewed. Exclusion was made after three continuous absenteeism at home.

### **2.4. Data collection Instrument and process**

An anonymous structured questionnaire was prepared based on literature review and adopted from the other researches which have been done before on this area and necessary modification was made. The questionnaires consisting of socio-demographic characteristics of youths, their parents, their level awareness, knowledge, attitude and practice on SRH issues; youth' sexual practice and their risk perception; types of services provided to them, their RH needs, service preference and service utilization. Data collection method was the interview administered only for illegible participant. The collected data checked for completeness and consistency by the principal investigator throughout data collection period for data quality and completeness.

### **2.5. Measurement**

RH needs and health service utilization were dependent variables while socio demographic variables, knowledge about RH, parent related variables (presence of parents, the house head, ..) were the independent variables.

### **2.6. Data Processing and Analysis**

Data was entered in to computer using EpiInfo and SPSS 16.0 was used for analysis. Summary statistics was used to describe the study population in relation to socio-demographic and other relevant variables. Multiple logistic regressions was fitted to identify factors that independently associated with RH needs and utilization of youths. RH need was developed as a composite indicator from a set RH questions. Service utilization was considered when youths have obtained RH services from health institutions for any of the RH services.

### **2.7. Ethical Consideration**

Ethical clearance was obtained from Institutional Review Board and Bule Hora University College of Health and Medical Sciences prior to implementation of data collection. Bule Hora Administration was communicated and informed about the objective of the study and official permission was obtained. Finally the study participants were informed about the purpose of the study and confidentiality was maintained throughout the study. Verbal consent was obtained from the respondents.



### 3. Results

#### 3.1. Socio-demographic Variables of Youth in Bule Hora town May, 2016

A total of 422 households were visited in three kebeles (youth aged 15-24 years) of which only 394 (93.4%) agreed to be interviewed. Out of the study subjects, more than half, 270(68.5%) of the respondents were male with female to male ratio of 0.46: 1. The mean ( $\pm$ SD) age of the study subjects was 20.2( $\pm$  2.63) years. Out of the total respondents 155(39.3%) of them live with both family members, 37(9.4) live with a single family member while the majority 202(51.3%) of them live with other family members.

#### 3.2. Reproductive and Sexual Health Behaviours

Out of 394 participants, 187(47.5%) have reported to be sexually active at least once before the time of the study, out of which 147 (78.6%) were males while 40 (21.4%) were females. Only 15 of 99(15.2%) never married female youth were sexually active compared to 88 of 211 (40.7%) never married male. The mean ( $\pm$ SD) age of sexually active participants at sexual onset was 18.3 ( $\pm$  2.02) years. Out of 187 sexually active youth 92 (49.2%) had more than one lifetime sexual partner. The mean ( $\pm$ SD) lifetime number of sexual partner per sexually active participants was 2.1 ( $\pm$ 1.56). During the bivariate analysis sexual activity was found to be significantly associated with many independent variables but after controlling for confounding variables age, and marital status were found to be the main predictors, independently and negatively associated with sexual activities with (OR=0.261,95%CI(0.147,0.462), and (OR=0.026,95%CI(0.007,0.092) respectively. But sex was found to be independently and positively associated with sexual activity with (OR=3.305, 95%CI (1.768, 6.179). The proportion of sexually active never married youth who used modern contraceptives was 77 (74.8%) compared to only 52(61.9%) of those who had ever married. During multivariate analysis after controlling for confounding variables living patterns was found to be the main predictors, independently and negatively associated with use of modern contraceptive with OR=0.311,95%CI(.109,.885). Out of 40 sexually active female participants, 18(45%) of them had ever been pregnant. The mean ( $\pm$  SD) age at first pregnancy was 18.7 ( $\pm$  1.56) years. During multivariate analysis after controlling the possible confounding variables marital status were found to be the main predictor, independently and negatively associated with pregnancy with OR=0.027, 95%CI (.002,.462) and pvalue less than 0.05.

#### 3.3. Health Service Utilization

Out of 394 participants, only 84 (21.3%) of them reported that they have visited health institutions in three months time prior to the study. Moreover, the older the age the higher is the health institution visit, that is, 62(73.8%) who visited health institutions in three months time were in the age group of 20-24 years. Half, 42(50%) of the participants had reported that they had visited health institutions to get condom and 14(16.6%) of them visited for counselling. Among the common reasons for preference to visit such health institutions, free or low cost of treatment mentioned by 31(36.9%), proximity by 29 (34.5%), effectiveness of treatment by 9(10.7%), and prefer for confidentiality by 6(7%). During the bivariate analysis health service utilization was found to be significantly associated with many independent variables but after controlling for possible confounding variables age, sex, and income was found to be the main predictors and significantly associated with health service utilization with (OR=0.514 95%CI (0.278, 0.951), (OR=2.095 95%CI (1.116, 3.932), and (OR=0.288 95%CI (0.112, 0.742) respectively.

**4. Discussion:** During multivariate analysis after controlling the possible confounding variables, the older age group (20-24) with (OR=0.261, 95% CI (0.147, 0.462), found to be low risk as compared to the younger age (15-19). This could be truly contributed to the fact that as younger age there is low risk perception, more sexual desire and sexual exposure, most probably having multi partners and also in many studies it was found that most young people have superficial knowledge of STDs including HIV/AIDS. Similarly, being married was found to be protective relative to the never married one with (OR=0.026, 95%CI (0.007, 0.092). This could be, because of the fact that more of the youth became to the marital lock at appropriate age. Moreover, high access to quality maternal health and comprehensive family planning contributes too much for those married not to engage in risk sexual activities.

Accordingly, female group (OR=3.305, 95% CI (1.768, 6.179), was independently and positively associated with risk sexual behaviours (activities). This means that, being females have more risk sexual activities than males of the same age. This could be true, because, females culturally suffer from early

marriage, naturally from unwanted pregnancy, early child bearing, from abortion and its complications, in addition to STDs, not using condom, and multi partner, which also hold true to males. The study shows that 74.8% of unmarried sexually active youth had reported having used modern contraceptive as opposed to only 61.9% of those married. Several studies in the sub-Saharan Africa had reported that sexually active, unmarried adolescents are more likely than married adolescents to be relying on modern contraception (15, 19, and 20). This may be due to the fact that married youth in most developing countries particularly in rural areas are not expected to use modern contraceptives but to bear a child as immediately as possible (15,20). As revealed by logistic regression youth who live with both or single family have a low exposure to use modern contraceptive than youth who live with other group member with OR=0.311, 95% CI (.109, .885). This could be contributed to the fact that youth who live with both families have low risk of sexual activities because of the pressure and fear of family to engage in sex before marriage than those who live with other group members. In this study the median age at first pregnancy was 19.0 years similarly the median age of at first pregnancy among women living in urban areas was 18.2. The mean ages of marriage as stated by the participants were 20.0 and 24.8 years for girls and boys respectively. This proportion of age to marriage and pregnancy were promote WHO recommendation which may be due to higher school involvement of our study subjects, which also in agreement with other authors' finding that the less the educational level the higher the proportion, and the earlier the marriage and the reverse is true (22). During multivariate analysis after controlling the possible confounding variables Being not married was found to be less risk of pregnancy than married one with OR=0.027, 95%CI (.002, .462). This could be because of the facts that married youth was not expected to use modern contraceptives so that they become pregnant and bear a child as immediately as possible than those never married. Also culturally pregnancy is not acceptable for never married youth female. Logistic regression analysis was employed on possible explanatory variables over health service utilization to establish an association. Accordingly the older group (20-24) was less at service utilization compared to the younger age (15-19). This could be contributed to the fact that as age increased there is more physical maturity and less sexual desire and sexual exposure, good knowledge, positive personal judgement on risk sexual behaviours and most probably less exposure for illness. Also in this study most of the Younger's visit health institution than older. Sex (female) (OR=2.095 95%CI (1.116, 3.932), was found to be independently and positively associated with service utilization. Accordingly female was found to be high at service utilization when compared to the male one. As it was indicated in the previous association being females have more risk sexual activities than males of the same age. Likewise females culturally suffer from early marriage, naturally from unwanted pregnancy, early child bearing, from abortion and its complications, in addition to STDs, not using condom, and multi partner. Due to this all problem females have repeatedly utilize the service than males.

## 5. Conclusions

There is a lack of information and knowledge among youth on sexuality contraception, and HIV/AIDS and several misconceptions abound. Mass media is dominant source of information for youth on selected sexual and reproductive health issues whereas the family involvement to educate their youth about RH issues was very minimal. A substantial number of youth were found to be sexually active. Considerable proportion of them exhibited high risk sexual and reproductive behaviours that predisposed them for reproductive health problems. The risk behaviours include premarital sex, multiple sexual partners, and early sexual activity. Though most participants found to be involved in risky sexual behaviours, the great majority of them considered themselves low risk for HIV. Females were relatively more at risk sexual activities when compared to males of the same age. Younger age group was found to be more at risk as compared to the older age. High figure of the youth not served in the existing health institution for their reproductive health need, even those who used to be served, they claimed that the existing health institutions were inconvenient and unattractive. The research finding shows that is no support from their family members not to have premarital sex and also reported that female adult and male adult family members would scold them or turn them away without giving answer for sex related questions they raised. Moreover, there is some sorts of socio cultural factors affecting youth reproductive health such as participants' general social characteristics (risk sexual behaviour, lack of support, peers pressure, inappropriate service utilization and family negligence).

## 6. Recommendation

Strategies should be developed to enhance; channels that will be used to disseminate sexual and RH information as diversified as possible. In addition to media there should be other means of disseminating youth sexual and RH information for the these areas like involving peer communicators and educators, integrated health education campaigns and mass mobilization. To increase awareness and knowledge, carefully worded, non - threatening to the Cultural norms and simple messages on reproductive physiology, sexuality, STD and HIV/AIDS, condom and contraception should be developed and disseminated to the public in general and to youths in particular through community based approaches like, training and improving the capacity of CBRHAs, strengthening it through backup and outreach services by health workers and integration with kebele AIDS committees. Finally, Sensitization and orientation for health workers at different levels so that they understand and provide appropriate RH services to youth. what more important is building strong social support for the youth, from youth, from general community, particularly families, religious leaders, school teachers, health providers and administrative bodies. Orienting these groups on youth specific reproductive problems and persuading them to actively participate in the intervention programs and approve the sexual needs and services as a social norm.

## Acknowledgement

Above all, I would like to give thanks and glory to my LORD JESUS CHRIST who gave me the courage to pursue my study and also who provide me everything through my study. I would like to give my heart-felt gratitude to my advisor Mr. Yoseph Tsigie, for his unreserved, enriching and continuous support throughout the study period. I would like also to extend my deepest gratitude to AAU university school of graduate study for being sponsoring my study and the research development. I extend my appreciation to all participants of the study, the data collectors, and supervisors for their unreserved cooperation during the study period.

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## **Work Related Musculoskeletal Disorders and Their Influences On Office Workers In The Case Of Gondar Town**

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### **Abstract**

The focus of this study was to investigate the existence of work related musculoskeletal disorders and their influences on office workers in Gondar town. Currently work related musculoskeletal disorders are becoming the disaster problems facing our world. Purposive sampling method has been employed to select 158 secretaries and 162 administrators who were involving in long typing and computer uses from a total of 320 participants who have been involved in this study. Each office has been selected by stratified sampling based on purposively expected availability of information and participants were categorized according to their demographic placement such as sex, age, education and type of job. A descriptive survey study was used to carry out this research. To gather data questionnaire, interview and document analysis were employed. To analyze the collected data, both qualitative and quantitative methods were used. Results show that office workers have lack of knowledge, lack of regular exercise, hang around long period of time on computer, remaining long period of time on the same work. To overcome these effects, workers should have information about WMSD and its prevention mechanisms through on duty short trainings are important to prevent and also to solve the problem. Key words: - upper body pain, office workers, physical exercise, musculoskeletal disorders, work related, Ethiopia.

### **Introduction**

Work related Musculoskeletal disorders (WMSDs) are diseases related and/or aggravated by work that can affect the upper body part and lower body part. WMSD can be defined by impairments of bodily structures such as muscles, joints, tendons, ligaments, nerves, bones and the localized blood circulation system, caused or aggravated primarily by work it-self or by the work environment World Health Organization, (1985). Musculoskeletal disorders in general have become increasingly common worldwide during the past decades. It is a common cause of work-related disability among office workers with substantial financial consequences due to workers' compensation and medical expenses (Andersson, 1999). Work-related musculoskeletal disorders (WMSDs) related with repetitive and demanding working conditions continue to represent one of the biggest problems in office workers in the world. Logically the employees are one of the stake holders that help the country to achieve its goals in every sustainable developmental sector. So now a day's many employees are challenged by work- related musculoskeletal disorders. These might be the nature of the work they engaged like office secretarial, managers and others who forced by their nature of work to sit for a long period of time. So the purpose of this study is to deal with the existence and its effects of work related musculoskeletal disorders of office workers and also to suggest some attainable alternatives and computable recommendations in some selected offices of Gondar town. It is also expected to provide valuable support for improving the negative effects of WMSDs in Gondar town.

### **General Objective Of The Study**

The main purpose of this study is to assess the existence of Work-Related Musculoskeletal Disorders and their influences on office workers in the case of Gondar town.

### Specific Objectives Of The Study

The specific objectives of the study are;

to assess the presence or absence of work related musculoskeletal disorders, to prevent further effects of the disorders, to identify the most commonly occurred work related musculoskeletal disorders, to investigate the major causes of work related musculoskeletal disorders, to identify the negative impacts of work related musculoskeletal disorders in the employees' bodies.

To this end, the study tries to answer the following basic research questions.

Are there work related musculoskeletal disorders in offices of Gondar town? , If there, what measures should have to take to prevent further effects of the disorders? , What are the most commonly occurred work related musculoskeletal disorders?, What are the major causes of work related musculoskeletal disorders? , What are the negative impacts of work related musculoskeletal disorders in the employees' bodies?

This study would be designed in the direction to investigate the existence and their influences of Work-Related Musculoskeletal Disorders on office workers (secretarial) and administrators in some selected offices of Gondar town. The researcher of this study hopes that the findings of the study would contribute to: Provide knowledge and information for the readers about Work-Related Musculoskeletal Disorders that resulted frequently on office workers, Initiate other researchers to conduct further and detailed study on the existence of work related musculoskeletal disorders and their influences on office workers, moreover timely recommendations will be given to targeted populations and treatment and rehabilitation techniques will be applied in the case of Gondar town.

### Materials and Methodology

This research was conducted in Gondar town (Gondar town and University of Gondar) were selected to conduct this research due to its convenience in relation to time, money and work place for the researcher. Descriptive survey study design was carried out to investigate the study. In this case, 270 respondents have been randomly selected for the questionnaire, and 50 key informants for the interviews were selected purposively. In this study a total of 320 administrators and secretarial were selected from the sample offices of Gondar town and University of Gondar. From these offices we have a total of 162 administrators (140 were Male and 22 were Female) and 158 secretarial (33 were Male and 125 were Female). The offices were selected randomly and also the offices' secretarial and administrators would be selected by using purposive sampling techniques and both qualitative and quantitative analytical procedures were employed. Hence, Frequency Counts, Percentage and descriptive statements were used to analyses items of the questionnaire. The data collected through structured questionnaires were presented in tables and analyzed by one of statically acceptable tools (percentages) and descriptive statements. In addition, qualitative data were analyzed by summarizing responses of the open-ended items in the questionnaire and the interview. Finally, the data were analyzed and discussed to reach certain finding which in turn was used to give conclusion and possible recommendations. In addition to this documents were used to triangulate the responses.

### Results And Discussion

Table 1. About suffering from upper body pain

Items	Category	Frequency	Percent
3. Is there any pain on your upper body?	yes	202	74.92%
	No	68	25.07%
	Total	270	100%
4. Among the following body parts from which part you feel pain or discomfort while you working in your office?	on neck	123	45.48%
	shoulder	44	16.32%
	wrist/forearm	46	17.20%
	upper back	48	17.78%

	lower back	9	3.20%
	Total	270	100%
5.In the last year, have you had pain or discomfort at upper part of your body caused by your job that lasted 2 days and more	Yes	165	(61.22%)
	No	105	(38.78%)
Total		270	100%

According to the data analyzed above, majority of respondents replied that they are suffering a pain on their upper body particularly on their necks. This shows that most of the respondents are suffering a pain on their upper body parts, so this is one of the reasons that limit the productivity of the workers.

Table 2. About the severity of neck pain on office workers

Item no.	Alternative	Number of respondent	Percentage (%)
6.While working is there a pain or discomfort on the neck	Less	61	22.44
	Some	153	56.85
	Worse	56	20.69
	Total	270	100%
After your shift, is the pain or discomfort on the neck	Less	76	27.98%
	Some	150	55.39%
	Worse	54	20.11%
	Total	270	100%
How many days you off from your work that caused by neck pain?	1-6 days	46	17.20%
	1 week-6months	10	3.79%
	7month-1year	7	2.62%
	1year & above	2	0.87%
	Non off	204	75.51%
	Total	270	100%
To how much degree does your pain or discomfort interfere with your work on the neck?	No interference	99	36.73%
	some interference	135	49.85%
	Had to take time off work due to pain	36	13.41%
	Total	270	100%
To how much degree does your pain or discomfort interfere with your life outside of work that caused by the neck pain?	No interference	107	39.65%
	some interference	163	60.35%
	Total	270	100%

As indicated in the above table, 165(61.22%) of the participants of the research replied that they are suffering a pain on their upper body in the last year, this pain or discomfort at their upper body caused by their job and the pain lasted two days and more, while 105(38.78%) of the participants of the research replied that they are not suffering by a pain on their upper body in the last year. This implies that most of the research participants are suffering by chronic upper body pains which affect their work.

Regarding pain on neck while working around 61 (22.44%) respondents answered that they have less pain or discomfort on the neck while they are working at office, about 153 (56.85%) of the respondents answered some and the rest, 56 (20.69%) of the respondents replied worse.

Thus, this indicates that majority of administrators and office secretaries are suffering by neck pain while working in the office. Regarding, pain or discomfort on the neck after they shift from work around 76 (27.98%) respondents replied less, about 150 (55.39%) respondents replied some and about 54 (20.11%) of the respondents replied worse. This implies that more than half of the respondents were challenged by neck pain or discomfort after they shift from their regular work

Regarding days they off from their work that caused by neck pain majority 204 (75.51%) of respondents replied that the pain dose not caused them off from work, while around 46(17.20%) respondents replied 1-6 days, about 10 (3.79%) respondents replied 1 week- 6months, about 7(2.62%) respondents replied that 7month-1year, about 2 (0.87%) respondents replied that 1year & above they off from work by the pain in their neck. Regarding the degree of neck pain or discomfort interfere their work the majority 135(49.85%) of participants answered that the neck pain or discomfort they faced has some interference on their work, 99(36.73%) of participants answered that no interference on their work, and around 36(13.41%) of participants answered that the neck pain or discomfort they faced force them to take time off work due to pain. Thus this indicates that the pain or discomfort that caused by neck pain disturbs workers on their work. Regarding the degree of neck pain or discomfort interfere with their life outside of work the majority 163(60.35%) of participants answered that the neck pain or discomfort they faced has some interference on their life out of work, and 107(39.65%) of participants answered that no interference on their life out of work. Regarding pain on lower back while working around 106 (39.35%) respondents answered that they have less pain or discomfort on the lower back while they are working at office, about 112(41.39%) of the respondents answered some pain or discomfort on the lower back while they are working at office and the rest, 52 (19.24%) of the respondents replied worse. Thus, this indicates that majority of administrators and office secretaries are suffering by lower back pain while working in the office.

Regarding, pain or discomfort on the lower back after they shift from work around 124(46.06%) respondents replied less, about 117 (43.14%) respondents replied some pain or discomfort on the lower back after they shift from work and about 29 (10.78%) of the respondents replied worse. This implies office workers were challenged by lower back pain or discomfort after they shift from their regular work.

Table 3; about the pain or discomforts of lower back on office worker:

Item no.	Alternative	Number of respondent	Percentage(%)
26.While working is the pain or discomfort on the lower back	Less	106	39.35%
	Some	112	41.39%
	Worse	52	19.24%
	Total	270	100%
27.After your shift, is the pain or discomfort on the lower back	Less	124	46.06%
	Some	117	43.14%
	Worse	29	10.78%
	Total	270	100%
28. How many days off at your work caused by lower back pain?	1-6 days	42	15.74%
	1 week-6ments	28	10.20%
	7menth-one year	24	9.03%
	More than one year	8	2.91%
	Non off	168	62.09%
	Total	270	100%
29. To how much degree does your pain or discomfort interfere with your work on the lower back?	No interference	142	52.47%
	some interference	96	35.56%
	Had to take time off work due to pain	32	11.95%
	Total	270	100%
30. To how much degree does your pain or discomfort interfere with your life outside of work on the lower back?	No interference	148	54.81%
	some interference	122	45.18%
	Total	270	100%

Regarding days they off from their work that caused by lower back pain majority 168(62.09%) of respondents replied that the pain dose not caused them off from work, about 42(15.74%) of respondents replied that the pain caused them 1-6 days off from work, while around 24 (9.03%) respondents replied 7month-1year, about 28 (10.20%) of respondents replied 1 week- 6months, about 8 (2.91%) of respondents replied that 1year & above they off from work by the pain in their lower back. This implies that lower back pain is a problem on Gondar town office workers.

Regarding the degree of lower back pain or discomfort interfere their work the majority 142(52.47%) of participants answered that the lower back pain or discomfort they faced has less interference on their work, 96(35.56%) of participants answered that the pain or discomfort has some interference on their work, and around 32(11.95%) of participants answered that the lower back pain or discomfort they faced force them to take time off work due to pain. Thus this indicates that the pain or discomfort that caused by lower back pain disturbs workers on their work.

Regarding the degree of lower back pain or discomfort interfere with their life outside of work the majority 148(54.81%) of participants answered that less interference on their life out of work while 122(45.19%) of participants answered that the lower back pain or discomfort they faced has some interference on their life out of work. Thus this indicates that the pain or discomfort that caused by lower back pain disturbs their life outside of their work.

Based on the participants of this research, it is so easy to understand that there was consistency of views on the issues that rose by the researcher. At this point in time, it is also vital to repeat that significant numbers of respondents were argumentative about the problems of work related musculoskeletal disorders.

One of the key potential factors which have got relatively a significance number of respondents' consideration was, "poor knowledge and practice of the problem". "I am working as an office secretarial for many years but I have no idea about what you have saying (i.e. about work related musculoskeletal disorders).

### **Conclusion**

Work-related' musculoskeletal diseases (WMSDs) have heavy economic costs to companies and to healthcare systems. The costs are due to loss of productivity, training of new workers and compensation costs. These costs are felt globally, particularly as organizations begin to develop international partnerships for manufacturing and service roles. Logically the employees are one of the stake holders that help the country to achieve its goals in every sustainable developmental sector.

The foremost trials associate with the work-related' musculoskeletal diseases (WMSDs) are lack of sufficient knowledge, lack of regular exercise, hang around long period of time on computer, remaining long period of time on the same work, suffering a pain on their upper body. In this admiration, contributors specified that office workers (administrators and secretaries) should do regular exercise to be healthy and productive.

### **Recommendations**

The researcher proposed the following recommendations in light of the summary and conclusions made. Gondar town administrators should understand the means and solutions of treating work related musculoskeletal disorders.

Employer's responsibilities; Employers have both a moral and legal obligation to ensure a safe and healthy work environment

MSDs prevention needs to be a key part of a workplace health and safety program. MSDs risk factors should be handled like any other workplace hazard. Employers should identify and assess job-related MSDs risk factors (do a job/task hazard analysis) implement controls to reduce workers' exposure to MSDs risk factors

Preventions of WMSDs; Threats are best eliminated at the source; this is a fundamental principle of occupational health and safety

Treatments of WMSDs; the treatment of WMSDs involves several approaches including Application of heat or cold and Exercise.



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## The relationship between some anthropometric characteristics and 10m sprint run performance of junior volleyball players in west Gojam, Ethiopia

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### Abstract

The purpose of this study was to examine the relationship between some anthropometric characteristics and 10m sprint run performance of junior volleyball players. Sprint run performance and anthropometric characteristic of fifty four junior (U-19) volleyball players from west Gojam zone of Ethiopia were measured. The variables including standing reach height, spiking height, Iliac crest skin fold, Forearm, flexed and tensed arm girth, midstylium dactylone length, body mass index and 10m sprint run performance. The result reveals that anthropometric variables were significantly correlated with 10 m sprint run performance of junior volleyball players are forearm girth(  $r = 0.505$  ,  $p < 0.01$ ), iliac crest skin fold (  $0.479$ ,  $p < 0.01$ ) and Standing reach height( $r = 0.289$ ,  $P < 0.05$ ). Forearm girth, iliac crest skin explained approximately 47.0 % of the variation of 10m sprint performance together with weight and height of the junior volleyball players. Volleyball coaches, physical education teachers and sport scientists better to recognize the relationship among these variables and apply during selection of players.

Keywords: junior, anthropometric and 10m sprint run Performance.

### Introduction

Volleyball is a very energetic sport characterized by various sprints and high-intensity actions that occur frequently during the game (Polgaze and Dawson, 1992). In volleyball, players are necessary to move quickly in all directions during the whole game. Volleyball players need the ability to accelerate to achieve quick side, forward, backward, and vertical movements. Speed in volleyball help players instantly react to whatever direction the ball is strike, preventing it from touching the floor (Suzy Kerr, 2017). Successful performance of volleyball greatly depends on anthropometric and physical performance variables (Bourgois , Claessens , Vrijens , Philippaerts , Renterghem , Thomis , Janssens , Loos , Lefevre ,2002; Gabbett 2000; Thissen-Milder , Mayhew, 1991). Some studies also examined the relationship between anthropometric and physical performance characteristics of volleyball players (Duncan, Wood field and al-Nakeeb, 2006; Aytek, 2007; Gabbett, Georgieff & Domrow, 2007. However, the relationship between speed and anthropometric characteristic were not studied very well. Particularly, the relationship between 10m sprint run performance and anthropometric characteristic of junior volleyball players were clearly absent in literature. Therefore, the aim of the present study was to examine the relationship among selected anthropometric and 10m sprint run performance of junior volleyball players.

### Methods

#### Subjects

Fifty four male junior (U-19) volleyball players involved in the study from three junior volleyball teams found on west Gojam zone of Ethiopia, viz., Durbete, Shendie Wenberma and Qunzela junior volleyball teams. All players had been training for around nine years and participated in zonal and regional championships.

Test and measurement took place during November 2018. All those regularly involved in training and free from any injury were involved in the test. Following completion of a screening questionnaire, written informed consent was obtained from all participants in accordance with the international ethical standards. The sport officials of the zone, the coaches and regional volleyball federation experts were involved in the process.

### Tester's Competency

All the measurements were taken by the researchers with the assistances. Before the actual test and measurement, the researchers practiced pilot study and applied test-retest method to confirm their competency. The results demonstrated a high level of reliability coefficient ( $r = 0.941$  and  $r = 0.945$ ,  $P < 0.05$ ) for both anthropometric and physical performances characteristics. .

### Anthropometric Measures

The measurement of Standing reach height , Spiking height , forearm girth , flexed and tensed arm circumference and midstylium-dactylone length was measured to the nearest .001 m using a studio meter . Iliac crest skin fold was measured using Harpenden calipers (Lange, Cambridge, MA, USA). Body mass index of the players also calculated based on their height and weight.

### Performance Measures

Before the start of trials, a standard warm-up was achieved including some exercise of jogging, dynamic stretching and a series of sprints. Each player was verbally encouraged to give as his maximum effort during the tests. All tests in a particular team have been performed during optimum temperature of ( $20^{\circ}\text{C}$  to  $22^{\circ}\text{C}$ ) in the morning session of the day and after being informed about the nutritional status of subjects.

### 10-m Sprint runs Tests

The participants performed two maximal 10-m sprints on an outdoor natural court. During recovery (2 - 3 min), the participants walked back to the starting line and then waited for the next sprint. Time was recorded using stop watch. The best performance of trials time was selected for analysis.

### Statistical Analysis

Statistical analysis was performed using SPSS version 23.0 (SPSS Inc., Chicago, HIM (IT), and the USA). Pearson product-moment correlations were used to examine the relationship between anthropometric and physical performance characteristic with a significant level of .05 was employed. The method of linear regression was used for determining the impact of the anthropometric characteristics on 10m sprint run performances of junior volleyball. The linear relation between the anthropometric characteristics and physical performances is represented by regressions(R)

### Results and discussion

The association between these variables in table 1 and the performance predicting variable are given in table 2 as well.

Table 1: Correlation between anthropometric and 10m sprint run performance characteristics

Physical performance	Anthropometrics	R	Sig.(2-tail)
10m sprint run	Wight	-.004	.980
	Forearm girth	.505**	.000
	Illiaccrest skin fold	.479**	.000
	Height	.235	.087
	Standing reach height	.289*	.034
	Spiking height	.136	.328
	Midstylium- dactylone length	-.059	.671

Note: \*\*. Correlation is significant at the 0.01 level (2-tailed). \*. Correlation is significant at the 0.05 level (2-tailed)

As the above table indicates, 10m sprint run was significantly correlated to three anthropometric variables, namely forearm circumference , Iliac crest skin fold and standing reach height with the correlation coefficient of 0 .505 ( $p < 0.01$ ), 0 .479 ( $p < 0.01$ ) and 0.289 ( $p < 0.05$ ) respectively. So, they are among the most significant predictor of 10 m sprint run performance of junior volleyball players. The body weight was negatively correlated ( $r = -.004$ ) to 10m sprint run performance of players.

In this study regression prediction analysis between the results of 10m sprint run test and selected anthropometric variables was performed.

The results are shown in Table 2 and Table 3.

Table 2: Summary of regression prediction of 10m sprint run test with anthropometric variables

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	F	Sig.
	.712	.507	.467		.21672	12.621	.000

Predictors: (Constant), forearm girth, iliac crest skin fold , weight and height,

Table 3: Coefficients of regression prediction of 10m sprint run with anthropometric variables

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
6	(Constant)	-1.951	.849		-2.298	.026
	Forearm girth	.133	.029	.584	4.539	.000
	Iliac crest skin fold	.031	.011	.298	2.753	.008
	Weight	-.023	.006	-.563	-3.880	.000
	height	.011	.005	.287	2.135	.038

Dependent Variable: 10 m sprint run score

A significant stepwise regression equation was found with an R<sup>2</sup> (Adj.) of 0.467

$$10\text{m sprint run performance} = -1.951 + 0.133(X_1) + 0.31(X_2) - 0.023(X_3) + 0.011(X_4)$$

Where X1: Forearm girth, X2: Iliac crest skin fold, X3: weigh and X4: height

A multiple linear regression was calculated to predict 10 m sprint run performance for junior volleyball players based on the selected anthropometric variables. As a result Forearm girth, iliac crest skin fold, weight and height were found to predict their 10 m sprint performance of junior volleyball players. These parameters explain approximately 47.0 % of the variation of sprint run performance for the junior volleyball players.

Players' predicted 10 m sprint run performance is equal to  $-1.951 + 0.133(24.72) + 0.31(10.87) - 0.023(60.12) + 0.011(176.25)$ , where forearm girth and height measured in cm, Iliacrest skin fold in mm and Body weight in kilogram. If Iliacrest skin fold, Body weight and height held constant, then 10 m sprint run performance improved by 0.133 second for each centimeter increment in forearm girth. Whereas, if Forearm girth, iliac crest and height fold held constant, then 10 m sprint run performance decline by 0.023 seconds for each increment in body weight.

### Conclusion

Anthropometric characteristic which have greater correlation with 10 m sprint run performance of junior volleyball players are forearm girth, iliaccrest skin fold , weight and body height. These parameters explained approximately 47.0 % of the variation of 10m sprint performance for the junior volleyball players.

### Recommendations

Volleyball coaches, physical education teachers and sport scientists should recognize the relationship among anthropometric and physical performance characteristic of junior volleyball players, particularly the relationship among 10m sprint performance , forearm girth, iliac crest skin fold , body weight and height , so as to apply during selection of talented players.

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## **Compare the Anthropometric measurements of Tesfa Football Players according to Their Playing Positions**

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### **Abstract**

The aim of the present study was to compare selected anthropometric variables among defenders, midfielders and forwards of Tesfafootball players in Addis Ababa. The subject of this specific research was 75 football players (25 defender, 25 midfielder and 25 forward of Tesfafootball players). The age of the players were ranged between (19 - 23) years. Variables of the this study include anthropometric measurements consists of Standing height, Weight, Foot length, Lower Leg length, Upper leg length, Calf girth and Mid-thigh girth. After the collection of relevant data, it was processed and analyzed with descriptive statistics. To compare the Anthropometric variables of subjects, mean and standard deviation were employed with the help of SPSS version 20 statistical software. The result showed that there were statistically significance differences on mean value of foot length, upper leg, lower leg length, weight, height, calf girth and thigh girth of defenders, midfielders and forward players. Foot length of defenders had greater than the midfielders and forwards, as well as foot length of midfielders was greater than forward players. Upper leg length of midfielders had greater than the defenders and forward players and the lower leg length of forwards had greater than the midfielders and defenders. Furthermore, the weight and height of defenders had greater than the midfielders and forwards.

Key words: Anthropometry, Tesfa football club, football etc.

### **Introduction**

Football is also known as Soccer, is probably world's most popular sport, played in practically every nation at varying levels of competence. Football may be played competitively or for fun, as a career, a means of keeping fit or simply a recreational pursuit (Reilly, 1996). Soccer is now being played in more than 210 countries throughout the world. Soccer is popular because of the fact it is a simple game requiring very minimum infrastructures and equipment. Success in soccer is dependent upon a variety of factors including the physical characteristics and physiological capacities of the players, their level of skill, their degree of motivation, and tactics employed by them against the opposition. Some of those factors are not easily measured objectively, but others can be tested using standardized methods and can provide useful information for coaches (Singh, 2011).

In a soccer game, players have to perform various technical and tactical tasks according to their playing positions, which are defined as goalkeeper, defender, midfielder and forward. FIFA, 2002 and 2006 reported that professional soccer players have positional differences in anthropometry such as body mass, height, and body mass index (BMI). According to FIFA 2006, goal keeper were significantly taller, heavier, and had higher BMI than defender, midfielder and forward, whereas forward were significantly shorter and lighter than the others. This evidence suggests that anthropometrical variables have been important for categories players in different playing positions and result in the selection of young players based on anthropometrical measurements.

### **Statement of the problem**

The purpose of this research study was to compare and analyze the differences on selected anthropometric variables between defenders, midfielders and forwards of Tesfa football league players in Addis Ababa.

### Methods and procedure:

A quantitative cross sectional research design was employed. The study was conducted in Addis Ababa, Ethiopia. The researcher surveyed Tesfa football league players in Addis Ababa and a total of 175 players were found suitable for the study. From this suitable players population, 75 players (25 players from defenders, 25 players from mid-fielders and 25 players from forwards) were selected as subjects for the study. Purposive sampling technique was employed to select the players to the study. Data analysis was carried out by using SPSS version 20 statistical software packages. Statistical techniques like descriptive. Descriptive statistics were calculated by each positional role. Variables of this study include anthropometric measurements consisting of Standing height, Weight, Foot length, Lower Leg length, Upper leg length, Calf girth and Mid-thigh girth. The instruments used to collect the anthropometric measurement data were: Stadiometer, weight machine, steel tape, wall, chair, paper, pen, chalk and artificial marker.

### Analysis of results

The comparative analysis on selected anthropometric variables of defenders, midfielders and forwards of Tesfa league players in Addis Ababa were analyzed and presented as follows.

The data collected on foot length of defenders, midfielders and forward players of Tesfa football league players were analyzed in table 1.

Table 1. Comparison of foot length measurements between defenders, midfielder and forward

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Foot length (cm)	Defenders	25	26.72	1.137	.227	26.25	27.19
	Midfielder	25	26.36	.810	.162	26.03	26.69
	Forward	25	26.04	1.172	.234	25.56	26.52

Table 1 shows that the mean and standard deviation of foot length for defenders, midfielders and forwards were  $26.72 \pm 1.137$ ,  $26.36 \pm 0.810$  and  $26.04 \pm 1.172$  respectively. The table showed that there were differences on mean value of foot length of defenders, midfielders and forward players. Based on the analysis, the foot length of defenders had greater than the midfielders and forwards. As well as foot length of midfielders was greater than forward players.

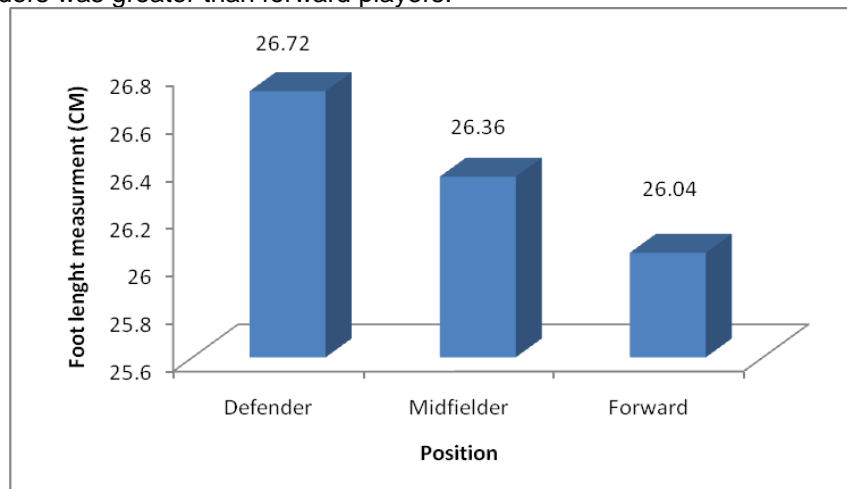


Fig 1. Comparison means scores of foot length as anthropometric measurement between defenders, midfielder and forward.

Table 2. Comparison of upper leg length measurements between defenders, midfielder and forward.

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Upper leg length	Defenders	25	48.64	3.239	.648	47.30	49.98
	Midfielder	25	49.04	3.062	.612	47.78	50.30
	Forward	25	47.84	3.815	.763	46.27	49.41

Table 2. Shows that the mean and standard deviation of upper leg length for defenders were  $48.64 \pm 3.239$ , for midfielders were  $49.04 \pm 3.062$  and for forwards were  $47.84 \pm 3.815$ . The table also showed that there were differences on mean value of upper leg length between defender, midfielder and forward players. Based on the analysis, the upper leg length of midfielders had greater than the defenders and forward players. As well as upper leg length of defenders was greater than forward players.

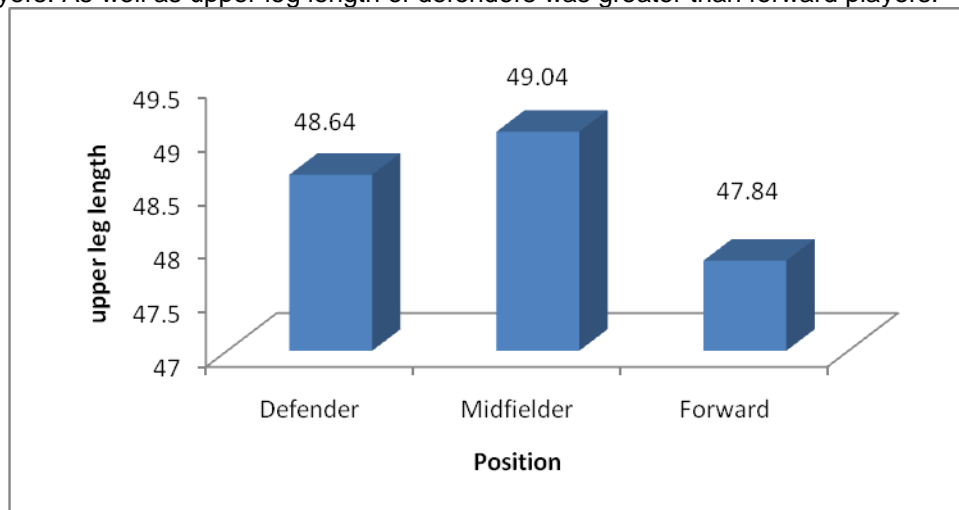


Fig.2 Comparison means scores of upper leg length as anthropometric measurement between defenders, midfielder and forward.

Table 3: Comparison of lower leg length measurements between defenders, midfielder and forward

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Lower leg length (cm)	Defenders	25	41.20	2.693	.539	40.09	42.31
	Midfielder	25	41.36	1.997	.399	40.54	42.18
	Forward	25	42.28	3.385	.677	40.88	43.68

The above table 3 shows that the mean of lower leg length for defenders, mid fielders and forwards were  $41.20 \pm 2.693$ ,  $41.36 \pm 1.997$  and  $42.28 \pm 3.385$  respectively. The result showed that there were differences on mean value of lower leg length of defenders, midfielders and forward players. Based on the analysis, the lower leg length of forwards had greater than the midfielders and defenders. As well as lower leg length of midfielders was greater than defender players.

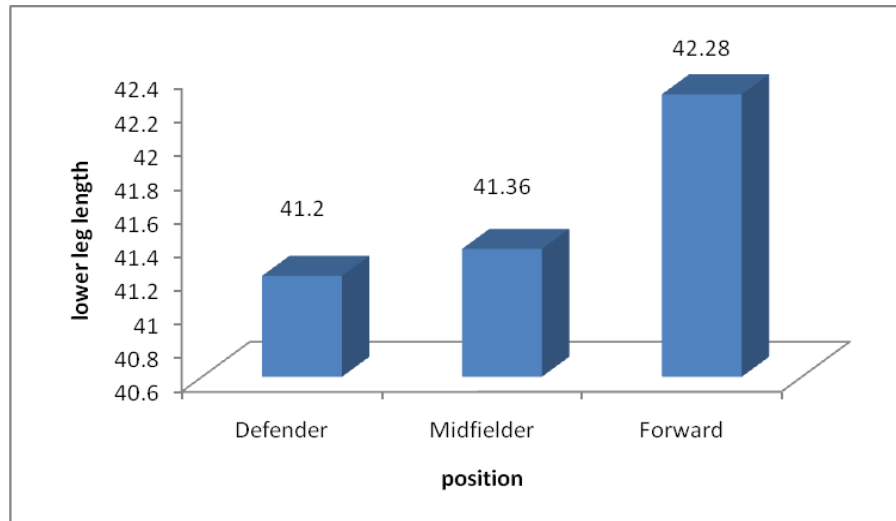


Fig.3 Comparison means scores of lower leg length as anthropometric measurement between defenders, midfielder and forward.

Table 4: Comparison of body weight between defenders, midfielder and forward

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Weight (kg)	Defenders	25	67.6000	5.36967	1.07393	65.3835	69.8165
	Midfielder	25	63.5200	4.15452	.83090	61.8051	65.2349
	Forward	25	65.1440	6.17941	1.23588	62.5933	67.6947

The above table shows the mean value and standard deviation of weight for defenders, midfielders and forwards were  $67.6000 \pm 5.36967$ ,  $63.5200 \pm 4.15452$  and  $65.1440 \pm 6.17941$  respectively. The table showed that there were differences on mean value of weight of defenders, midfielders and forward players. The highest mean was scored by defenders followed by forwards and the lowest mean was midfielders.

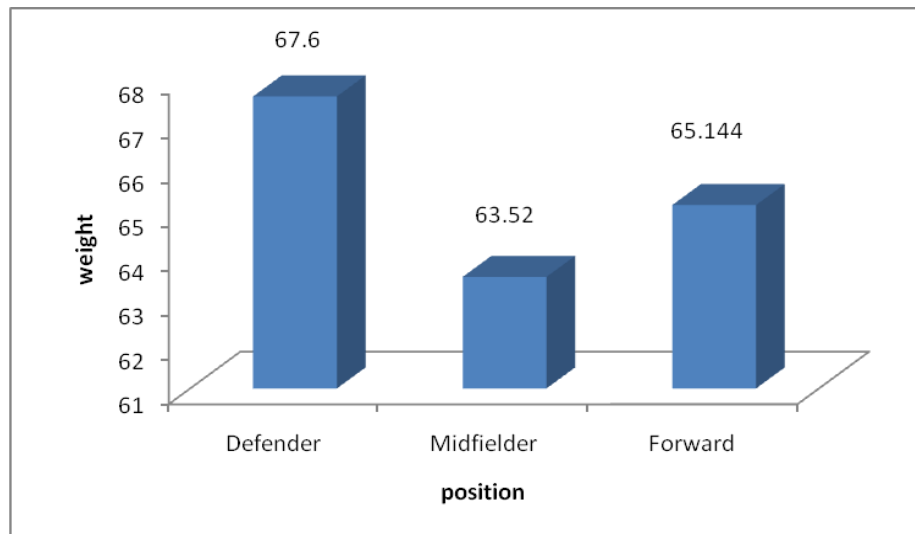


Fig.4 Comparison means scores of body weight as anthropometric measurement between defenders, midfielder and forward.



Table 5 Comparison of body Height between defenders, midfielder and forward.

Variable	position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Height (cm)	Defenders	25	1.7612	.05981	.01196	1.7365	1.7859
	Midfielder	25	1.7424	.05629	.01126	1.7192	1.7656
	Forward	25	1.7380	.05439	.01088	1.7155	1.7605

The above table shows the mean and standard deviation of height for defenders, mid fielders and forwards were  $1.7612 \pm 0.05981$ ,  $1.7424 \pm 0.05629$  and  $1.7380 \pm 0.05439$  respectively. The table showed that there were differences between the mean height of defenders, midfielders and forwards players. Based on the analysis, the height of defenders had greater than the midfielders and forwards. As well as height of midfielders was greater than forward players.

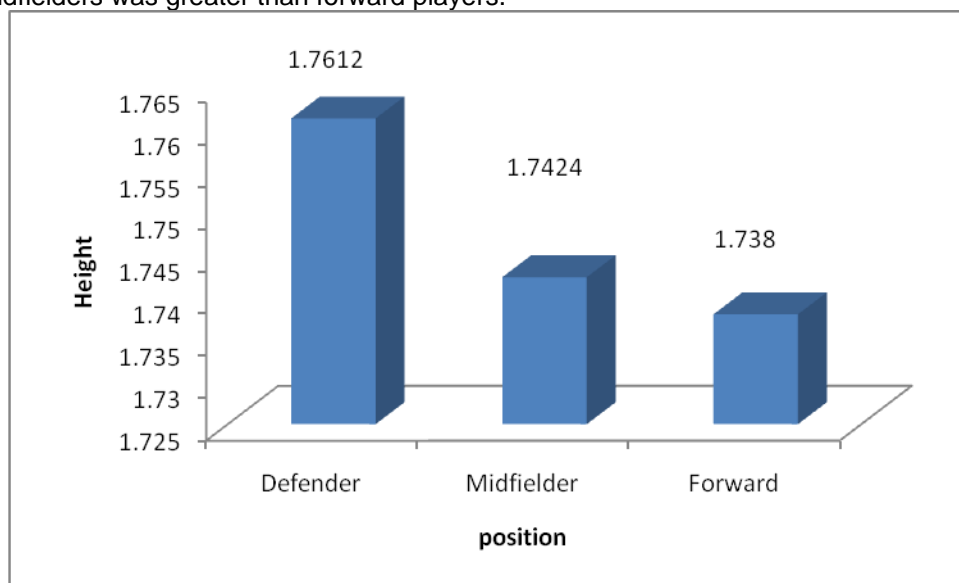


Fig.5 Comparison means scores of height as anthropometric measurement between defenders, midfielder and forward.

Table 6. Comparison of calf girth between defenders, midfielder and forward

Variable	position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Calf girth (cm)	Defenders	25	34.52	1.896	.379	33.74	35.30
	Midfielder	25	33.52	1.194	.239	33.03	34.01
	Forward	25	34.44	1.850	.370	33.68	35.20

The above table shows that the mean and standard deviation of calf girth for defenders, mid fielders and forwards were  $34.52 \pm 1.896$ ,  $33.52 \pm 1.194$  and  $34.44 \pm 1.850$  respectively. The table showed that there were differences between the mean of calf girth of defenders, midfielders and forward players. Based on the analysis, the calf girth of defenders had greater than the midfielders and forwards.

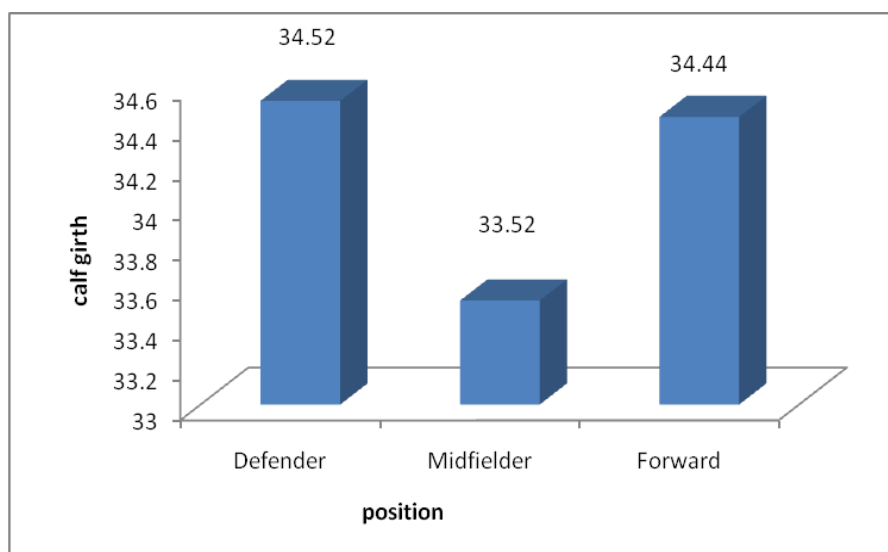


Fig.6 Comparison means scores of calf girth as anthropometric measurement between defenders, midfielder and forward.

Table 7: Comparison of mid-thigh girth between defenders, midfielder and forward

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Mid-thigh girth (cm)	Defender	25	54.88	2.804	.561	53.72	56.04
	Midfielder	25	52.68	2.657	.531	51.58	53.78
	Forward	25	54.00	2.255	.451	53.07	54.93

Table 7 shows that the mean of mid-thigh girth for defenders, mid fielders and forwards were  $54.88 \pm 2.804$ ,  $52.68 \pm 2.657$  and  $54.00 \pm 2.255$  respectively. The table showed that there were differences between the mean of mid-thigh girth of defenders, midfielders and forward players. Based on the analysis, the mid-thigh girth of defenders had greater than the midfielders and forwards.



Fig.7 Comparison means scores of mid-thigh girth as anthropometric measurement between defenders, midfielder and forward.

## Discussion of findings

The present study was to compare the selected anthropometric variables of youth football project. The result of study shows that statistically significant difference in the anthropometrical variables was found among the soccer players of different playing positions. It was demonstrated that significant differences between defenders, mid-fielders and forwards in foot length, upper leg length, lower leg length, and height and calf girth.

Based on the analysis of the data, the foot length of defenders had greater than the midfielders and forwards, as well as foot length of midfielders was greater than forward players. On the other hand the upper leg length of midfielders had greater than the defenders and forward players and the lower leg length of forwards had greater than the midfielders and defenders. Furthermore, the weight and height of defenders had greater than the midfielders and forwards. In addition the calf girth and mid-thigh girth of defenders had greater than the midfielders and forwards. This result was in line with many previous studies like (Naghibi & Madialagan, 2012, Singh & Singh, 2015, Bloomfield et al., 2007, and Dey et al., 2010). The study conducted by Singh, A., & Singh showed that there were significant differences were shown in height variable between defenders and midfielders in football. But on the contrary Subhasish Bhattacharya conducted a study on anthropometric measurement and the result of his study in agreement with the present study. The results of the study indicated that defenders, mid-fielders and attackers had no significant differences in anthropometric measurements (Subhasish Bhattacharya 2003).

## Conclusion

Based on the results the following conclusion was drawn from the present study:

Defenders had greater foot length than midfielder and forward. Midfielders had greater upper leg length than the defenders and forward players. The lower leg length of forwards had greater than the midfielders and defenders. The weight and height of defenders had greater than the midfielders and forwards. The calf girth and mid-thigh girth of defenders had greater than the midfielders and forwards.

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## **Comparative study on selected physical fitness variables of football players in different playing positions**

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### **Abstract**

The purpose of the study was to compare the selected physical fitness variables of football players' in different playing positions. The subject of this specific research was 75 football players (25 defender, 25 midfielder and 25 forward of Tesfa football players) selected by using purposive sampling method. The age of the players were ranged between (19 - 23) years. The variables of the study include physical fitness variables like speed (30m sprint run), Agility(T-test), Cardiovascular endurance (12 minute run) and Explosive Strength (Vertical jump test). The result of the study showed that there were mean differences among defenders, midfielders and forwards players on speed, agility, cardiovascular endurance and explosive strength. The speed of forwards had greater than the defenders and midfielders. On the other hand the agility of forwards had greater than the defenders and midfielders and agility of defenders had better than midfielder players. Furthermore, the cardiovascular endurance of defenders had greater than the midfielders and forwards. Key words: speed, agility, cardiovascular endurance, explosive power

### **Introduction**

Football is the one of the most well-known sport in the world (Witvrouw, et.al 2003, Wong & Hong, 2005) and it is also a popular sport in Ethiopia. There are a number of clubs and projects that rapidly growth and popular in all areas of Ethiopia. Based on the playing position football players are allocated into four categories specifically, goalkeepers, defenders, midfielders and attackers in addition every playing positions has specific roles. In football physical fitness has an important role for different playing positions for instance the midfield players connect defense and forward players and the highest total distance covered by midfield players, defenders execute extra backward movement than forwards (Reilly, T. 1976). Forward players become the quickest players from the group ( Rienzi et.al. 2000). During competition Physical fitness is the most essential contributing factor for the success of the game (Smekal et.al.2001). A research has been conducted previously reported that every playing position possibly has exclusively specific physical and physiological requirements (Bloomfield et.al.2007). Different literatures in the field of soccer have been reported as aerobic fitness, muscle strength, high level of speed, explosive jumping power and agility are essential for football players (Arnason et.al. 2004). Consequently, the purpose of this study was to compare the physical fitness characteristics of football players among different playing position at Addis Ababa in Tesfa football league players.

### **Statement of the problem**

The purpose of this research paper was to compare and analyze the differences on selected physical fitness variables between defenders, midfielders and forwards of Tesfa football league players in Addis Ababa. The position of football players were categorized in four which is goalkeepers, defenders, midfielders and forwards. For this study three playing position were selected that is defenders, midfielders and forwards. Goalkeepers are considered as defensive players

### Methods and procedure

A descriptive and cross-sectional research design was employed to collect the relevant data for this research paper. The study was conducted in Addis Ababa, Ethiopia. The researcher surveyed Tesfa football league players in Addis Ababa and a total of 175 players were found suitable for the study. From this suitable player's, 75 players (25 players from defenders, 25 players from mid-fielders and 25 players from forwards) were selected as subjects for the study. Purposive sampling technique was employed to select the players to the study. Data analysis was carried out by using SPSS version 20 statistical software packages. Statistical techniques like descriptive. Descriptive statistics were calculated by each positional role. Variables of this study were including speed, agility, cardiovascular endurance and explosive strength. The types of physical fitness test batteries incorporate for speed 30m sprint, for Agility T-test, for cardiovascular endurance Cooper's 12minutes run/walk test and for explosive strength Vertical Jump Test.

### Analysis of results

The analysis and interpretation on selected physical fitness variables of different playing position of Tesfa league players in Addis Ababa were analyzed and presented as follows.

The data collected on speed of players at different playing positions presented in table 1

Table 1.Descriptive analysis for the speed test

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Speed (sec)	Defenders	25	00:00:04.700	00:00:00.363	00:00:00.073	00:00:04.551	00:00:04.850
	Midfielder	25	00:00:04.736	00:00:00.352	00:00:00.070	00:00:04.590	00:00:04.881
	Forward	25	00:00:04.634	00:00:00.434	00:00:00.087	00:00:04.455	00:00:04.813
	Total	75	00:00:04.690	00:00:00.382	00:00:00.044	00:00:04.602	00:00:04.778

The result of the above table shows that the mean and standard deviation of speed for defenders, midfielders and forwards were  $00:00:04.700 \pm 00:00:00.363$ ,  $00:00:04.736 \pm 00:00:00.352$  and  $00:00:04.634 \pm 00:00:00.434$  respectively. The table showed that there were mean differences between the speed of defenders, midfielders and forwards players. Based on the analysis, the speed of forwards had greater than the defenders and midfielders. As well as speed of defenders was greater than midfielder players.

Table 2.Descriptive analysis for the Agility test

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Agility (sec)	Defenders	25	00:00:10.324	00:00:00.509	00:00:00.102	00:00:10.114	00:00:10.534
	Midfielder	25	00:00:10.350	00:00:00.449	00:00:00.090	00:00:10.165	00:00:10.536
	Forward	25	00:00:10.304	00:00:00.493	00:00:00.099	00:00:10.101	00:00:10.508
	Total	75	00:00:10.326	00:00:00.478	00:00:00.055	00:00:10.216	00:00:10.436

Table 2 shows that the mean standard deviation of agility for defenders, mid-fielders and forwards were 00:00:10.324  $\pm$  00:00:00.509, 00:00:10.350  $\pm$  00:00:00.449 and 00:00:10.304  $\pm$  00:00:00.493 respectively. The table showed that there were mean differences between the defenders, midfielders and forwards players on agility T-test. Based on the analysis, the agility of forwards had greater than the defenders and midfielders. As well as agility of defenders had better than midfielder players.

Table 3.Descriptive analysis for the cardiovascular endurance test

Variable	position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Cardiovascular endurance (m)	Defenders	25	3080.00	374.166	74.833	2925.55	3234.45
	Midfielder	25	2988.00	277.369	55.474	2873.51	3102.49
	Forward	25	3008.00	211.975	42.395	2920.50	3095.50
	Total	75	3025.33	294.129	33.963	2957.66	3093.01

The above table shows the mean and standard deviation of cardiovascular endurance for defenders; mid fielders and forwards were 3080.00  $\pm$  374.166, 2988.00  $\pm$  277.369 and 3008  $\pm$  211.975 respectively. The table showed that there were mean differences between of defenders, midfielders and forwards players on cardiovascular endurance (12 minute run test). Based on the analysis, the cardiovascular endurance of defenders had greater than the midfielders and forwards. As well as the cardiovascular endurance of forward players was greater than midfielder players.

Table 4.Descriptive analysis for the Explosive strengthtest

Variable	Position	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Explosive strength (cm)	Defenders	25	43.72	5.962	1.192	41.26	46.18
	Midfielder	25	41.44	5.173	1.035	39.30	43.58
	Forward	25	44.80	4.359	.872	43.00	46.60
	Total	75	43.32	5.325	.615	42.09	44.55

Table 4shows the mean and standard deviation of explosive strength for defenders (43.72  $\pm$  5.962), mid-fielders(41.44  $\pm$  5.173) and forwards (44.80  $\pm$  4.359). The table showed that there were mean differences between defenders, midfielders and forwards players on explosive strength (vertical jump). Based on the analysis, the explosive strength of forward players had greater than the defenders and midfielders. As well as explosive strength of defenders was greater than midfielders.

## Discussion of findings

The purpose of the study was to compare the selected physical fitness variables of football players in different playing positions. Physical fitness was the most important variables for football players in different levels and positions. The study showed that there were mean difference among players of defenders, midfielders and forwards on all selected physical fitness variables. The study revealed that there were mean differences between the speed of defenders, midfielders and forwards players. The finding was supported with those of (Boone et al,2012 and Kartal,R.2016)on football players. It was found that there were significant difference players in speed. Boone conducted a study on Belgian football players found the strikers had significantly shorter sprinting times compared with the midfielders, center backs, and goalkeepers (Boone et al, 2012).

On the hand there were mean differences between the defenders, midfielders and forwards players on agility T-test. The agility of forwards had greater than the defenders and midfielders and agility of defenders had better than midfielder players. The finding was in line with (Gaurav & Singh, 2015).It is revealed that both midfielders and attackers had shown better agility than their counterparts; goalkeepers and defenders.

Furthermore, the result shows that there were mean differences between of defenders, midfielders and forwards players on cardiovascular endurance (12 minute run test). The cardiovascular endurance of defenders had greater than the midfielders and forwards and cardiovascular endurance of forward players was greater than midfielder players.

Finally, there were mean differences between defenders, midfielders and forwards players on explosive strength (vertical jump). Based on the analysis, the explosive strength of forward players had greater than the defenders and midfielders. And explosive strength of defenders was greater than midfielders. The present study was supported by (Reilly, 1979, Gaurav & Singh, 2015)

### **Conclusion**

Based on the results the following conclusion was drawn from the present study:

Forwards had greater speed than the defenders and midfielders.

Agility of forwards players had greater than the defenders and midfielders.

Defenders had better cardiovascular endurance than midfielders and forwards.

Explosive strength of forward players had greater than the defenders and midfielders. As well as explosive strength of defenders was greater than midfield

## Talent Identification and Its Implementation in the Selection of North Gondar U-15 Volleyball Project players

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### Abstract

The purpose of this study is assessing the practice of talent identification in the selection of under fifteen volleyball project players in north Gondar administrative zone. The practice of talent identification in the selected Zone, mixed approach particularly explanatory design was used, a total of 48 participants (male=31 female=17) were taken from volleyball projects of Gondar Zuria, Dembia, Adiarkay and Lay Armachihoworedas as samples of the study. Both quantitative and qualitative data were collected. To this end, quantitative data were collected using self-developed questionnaire. Whereas, qualitative data were collected using semi-structured interview. The result of the study revealed that except passing and spiking techniques, other technical/tactical variables such as ball handling technique were not considered during the selection. Except vision or hand-eye coordination, other physiological variables such as coordination and reaction speed were not taken in to account during selection. Results indicate that psychological variables such as problem solving were tested during selection. Others like somatotype were also examined to some extent. On the contrary, variables such as size were rejected during selection. Results also confirmed that project teams' success in short period of time and promoting the volleyball sport are some of the positive outcomes achieved as result of implementing some of the talent identification criteria. Lack of training opportunities and standardize selection manuals are some of the factors that prohibit the full realization of scientific talent identification practices in the indicated project teams. Based on the findings of the study, recommendation such as EVF, Regional, Zonal and Woreda sport governing bodies should facilitate ample education and training opportunities for existing coaches and sport experts, have been given to narrow the gaps observed. Key words: Talent identification, Volleyball, projects and North Gondar..

### Introduction

The sport of volleyball originated in the United States. It was invented by William G Morgan in 1895. Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964. A scene of volleyball play in an Erwadi village (2007).

Today, volleyball is one of the most amazing sports, includes fast movements, jumping, landing and sudden shifts which need high power and strength for optimized performance. Physical structures of volleyball players are mainly assessed through measuring anthropometric parameters such as standing height, body mass index and some other physical factors related to performance skills like jumping ability, agility, strength and endurance. Numerous studies have investigated anthropometric parameters of volleyball players. In volleyball, technical and tactical skills, anthropometric characteristics and individual



physical performance capacities are most important factors that contribute to the success of a team in competitions (Hakkinen, 1993).

In realizing the above factors, in the process of volleyball team development, talents of the players should go through the process of talent identification and assessment of anthropometric characteristics. Thus, talent identification becomes the critical point in the outset of volleyball and other team development processes. Moreover, the early identification of talented players is an important consideration for coaches, researchers, federations, parents, sponsors, etc. Once talented individuals have been detected, it allows the involved persons to optimally arrange the resources required. Therefore, it is important to recognize talent with a high level of success and secondly to organize the proper support and training which will help them achieve their full potential.

In line with the above ideas, Williams & Reilly (2000) suggested that "objective data collected by sports scientists can help confirm practitioners' initial intuition with regard to players' strengths and weaknesses" and that the retrospective analysis of the development of talented players provides the best data for the construction of an "ideal" player development system.

Talent identification could be seen as sum total process that incorporates multiple philological, psychological, technical and tactical criteria.

Talent identification is a process that involves making a judgment about a performer's qualities and offering that individual an opportunity to do something for which he or she is suited. Talented youngsters must be identified on their ability to be the best players in the future, not their current abilities. Talent is a marked innate ability defined as artistic accomplishment, natural endowment or an ability of a superior quality. Talent in sport can be defined as an individual's special aptitude that is above average for specific functions. Physical talents may be functional, expressive or athletic (Peltola, 1992). Talent detection refers to the detection of athletes who are not currently participating in the sport (Williams and Reilly, 2000). In volleyball, it may be possible to take on athletes from football, handball, or basketball aged between 12 and 16 years and put these athletes into a specific development plan. This concept requires further investigation. Williams and Reilly (2000) also emphasized that talent identification refers to the process of recognizing current participants with the potential to become elite players.

Working as a teacher and sport expert in different woredas, the current researcher has had the experiences of realizing football, volleyball and players of other kinds of sports ineffective. Specially, for many occasion, project volleyball teams were found ineffective for many reasons. Consequently, coaches and other government offices working in the area lost their time, energy and money for nothing. Thus, I personally thought that there should be problems in the process of talent identification and selection process. Moreover, as per to the knowledge of the current researcher, there are no research results concerning talent identification practice and its application for the selection of volleyball teams in north Gondar administrative zone.

Thus, the current study has tried to assess problems related with talent identification and its implementation for selection of north Gondar under fifteen volleyball project players. The study particularly focuses on four woredas namely, Gonder Zuria, Adiarkay, Lay Armachiho and Dembiaworedas of North Gondar administrative zone.

### **Research design**

The researcher believed that to explore the practice of talent identification in the selection of north Gondar volleyball project players under fifteen, both quantitative and qualitative data are important because these data could substantiate each other and could give rich description to answer the research questions raised. Thus, first quantitative and then qualitative data were gathered. Thus, the study assumed mixed approach, particularly explanatory design.

### **Target population**

The target population of this study were all volleyball projects undertaken in north Gondar administrative zone.

More specifically, both male and female volleyball players, coaches and sport experts who are operating in those projects were considered as the target population of the study.

## Participants

Principally, participants of this study were male and female players who participate in north Gondar under fifteen volleyball projects, project coaches and sport experts of woreda youth and sport office. Hence, a total of 48 participants of whom 32(male=16 female=16) were volleyball players, 9 (male=9 female=0) were coaches and 7(male=6 female=1) were sport experts.

Item	Yes	Percent	No	Percent	Total
Ball handling technique	0	0	32	100	32
Passing technique	26	81.25	6	18.75	32
Spiking technique	20	62.25	12	37.5	32
Basic consistency	0	0	32	100	32
Learning new skill quickly	3	9.37	29	90.62	32

## Statistical analysis

Data that were gathered using questionnaire, observation rating checklists and semi-structured interview was analyzed in quantitative and qualitative terms.

## Results

### Demographic characteristics of volleyball players

Characteristics	Frequency		Percentage (%)
<b>Sex</b>	Male	16	50
	Female	16	50
	Total	32	100
<b>Age</b>	Below 13 years	0	0
	13-14 years	32	100
	Above 15 years	0	0
	Total	32	100
<b>Height</b>	1.38–1.45 Meter	11	34.3
	1.46-1.53 Meters	5	15.6
	1.54–1.62 Meters	12	37.5
	1.63 Meters ≤	4	12.5
	Total	32	100
<b>Weight</b>	37-42 Kg	10	31.2
	43-47 Kg	6	18.75
	48-52 Kg	10	31.2
	53- 58 Kg	6	18.75
	Total	32	100
<b>Educational level</b>	Primary (1-8 grades)	27	84.3
	Secondary (9-10 grades)	5	15.6
	Total	32	100
<b>Position(Role in the team)</b>	Spikier	21	65.6
	Setter	11	34.3
	Total	32	100

***Volleyball players' views whether they were tested for technical/tactical talents during their selection.***

The above Table presents the responses of the volleyball players who participated in the study. Players gave different responses on whether they were tested for technical/tactical talents during the selection processes. As it can be inferred from the table, all (100%) of the participants revealed that they were not tested for their talent in ball handling technique. On the other hand, 26(81.25%) of the players explained that they were tested for their talent in passing technique. However, 6(18.75%) stated that they were not tested for their talent in passing technique during selection process. Concerning spiking technique, 20(62.25%) participants confirmed that they were tested for their talent in spiking technique. Whereas, 12(37.50%) revealed that they weren't tested for spiking technique when they were selected. With respect to basic consistency, all (100%) participant players attested that they were not tested for their talent in basic consistency. The majority (90.62%) of the participants indicated that they were not tested for their talent in learning new skill quickly. Contrary to this, some participant players 3(9.37%) confirmed that they were tasted for their talent to learn new skills quickly.

The above quantitative findings clearly show that coaches of the volleyball projects considered the spiking and passing techniques during selection of project volleyball players and consequently they tested these qualities of the selected volleyball players. In line with these findings, coaches from Adiarkayworeda also revealed that they apply, though to some extent, common test that have scientific bases.

On the contrary, the table indicates that coaches do not apply tests of ball handling, basic consistency and learning new tasks quickly. This implies that coaches do not consider these technical qualities of the volleyball players during selection. In supporting these findings, coaches from Dembiaworeda explained the following:

I am not qualified and trained trainer rather I give trainings simply based on my experience. Moreover, I have never been given training chances. Woreda leaders don not support and give supervision to sport sector. Thus, I simply select project players without scientific criteria and there is no selection manual (COTWO,Kolla Diba,7/4/2016).

However, empirical findings from Falk et al. (2004) and Bloom Field (1994) argued that talent identification in any sport especially amongst young participants is of importance to make sure players are guided to the kind of sport or specific event which will suit them best.

Thus, from the above findings of this study, it is easy to understand that technical/tactical variables were not given appropriate consideration during the selection of project volleyball players. This potentially affects the success of the volleyball players in particular and the volleyball sport development in general. More it would be meaningless to expend scarce and limited resources to volleyball projects which do not consider the crucial role of talent identification practice in the overall volleyball success.

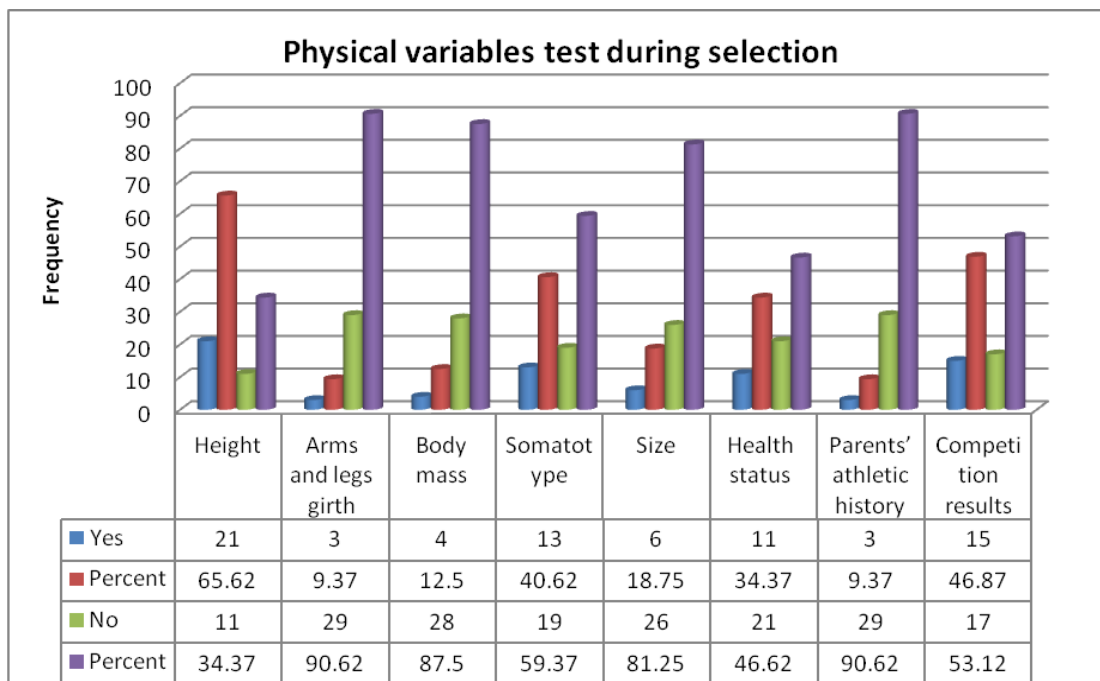
Volleyball players' views whether they were tested for physiological variables during their selection

Item	Yes	Percent	No	Percent	Total
Coordination	0	0	32	100	32
Reaction speed	0	0	32	100	32
Ability	6	18.75	26	81.25	32
Strength	0	0	32	100	32
Power	0	0	32	100	32
Balance	0	0	32	100	32
Flexibility	0	0	32	100	32
Endurance	0	0	32	100	32
Speed(general)	1	3.12	31	96.87	32
Vision or hand and eye coordination	17	53.12	15	46.87	32

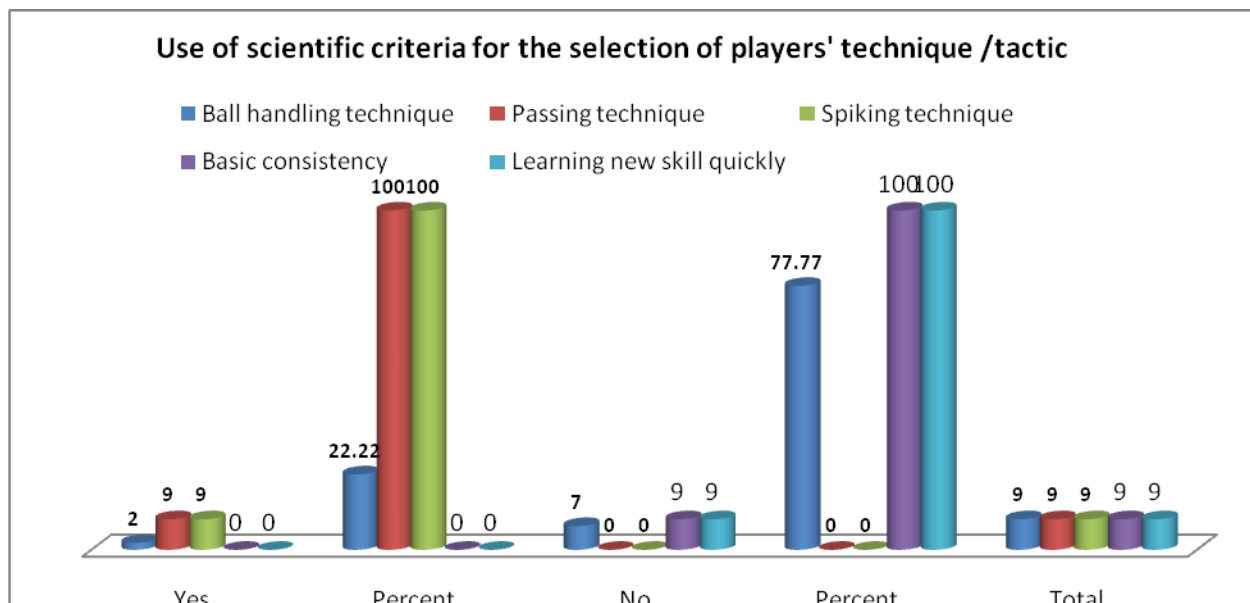
Item	Yes	Percent	No	Percent	Total
Decision making	11	34.37	21	65.62	32
Problem solving	3	9.37	29	90.62	32
Relationship with coaches and teammates	15	46.87	17	53.12	32
Acceptance of rules	13	40.62	19	59.37	32
Desire to compete	21	65.62	11	34.37	32
Determination	1	3.12	31	96.87	32
Self confidence	12	37.5	20	62.5	32
Motivation	24	75	8	25	32
Game intelligence	0	0	32	100	32
practice focused	0	0	32	100	32

Volleyball players' views whether they were tested for psychological variables during their selection.

***Volleyball players' views whether they were tested for physical variables during their selection.***



Volleyball coaches' views whether they used scientific criteria for players' technical/ tactical talents during selection.



The above figure indicates the responses of volleyball coaches whether they applied scientific selection criteria when they selected players of volleyball projects. As per to the results talents indicated in the table, 2(22.22%) coaches confirmed that they tested the ball handling talents of volleyball players when they selected them. However, the majority (77.77%) of participant coaches revealed that they did not test the ball handling of players during selection. Looking on passing technique, all (100%) attested that they tested volleyball players for their talent in passing technique during selection. When we see spiking technique, it is like the passing technique i.e. all (100%) participated coaches assured that they tested players for passing talent during selection. With respect to basic consistency and learning new skills quickly, all (100%) coaches confirmed that they did not test players for both talents.

Findings from volleyball coaches regarding technical and tactical talent identification practice coincide with the volleyball players. Thus, the above findings attested that volleyball coaches do not apply tests of technical and tactical variables during selection.

Regarding the positive outcomes gained as result of the implementation of some of the talent identification criteria during selection, coaches and sport experts made clear that they are able to become effective in relatively short period of time, they are able to get some volleyball players who represent their word as at zone and regional competitions, they are able to promote the volleyball sport, they are able to get some players that replace the previous players of volleyball projects, they are able to secure good results at zone and regional volleyball competitions and they are able to reduce the high number of dropouts from the projects are the major positive outcomes gained.

Regarding the negative outcomes encountered as result of the impracticality of most of the talent identification criteria during selection, coaches and sport experts made clear that they became unable to produce enough number of volleyball players that compete at national level, they cannot get enough number of new players that replace the previous ones, occurrence of irregular attendance to trainings by volleyball players, occurrence of frequent disagreement between coaches and players, occurrence of physical injuries to some of the players during competitions, absence of international standards in most volleyball teams and irregular competition results are the major negative outcomes.

Observing on the challenges that prohibit the implementation of talent identification criteria in the selection of north Gondar volleyball project players, coaches and sport experts notified that material constraints, lack of training opportunities, lack of trained professionals, lack of standardize selection manuals, skill/knowledge gap form coaches, inability of political leaders to support the sport sector up to the required level, lack of sport facilities and cultural imposition like the prohibition of girls to participate in sport activities by their families are the major challenges facing the implementation of scientific talent identification criteria during selection.

## Conclusion

Overall The practice of talent identification during the selection of potential players in every type of sport reduces the costs of time, labor and resources. Moreover, this practice could make the sport industry more likeable by the sport fans. Volleyball sport is one of the popular sports around the world. The selection of talented volleyball athletes should be one of the prerequisite activities in the building of competent volleyball team. However, as much literature pointed out, the practice of talent identification is very much limited in many parts of the world. To this end, since its initial, this study has been assessing the practice of talent identification in the selection of volleyball players in North Gondar under fifteen volleyball projects. The study also tried to see the positive and negative outcomes of the practicality or impracticality of talent identification criteria during selection process and the challenges encountered by coaches and sport experts in their effort to implement scientific talent identification criteria in selection of volleyball players for North Gondar under fifteen volleyball projects. Using questionnaire and semi-structured interview, data were collected from project players, coaches and sport experts of the selected woredas.

Results of the study indicated that most of the talent identification criteria represented by technical and tactical, physiological, psychological and physical variables were not considered by coaches and sport experts during the selection of volleyball players. However, this does not mean that coaches and sport experts fully neglected those selection criteria because results of the study also assured that technical and tactical variables such as passing and spiking techniques, physiological variables such as vision or hand and eye coordination, psychological variables such as decision making, relationship with coaches/ teammates, desire to compete, acceptance of rules, self-confidence, and motivation and physical variables such as height, somatotype and health status were considered during the selection of players in the indicated volleyball projects. The study has also identified some of the positive outcomes gained from the implementation of some of talent identification criteria. Volleyball teams' success in short period of time, getting some volleyball players who represent at zone and regional competitions, promoting the volleyball sport, getting some player who can replace the previous players of the volleyball projects, securing good results from competitions at zone and regional level and being able to reduce high number of dropouts from volleyball projects are among the positive outcomes achieved as result of the implementation of some of the talent identification criteria during selection. On the other hand, results of the study indicated some of the negative outcomes occurred due to the impracticality of most of the talent identification criteria during selection. Inability to produce enough number of volleyball players that compete for national championship, failure to get enough number of new volleyball players that can replace the previous project players, occurrence of irregular attendance to trainings by volleyball players, occurrence of frequent disagreement between coaches and players, occurrence of physical injuries to some of the players during competitions, absence of international standards in most volleyball teams and irregular competition results are some of the negative outcomes observed due to the impracticality of most of the scientific selection criteria during selection. Last but not least, results of the study also revealed the major challenges volleyball projects faced when trying to implement scientific talent identification criteria during players' selection. Material constraints, lack of training opportunities, lack of trained professionals, lack of standardize selection manuals, skill/knowledge gap from coaches, inability of political leaders to support the sport sector up to the required level, lack of sport facilities and cultural imposition like the prohibition of girls to participate in sport activities by their families are the major challenges facing the implementation of scientific talent identification criteria during selection at North Gondar under fifteen volleyball projects.

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## Occurrence And Patterns Of Injuries Among Leisure Time Runners In Gondar Town, North West Ethiopia, 2018

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### Abstract

Background: Running is one of the most popular physical activities enjoyed by people around the world. The consequence of the growing running popularity is the increase of musculoskeletal injuries. Objectives: To determine the prevalence of volleyball injuries sustained among recreational runners, to identify the sites, nature and cause of injuries sustained among recreational runners and to identify the intrinsic and extrinsic factors associated with the injuries sustained among recreational runners. Method: A quantitative research, retrospective study design was used for this study. The subjects of the study were recreational runners of Gondar town. A total of 300 (132 female & 168 male) runners participated and completed the questionnaire. Results: A total of 106 injuries occurred during the study period. Of these, 58.5% injuries were happened during competition, 33.96% during training and, 7.55% of the injuries were during the execution of warming up. Knee, foot and ankle were the most affected anatomical sites. Frequently sustained types of injuries were Tendonitis, muscle strain and abrasion. Conclusion: The prevalence of musculoskeletal running-related injuries over the last 6 months was 35.33%. High running experience was associated with the absence of musculoskeletal running-related injuries. Physical alignment (Large Q-angle), absence of preventive exercise, lack of warming up and use of uncomfortable running shoe and socks were the intrinsic and extrinsic factors of running related musculoskeletal injuries. Key words; Injuries occurrence; prevalence, Athletics, Recreational running,

### Introduction:

Running is one of the most popular physical activities enjoyed by people around the world (Van Middelkoop M, 2008) and the number of runners has grown substantially over the past decades. People seeking a healthier lifestyle through weight control and improved exercise capacity frequently choose running, as this has been considered to be of low cost and can be easily implemented. (Taunton JE, 2003). Although the exact roots of Athletics in Ethiopian cannot be retraced back accurately, it is widely believed that the sport was widely practiced in schools and military camps before 1897. The sport was limited to these parts of society only because others did not have access to equipments used for competitions or was not organized in a manner that motivated progress. More importantly, running has many beneficial effects including a reduction of risk factors for cardiovascular diseases (Zemper, 1989). Despite these health benefits, running injuries are common, with incidence rates ranging between 18.2% and 92.4%, (Mechelen, 1995; Starke C, 2001; Van Middelkoop M, 2008) or 6.8–59 injuries per 1000 hours of exposure to running. (J. G. Bovens AM, Vermeer HG, Hoeberigs JH, Janssen MP, Verstappen FT., 1989; Buist I, 2010; Lun V, 2004; Lysholm J, 1987; PT., 1997; Rauh MJ, 2006)

Because of the expected positive health effects of physical exercise, more and more people are becoming stimulated to increase their physical activity. Running is one of the most accessible sports and, probably for this reason, is practiced by many persons all over the world. In Ethiopia running is a day to day activity of all individuals for recreational, physical fitness and competitive purposes. Globally, the Ethiopian Athletics Federation is one of the leading member federations of IAAF especially in long and middle distances. Continentally, in recent times the Ethiopian athletes are appearing in short distances and field events with medals.



However, besides the positive health, recreation and competitive effects of running there are some concerns about the high incidence of running injuries, especially to the lower extremities. Various studies have reported annual rates of lower extremity injuries of runners (Bennell KL, 1996; Jakobsen BW, n.d; Lun V, 2004; Macera CA, 1989; Maughan RJ, 1983; Taunton JE, 2003; Wen DY, 1998) and a substantial number of these running injuries occur in preparation for or during a long-distance running event such as a marathon run (Jakobsen BW, n.d) (Kretsch A, 1984; Maughan RJ, 1983; Van Tiggelen, 2008).

### Subjects, materials and methods

The study was conducted on Gondar Town recreational runners from 1 January 2016 to 15 June 2016. The season estimated to last 24 weeks. A total of 350 recreational runners were invited to participate, but in the current study 300 (132 female & 168 male) runners participated and completed the questionnaire, which yielded a response rate of 85.7%. The response rate among the males was higher at 88.4% (168/190) compared to 82.5% (132/160) among the female runners. Of the participants, 44% (n=132) were females and 56% (n=168) were male runners. A quantitative research, retrospective study design was used for this study

### Data collection and definition of the injury

A structured interviewer-administered questionnaire was prepared by the investigators by reviewing different literatures and was used as a data collection instrument. The injury prevalence, the characteristics of the injuries (severity, diagnosis) and the anatomical location of the musculoskeletal injuries that occurred during training and competition in the study period were recorded retrospectively. For the purpose of this study, an injury was defined as, any mishap that occurs during training, warm up and/or competition that requires medical attention (Van Middelkoop M, 2008) and/or cause the player to be absent from sport participation either in a training or competition (Bahr, 2003).

**Statistical analysis:** The collected data from the participants were ethically secured. Data was checked, entered and cleaned using Epi-info version 17 statistical software and then transferred to SPSS (Statistical Package for Social Science) version 16 for further analysis. Frequencies and cross tabulation was used to summarize descriptive statistics of the data and table and graphs were used for data presentation. Odds ratio (OR), and relative risk (RR) with 95% confidence interval and p-value < 0.05 was used to show association between explanatory variables and dependent variable. Variables having p-value of less than 0.05 has been considered as significantly associated with the dependent variable.

### Results

**Injury rate:** A total of 106 injuries occurred during the period from January, 20016 to June, 2016, giving an injury prevalence of 0.35 per player. Of these the prevalence of injuries on females was 0.34 and on males the prevalence was 0.36. In the present study 35.33% (106/300) recreational runners sustained an injury during the season on both competition and training. Of those who sustained injuries, 42.45% (45/106) were females and 57.55% (61/106) were males. 194 runners (64.67%) did not sustain any injuries. The odds ratio (OR) of male injuries comparison female was 1.1022(95%CI: 0.6834 to 1.7775) p=0.67>0.05, the rate of injuries on males seemed more, but there is no significant difference between male and females.

Variables	Females(N=132)	Males(N=168)
Age (Years), Mean( $\pm$ SD)	21.96[ $\pm$ 6.95]	25.08[ $\pm$ 9.9]
Stature of the participant(cm), Mean( $\pm$ SD)	160.68[ $\pm$ 4.8]	169.6[ $\pm$ 7.37]
Weight of the participant(kg), Mean( $\pm$ SD)	63.07[ $\pm$ 9.88]	69.33[ $\pm$ 7.97]
BMI(kg/m <sup>2</sup> ), Mean( $\pm$ SD)	21.95 ( $\pm$ 3.19)	22.16 ( $\pm$ 3.21)
Running experience of the participant	3.31[ $\pm$ 2.12]	4.95[ $\pm$ 4.45]

**SD = standard deviation; BMI = body mass index.**

Variables	Females(N=132)	Males(N=168)
Right leg Q-angle( $^{\circ}$ ), mean ( $\pm$ SD)	7.66[ $\pm$ 2.7]	7.23[ $\pm$ 3.31]
Left leg Q-angle( $^{\circ}$ ), mean ( $\pm$ SD)	8.03[ $\pm$ 2.56]	7.42[ $\pm$ 3.22]
Right side hip flexion( $^{\circ}$ ), mean ( $\pm$ SD)	8.83[ $\pm$ 3.67]	8.96[ $\pm$ 3.66]
left side hip flexion( $^{\circ}$ ), mean ( $\pm$ SD)	8.68[ $\pm$ 3.7]	8.81[ $\pm$ 3.78]

**Q-angle = quadriceps angle; SD = standard deviation.**

Table 1 Socio-Demographic Characteristics of Runners (n=300)

The mean age of female runners was 21.96( $\pm$ 6.95) and males were 25.08( $\pm$ 9.9). The average height of the recreational runners was 160.68cm ( $\pm$ 4.8) for females and 169.6cm ( $\pm$ 7.37) for males. Regarding the mean body mass of the participants during the study period was 63.07kg ( $\pm$ 9.88) for females and 69.33kg ( $\pm$ 7.97) for males. In relation to body mass index the mean BMI of females was 21.95( $\pm$ 3.19) and for males 22.16( $\pm$ 3.21). Moreover, the mean running experience of the participants was 3.31 years ( $\pm$ 2.12) for females and 4.95 years ( $\pm$ 4.45) for males.(Table 1)

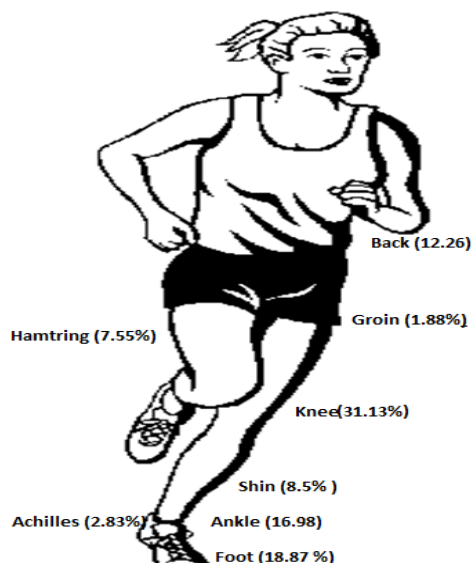


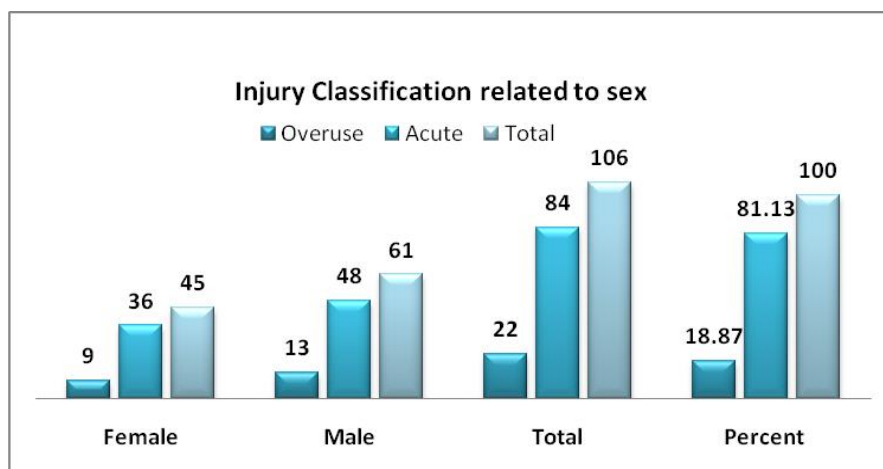
Figure 1 The rate of injuries In terms of Body part

Injuries according to body parts (calculated from the total number of injuries) occurred; knee, foot and ankle was at the highest rate 31.13% (33/106), 18.87%(20/106) and 16.98%(18/106) respectively followed by injuries in the back 12.23% (13/106), shin 8.5% (9/106) and hamstring 7.55% (8/106)(figure 1).

Variables	Females	Percent	Males	Percent	Total	Percent
Tendonitis	10	22.23	9	14.76	19	17.92
Strain/rupture	5	11.12	21	34.43	26	24.53
Sprain	5	11.12	9	14.75	14	13.2
Blisters	6	13.14	8	13.11	14	13.2
Shin splint	6	13.14	3	4.92	9	8.5
Abrasion	7	15.56	8	13.11	15	14.15
Dislocation	6	13.14	3	4.92	9	8.5
<b>Total</b>	<b>45</b>	<b>100</b>	<b>61</b>	<b>100</b>	<b>106</b>	<b>100</b>

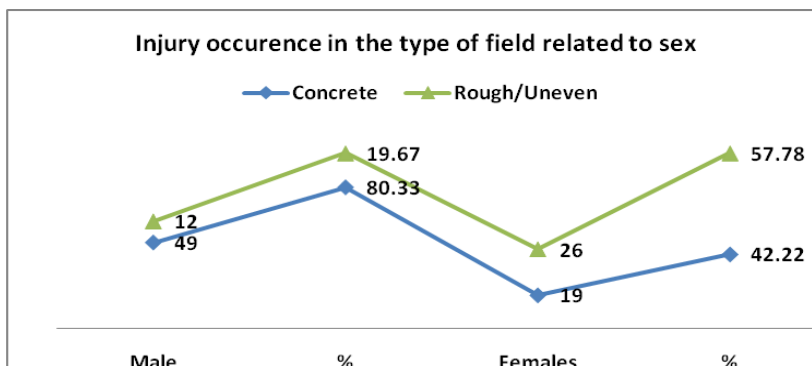
**Table 2 Rate and Diagnose of Injury Related to Sex**

Regarding the type of injuries diagnosed, 24.53 % (n=26) injuries were strain/rupture followed by tendonitis, 17.92% (n=19) and abrasion 14.15% (n=15). In comparison with the rate and type of injuries, female players were exposed more for tendonitis (n=10, 22.22%) and males (n=21, 34.43%) by strain. (Table 1) From the total injuries sustained in the season (n=106), 81.13 % ( 86/106) were acute. Of these, 33.96 % ( 36/106) were on females and 47.17 % ( 50/106) were on male runners. On the other hand, 18.87 % ( 20/106) injuries were overuse, 8.5 % ( 9/106) on female and 10.38 % ( 11/106) on males. (fig.5) The odds ratio (OR) of males acute injuries versus females is 0.5455 (95%CI, 0.2245 to 1.3253)  $p=0.1808 > 0.05$ , no significance difference observed. The probability of males for acute injuries was 57.14%, and 42.86% for females, with a relative risk of 1.3333 (95%CI, 0.8925 to 1.9919)  $p=0.1601 > 0.05$ , no significance difference between the two sexes. (figure 5)



**Figure 2 Injury Classification In terms of sex**

From the injured male participants, n=49 (80.33%) of them were injured on concrete or asphalt and n=12 (19.67%) were injured on rough/uneven running surfaces. On the other hand, from 45 injured female recreational runners, n=26 (57.78%) injured on rough or uneven running surface while n=19 (42.22%) of male participants were exposed for injury on concrete or asphalt surfaces.



### Graph 1. Injury occurrence on the type of field related to sex

From the total of blister injuries on foot recorded (n=14) in the season, 9/14(64.29%) of participants used acrylic fiber made socks and the remaining 5/14(35.71%) were used socks made from cotton fiber.

Odds ratio of blister injuries due to acrylic fiber made socks and cotton fiber made socks was 3.24(95% CI: 0.6904 to 15.2054)  $p=0.1361>0.05$ , statistically not significant. On the other hand, 38.68%(n=41) from the total number of injuries recorded participants were not wear comfortable running shoes at the time of injury, the rest 61.32%(65/106) were used comfortable sport shoes.

The odds ratio of female injured players who used comfortable running shoes at the time of injury versus male counterparts was 3.5136(95%CI: 1.5495 to 7.9764),  $P=0.0026<0.05$ , statistically significant association was observed.

The probability of females injuries due to uncomfortable running shoes was 55.56%, and 26.23% for males, with a relative risk of 2.1181(95%CI,1.2906 to 3.4760) $p=0.0030<0.05$ , significance difference between the two sexes was observed. Moreover, females were two times more likely to be injured than male because of uncomfortable running shoes.

**Table 3 Running Components related to sex**

Training Components	Male		Female	
	Injured	Non-injured	Injured	Non-injured
Running Experience(year),mean(SD)	4.85(±4.29)	5.15(±4.75)	3.23(±1.72)	3.49(±2.77)
Frequency of running per week(session ),mean(SD)	3.34(±0.77)	3.42(±0.88)	3.84(±0.53)	3.73(±0.58)
Weekly mileage(km),mean(SD)	11.39(±0.82)	11.35(±0.72)	13.63(±0.86)	12.68(±0.81)
<b>SD = standard deviation</b>				

Runners addressed specific components of their running conditioning on set weekdays, thereby prescribing a rigid weekly training schedule and enabling me to monitor their training habits (Tables 3). In addition to the prerequisite running training, participants were required to report whether they performed any cross-training. The female runners ran 24 weeks per a half season including 3.32 sessions per week (SD  $\pm 2.13$ ), same as females the male runners ran 24 weeks per a half season including 3.4 sessions per week (SD  $\pm 0.84$ ). Regarding cross-training activities, 28 female runners engaged in resistance strength training, while 88 male runners engaged in resistance strength training , aerobics (n=30). Male and female runners who cross-trained were not sustained running injuries. In relation to the mean weekly mileage, non-injured male runners (n=107) was 11.35km ( $\pm 0.77$ ), and the injured (n=61) runners was 11.39km ( $\pm 0.76$ ) on the other hand the injured females (n=45) weekly mileage was 13.63km ( $\pm 0.86$ ) and the non-injured (n=87) was 12.68km ( $\pm 0.81$ ).The odds ratio of male weekly mileage versus females was 0.92.86(95%CI: 0.3011 to 2.8637),  $P=0.8974>0.05$ . There is no statistically significant difference.

### Discussion

The total response rate in the study was 85.7% from a sample of 300 players. The high response rate supports the validity of the study even though the small sample size limits the generalization potential of the study. The high response rate in this study is similar to previous studies (Fields KB, 2010; Jacobs SJ, 1986; Luiz C. Hespanhol Junior, 2012; T J Ellapen, 2013).

Male participation was higher (56%) than in the case of females (44%). This was similar to the study conducted by various studies (1996) (Bennell KL, 1996; Brunet ME, 1990; Canberra, 1990; Jacobs SJ, 1986). And different from a result studied by (Buist I, 2010). In relation to the age and BMI of the participants, the result in this study is lower than that of the study conducted by (Luiz C. Hespanhol Junior, 2012).

The second objective of the current study is to identify the sites, nature and cause of injuries sustained among recreational runners of Gondar Town.

Among the injured players, knee and foot/toe injuries showed the highest prevalence in the present study which correlate well with studies conducted by (Luiz C. Hespanhol Junior, 2012; T J Ellapen, 2013) other study conducted by Alexandre Dias Lopes,(2012) reported that knee (patellar tendinopathy) and ankle dorsi-flexion tendinopathy was the highest prevalent injuries.

In the present study 35.33% (106/300) recreational runners sustained an injury during the season on both competition and training. Of those who sustained injuries, 42.45% (45/106) were females and 57.55% (61/106) were males 194 runners (64.67%) did not sustain any injuries. This result is lower than that of the results conducted by (Bennell KL, 1996; Jacobs SJ, 1986; Luiz C. Hespanhol Junior, 2012). And higher than the result reported by (Buist I, 2010; Lysholm J, 1987).

In the current study, younger age in both male and female participants was high risk of sustaining an RRI. This finding is supported by other studies that conclude that increasing age was significantly related with lower incidences of RRI (Buist I, 2010; Marti B, 1988; Mechelen, 1995). A reason for this phenomenon could be "the healthy runner effect", whereby only those runners who stay injury-free continue to run (Buist I, 2010). Other studies conclude that increasing age is a statistically significant risk factor for sustaining an RRI (J. Bovens AM, Vermeer HG, , 1989; Mechelen, 1992; Taunton JE, 2003).

In my study higher BMI is associated with sustaining an RRI in male participants. this result is similar with the study conducted by (Macera CA, 1989). Macera CA, et.al., added that, heavier persons may have a higher risk of RRI because of the added physical stress of extra weight. Different associations between BMI and RRIs are found in the literature: (Marti B, 1988) found that lower BMI (<19.5) and higher BMI (>27) were risk factors for development of RRI.

A positive correlation between the incidence of injury and the distance run, has been the most consistently observed result in studies. In a cohort study of 1680 runners followed over a 12 month period, (Walter SD, 1989) found that injury risk was higher if individuals ran more than 40 km per week, ran more miles per day on running days, ran longer runs, ran more days per week and ran all year round. In the current study the mean weekly mileage of the injured (n=61) runners was 11.39km ( $\pm 0.76$ ) on the other hand the injured females (n=45) weekly mileage was 13.63km ( $\pm 0.86$ ). the finding of this study is not statistically significant and different from the results of other studies. Supporting Walters' (1989) finding are the results of a study of 451 runners involved in the 10,000 meter National Championships in New York (Jacobs SJ, 1986). Based on the information the runners gave in a self-report questionnaire there was a significantly greater proportion of injured runners than non-injured runners who ran more than 30 miles per week (48% versus 67%,  $p < 0.001$ ). Running surfaces can vary from sand to concrete. As the impact forces from the gait cycle can be two to three times body weight, it is generally believed that running on hard surfaces increases mechanical shock thereby overloading joints and tendons. In the current study more male recreational runners were injured on asphalt or concrete running surfaces (49/61) on the contrary more females were injured on uneven or gravel surfaces (26/45). In my study there no correlation between running surface and running injury was seen. This is similar with studies conducted by (Brunet ME, 1990; Jakobsen BW, n.d).

## Conclusion

The prevalence of musculoskeletal running-related injuries over the last 6 months was 35.33%. The most frequent injuries reported by the runners of this study were tendinopathies and muscle strain/rupture followed by abrasion and the knee and foot/toe was the most affected anatomic sites. Physical alignment (Large Q-angle), absence of preventive exercise, lack of warming up and use of uncomfortable running shoe and socks were the intrinsic and extrinsic factors of running related musculoskeletal injuries. High running experience was associated with the absence of musculoskeletal running-related injuries. Majority of injuries occurred during competition (great run at Gondar).

## Study limitations

This study had some limitations, such as a small sample size which might not be considered representative. In addition all data were collected using self-reported questionnaires, which could have influenced our results due to some sort of recall bias.

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## **A Comparative Study On Individual Time Trial Performances Of National Road Cycling Championship Event**

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### **Introduction:-**

In the late 1800s professional road cycling was very popular especially in Europe and America. Many clubs were formed around the world. Road Cycling was an event in the first modern day Olympics held in 1896 where riders completed two circuits of the Marathon running course. Cycling is a poor man's transport, hobby of rich man and medical activity for the old. In most of the cases, a child life starts with a cycle, two wheeled & tri-wheeled irrespective of his/her status of being from a rich, middle or poor family, hence, it may be mentioned that the cycling activity starts in the beginning of childhood and it becomes a sports at 10-12 years of age. Cycling as a sport was introduced in India with the efforts of Sh. Janki Das in mid thirties. The world's most famous cycling race, The Tour de France, began in 1903. It was a 2,500 Km. race taking place across 19 days, in six stages with riders expected to ride day and night. American, Lance Armstrong, has won the Tour de France seven years in row. Cycling Federation of India organizes the national road championship once in year for all age groups but to have better talents to improve further, separate national championship for Elite, junior, sub-junior and youth category. Cyclists have opportunity to participate separate in road national championship which were being held regular every year.

### **Individual Time Trial:-**

Individual time trial was a one event of road cycling. The start of the time trial is staggered so that a rider takes off every 120 seconds. If, during the time trial, a competitor reaches the rider in front he or she must pass the rider leaving a gap between them of at least two meters. The rider with fastest time wins the time trial race.

### **The Cycle:-**

Road cycle look similar to the bikes you see being ridden around town. They can be made of steel, aluminum, titanium or carbon fiber. They generally weight between 8kg to 10kg and have brakes and gears to deal with different terrains and closeness of other cyclists. The time trail bikes are allowed to have aerodynamic handle bars. They have finer frames, a shorter wheelbase and drop handlebars. Being very light, they are built for speed on the road which means they are not as sturdy as other types of bike.

### **Statement of the Problem:-**

The purpose of the comparative study was to find out better individual speed performance of Elite, junior men and women groups of the national road cycling championship 2018.

### **Objective of the Study:-**

The main objective of the study was to find out the better speed performance of Elite men or junior men group and Elite women or junior women group of the individual time trial event in national road cycling championship 2018.

**Procedure:-**

For this study, two age groups were taken from Elite and Junior spamming in national road cycling men and women championship 2018. Elite group shall comprise riders aged 19 and above, Junior group shall comprise riders aged 17 and 18 year. The individual time trial event race distance of Elite men are 40Km., Junior men are 30Km., Elite women are 30Km., Junior women are 15Km. The individual speed performance up to ten position winners was worked out. A comparative study was done considering Elite men and Junior men individual speed performance and Elite women and Junior women individual speed performance up to ten position winners.

**Statistical Analysis:-**

The relevant data received from the results of the national road cycling championship 2018 were evaluated according event individual time and speed @ km. comprise and analysis.

**Results and Discussion:-**

In order to determine the significance of Elite men and Junior men group difference in the individual time trial event performance and Elite women and Junior women group difference in the individual time trial performance of national road cycling championship 2018. The result of individual time and speed @ km. group wise performance were compared. The comparative results are shown in table – 1 and 2.

Table – 1: Significance of difference between the Elite men and Junior men group wise individual time trial performance of national road cycling championship event

Sr. No. up to ten position winners	Elite men group			Junior men group		
	Team of Player	Time of 40 Km. Event	Speed @ Km.	Team of Player	Time of 30 Km. Event	Speed @ Km.
1	RSPB	52:58.387	45.31	RAJ	40:59.310	43.91
2	KAR	54:18.414	44.19	KAR	41:52.123	42.99
3	SSCB	54:31.401	44.02	KAR	42:00.356	42.85
4	HAR	54:39.496	43.91	MAH	42:35.273	42.27
5	RSPB	55:13.959	43.45	PUN	43:21.123	41.52
6	A.P	56:00.982	42.84	RAJ	43:29.438	41.39
7	KAR	56:59.854	42.11	HAR	44:32.689	40.41
8	MAH	57:32.972	41.70	CHD	45:13.734	39.80
9	RAJ	57:40.713	41.61	GUJ	45:18.582	39.73
10	HAR	58:06.796	41.30	MAH	45:22.334	39.67

-Viewing table -1, it seen that the Elite men group first position performance was speed @ per hours 45.31km achieved but Junior men group first position performance was speed @ per hours 43.91km., so the down speed @ per hours 1.40km. from the Elite men group.

-Viewing table -1, it seen that the Elite men group fifth position performance was speed @ per hours 43.45km achieved but Junior men group first position performance was speed @ per hours 41.52km., so the down speed @ per hours 1.93km. from the Elite men group.

-Viewing table -1, it seen that the Elite men group ten position performance was speed @ per hours 41.30km achieved but Junior men group first position performance was speed @ per hours 39.67km., so the down speed @ per hours 1.63km. from the Elite men group.

-Viewing table -1, it seen that the Elite men group up to ten position winners performance was speed @ per hours achieved better performance from the Junior men group.



Table – 2: Significance of difference between the Elite women and Junior women group wise individual time trial performance of national road cycling championship event

Sr. No. up to ten position winners	Elite women group			Junior women group		
	Team of Player	Time of 30 Km. Event	Speed @ Km.	Team of Player	Time of 15 Km. Event	Speed @ Km.
1	KER	45:22.421	39.67	M.P	24:40.582	36.47
2	MNP	46:40.187	38.57	KAR	24:41.762	36.44
3	MAH	46:47.010	38.48	ORI	24:52.920	36.17
4	MAH	47:42.073	37.73	MAH	24:53.528	36.16
5	GUJ	48:02.631	37.47	KAR	25:22.395	35.47
6	HAR	48:44.172	36.93	ASM	25:22.920	35.46
7	RSPB	48:52.244	36.83	RAJ	26:11.929	34.35
8	HAR	49:05.924	36.66	KER	26:35.892	33.84
9	PUN	49:09.704	36.61	PUN	28:11.762	31.92
10	RSPB	49:10.798	36.60	DEL	28:40.676	31.38

-Viewing table -2, it seen that the Elite women group first position performance was speed @ per hours 39.67km achieved but Junior women group first position performance was speed @ per hours 36.47km., so the down speed @ per hours 3.20km. from the Elite women group.

-Viewing table -2, it seen that the Elite women group fifth position performance was speed @ per hours 37.47km achieved but Junior women group fifth position performance was speed @ per hours 35.47km., so the down speed @ per hours 2.00km. from the Elite women group.

-Viewing table -2, it seen that the Elite women group ten position performance was speed @ per hours 36.60km achieved but Junior women group ten position performance was speed @ per hours 31.38km., so the down speed @ per hours 5.22km. from the Elite women group.

-Viewing table -2, it seen that the Elite women group up to ten position winners performance was speed @ per hours achieved better performance from the Junior women group.

#### **Conclusion:-**

The analysis of data revealed that there is a significant difference in Elite and Junior men and women group wise performances in national road cycling championship 2018. It is established that various categories of cyclist different levels of relative strength. This may be probably due to the different nature of training and pre-requisite components for cyclist. Such results may be due to other factors such as different body type, different in the body composition, different geographic backgrounds, and cycle etc.

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## Selected Performance Training Components Association with Boxing Players Performance

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### Abstract

The purpose of this study was relationship between performance training components and Boxing players performance. The 82 male boxing players were selected Inter-District Level representation in Andhra Pradesh on non-randomly by purposive sample was used. Karl Pearson coefficient of correlation was used to Analysis of the collected data on Performance Training Components are hand complex reaction ability, (0.585\*), dynamic balance, (0.364\*), dynamic Flexibility(0.259\*), aerobic ability(0.239\*), strength endurance(0.462\*), agility(0.299\*), speed (0.379\*), accuracy(0.271\*) hand explosive strength(0.573\*)coefficient of correlation with Boxing players performance was positively with significant level 0.05. Remaining Training Components not correlated on this current study. **Key words:** Training Components, Performance, Boxing.

### INTRODUCTION

Combat sports has been reported that might occupy affirmative impact on physical fitness (Cox, 1993; Woodward, 2009). The impact of combat sports exercise was examined in some researches on young people (Fukuda et al., 2013; Violan, Small, Zetaruk, & Micheli, 1997) adolescents (Fong & Ng, 2012; Melhim, 2001), older people (Brudnak, Dundero, & Van Hecke, 2002; Pons Van Dijk, Lenssen, Leffers, Kingma, & Lodder, 2013) and disordered persons (Fong, Tsang, & Ng, 2012). The majority of these researches informed that combat sports practice included a considerable development in both physical fitness and motor competence. 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).

Fitness is the ability to meet the demands of a physical task. Basic fitness can be classified in four main components: Strength, Speed, Stamina and Flexibility. However, exercise scientists have identified nine components that comprise the definition of fitness: Strength, Power, Agility, Balance, Flexibility, Local Muscle Endurance, Strength Endurance and Co-ordination. All the nine elements of fitness Cardiac Respiratory qualities are the most important to develop as they enhance all the other components of the conditioning equation. Boxing is combative of applied athletics and it requires well proportionate physique and great amount of physical fitness level. Training components generally classified two categories one is health related physical fitness components and skill related training components which both were so much useful for making healthful wellbeing and develop of specific game /sport fitness bodies players but specific or performance training components may would be developed good conditioning of fitness body and to perform top performance in a specific competition.

## Methodology

**Purpose of the Study:** This study was decided to the Performance Training Components relation with Boxing player's performance.

**Selection of the Subjects:** 82male Boxing players were selected from Inter District level representation of Andhra Pradesh, on non-randomly by purposive sample was used.

**Figure-I: Selection of the Performance Training Components**

S. No	Performance Training Components	Test
1	Hand Complex Reaction Ability	Nelson Reaction Test
2	Hand Simple Reaction Ability	Nelson Reaction Test
3	Dynamic Balance	Balance Test
4	Static Balance	Balance Test
5	Dynamic Flexibility	Flexibility Test
6	Static Flexibility	Sit and Reach Test
7	Accuracy	Accuracy Test
8	Hand Explosive Strength	Shotput Throw
9	Maximum Strength	1rm Test
10	Aerobic Ability	Margarian Kalamon
11	Strength Endurance	Push Ups
12	Endurance	600 Yard Run
13	Agility	Shuttle Run
14	Speed	30 Mts Run

## Collection of the Data and Tools

The data was collected by administrating the standard procedures for taking Performance Training Components as well as Boxing player's performance and tools were used stopwatches, and Flexible measuring tape for flexibility. The score is recorded time in seconds and remaining the nearest one tenth of the seconds.

## Statistical Analysis and Discussions

In order to find out the relationship of Performance Training Components with Boxing performance with the Karl Pearson coefficient of correlation is used and testing the Hypothesis the level of confidence is 0.05.

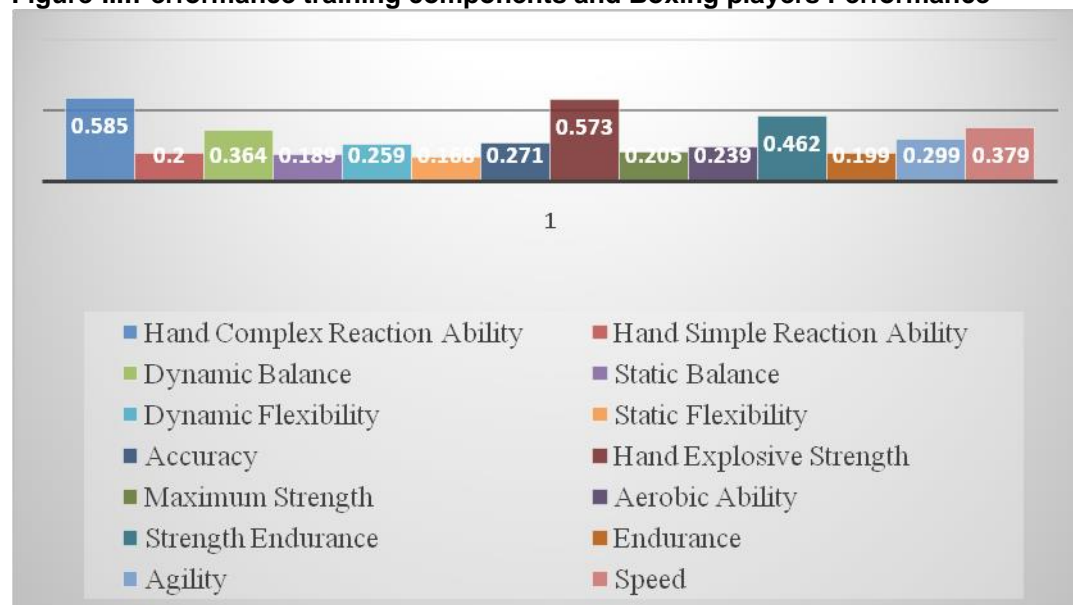
**Figure-II: Performance Training Components association with Boxing playing performance**

S. No	Performance Training Components	Coefficient of Correlation 'r'
1	Hand Complex Reaction Ability	0.585*
2	Hand Simple Reaction Ability	0.200
3	Dynamic Balance	0.364*
4	Static Balance	0.189
5	Dynamic Flexibility	0.259*
6	Static Flexibility	0.168
7	Accuracy	0.271*
8	Hand Explosive Strength	0.573*
9	Maximum Strength	0.205
10	Aerobic Ability	0.239*
11	Strength Endurance	0.462*
12	Endurance	0.199
13	Agility	0.299*
14	Speed	0.379*

N=82, r.05 (80) =0.217, \*Significant at 0.05 level.

An analysis of the above table indicates that Boxing performance is significantly related to performance training components are hand complex reaction ability, (0.585\*), dynamic balance, (0.364\*), dynamic Flexibility (0.259\*), aerobic ability (0.239\*), strength endurance (0.462\*), agility (0.299\*), speed (0.379\*), accuracy (0.271\*) hand explosive strength (0.573\*) as obtained values of correlation were greater than the value of  $r = 0.217$  the correlation to be significant at 0.05 performance training components Endurance, Maximum Strength, Static Flexibility, Static Balance and Hand Simple Reaction Ability as their correlation values are less than the value of  $r = 0.217$  need for significance at 0.05 level of confidence.

**Figure-III: Performance training components and Boxing players Performance**



As for the results finally, the study exposes that Boxing performance ability is significantly related to performance training components are hand complex reaction ability, (0.585\*), dynamic balance, (0.364\*), dynamic Flexibility (0.259\*), aerobic ability (0.239\*), strength endurance (0.462\*), agility (0.299\*), speed (0.379\*), accuracy (0.271\*) hand explosive strength (0.573\*) As per the analysis my suggestion to the coaches, physical directors, physical education teachers, physical instructors to concentrate on the above performance training components while selecting or screening for Boxing players in a basic level. It may give effective and good performance in a specific competition.

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## Effects Of Aerobic Training With Moringa Oleifera On Resting Heart Rate, Mean Arterial Pressure, Triglycerides And Testosterone Among College Men Athlete

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### Abstract:

The purpose of the study was to investigate “Effects Of Moringa Oleifera With Aerobic Training On Selected Lipid Profile Status And Testosterone Among College Men Athlete”. Moringa Oleifera: Many studies show that Moringa oleifera may lead to modest reductions in blood sugar and cholesterol. It may also have antioxidant and anti-inflammatory effects and protect against arsenic toxicity. Moringa leaves are also highly nutritious and should be beneficial for people who are lacking in essential nutrients. Selection Of Variables: The following variables were selected for this study. Independent Variables: 1. Resting Heart Rate, 2. Mean Arterial Pressure, 3. Triglycerides 4. Testosterone. II. Independent Variables: 1. Aerobic Exercise 2. Moringa Oleifera with Aerobic Exercise 3. Control Group. Experimental Design: The subject were selected for this study through the random group design consisting of pre and post test, forty five college men athletes randomly divided into three groups, the group was assigned as an experimental group and control group. The groups are 1. Moringa Aerobic Exercise, 2. Oleifera with Aerobic Exercise, 3. Control Group. Training Schedules And Supplementation: During the training period, the experimental group underwent their walking program period of eight weeks for all days with Moringa Oleifera. The experimental group underwent walking for forty five minutes of duration in evening hours between 4:30 to 5:30 p.m for seven days per week. Statistical Technique: Analysis of Covariance statistical technique was used, to test the significant difference among the treatment groups. If the adjusted post-test results were significant, the scheffe's post hoc test was used to determine the paired mean significant difference. Thirumalaisamy R. (2004). After incorporate statistical technique, it was found that a significant decrease in Resting Heart Rate, Mean Arterial Pressure, Triglycerides and greater increased in testosterone in experimental group II (Moringa Oleifera with aerobic Training), due to eight weeks of Natural Supplementation with aerobic training than that aerobic exercise group.

**Moringa Oleifera:** Many studies show that Moringa oleifera may lead to modest reductions in **blood sugar** and **cholesterol**. It may also have **antioxidant** and **anti-inflammatory** effects and protect against arsenic toxicity. Moringa leaves are also highly nutritious and should be beneficial for people who are lacking in essential **nutrients**.

**Health Benefits Of Moringa Oleifera: Boost Testosterone:** One of the biggest marketing claims made by manufacturers of moringa supplements is its ability to increase testosterone levels, boost erections and enhance sexual performance. Essentially that it is an aphrodisiac. **Moringa Oleifera on Lower Cholesterol:** Modern societies are increasingly suffering from high amounts of cholesterol in the blood. Cholesterol is a big problem because it is linked to an increased risk of heart disease. Many plant foods such as chia seeds, flaxseeds, almonds and oats are found to effectively reduce cholesterol. Moringa also has similar cholesterol-lowering effects. In a particular study Moringa has been found that Moringa possesses a hypolipidaemic effect which reflects a decrease in the lipid profile. In another study it was found that Moringa Oleifera leaf powder along with high-fat diet decreased the high-fat diet-induced increases in serum, liver, and kidney cholesterol levels by 14.35%, 6.40% and 11.09% respectively.

Statement Of The Problem: The purpose of the study was to investigate “Effects of Aerobic Training With Moringa Oleifera on Resting Heart Rate, Mean Arterial Pressure, Triglycerides And Testosterone Among College Men Athlete”.

Selection Of Variables: The following variables were selected for this study. I.DEPENDENT VARIABLES: 1. Resting Heart Rate, 2.Mean Arterial Pressure, 3.Triglycerides 4.Testosterone.II.INDEPENDENT VARIABLES: 1. Aerobic Exercise 2. Moringa Oleifera with Aerobic Exercise 3.Control Group

EXPERIMENTAL DESIGN: The subject were selected for this study through the random group design consisting of pre and post test, forty five college men athletes randomly divided into three groups, the group was assigned as an experimental group and control group. The groups are 1. Aerobic Exercise, 2.Aerobic Exercise with Moringa Oleifera 3.Control Group

TRAINING SCHEDULES AND SUPPLEMENTATION: During the training period, the experimental group underwent their walking program period of eight weeks for all days with Moringa Oleifera. The experimental group underwent walking for forty five minutes of duration seven days per week. Statistical Technique: Analysis of Covariance statistical technique was used, to test the significant difference among the treatment groups. Thirumalaisamy R. (2004).

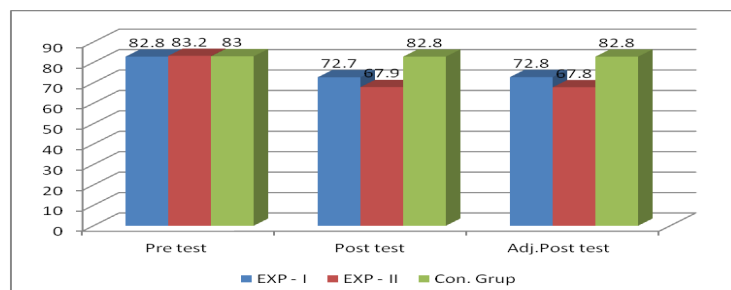
Computation Of Analysis Of Covariance: The following tables illustrate the statistical results of Effects Of Moringa Oleifera With Aerobic Training On Selected Lipid Profile Status And Testosterone Among College Men Athlete and ordered adjusted means and the difference between the means of the groups under study.

#### COMPUTATION OF ANALYSIS OF COVARIANCE OF RESTING HEART RATE

Means	EXP - I	EXP - II	Con.	S.V	S.S	D.F	M.S	O.F	T.F
Pre test Mean	82.8	83.2	83	B	1.2	2	0.6	0.07	2.72
				W	344.8	42	8.2		
Post test	72.7	67.9	82.8	B	1726.9	2	863.4	102.37	
				W	354.2	42	8.4		
Adj.Post test Mean	72.8	67.8	82.8	B	1740.8	2	870.4	132.15	
				W	270.0	41	6.5		

#### DISCUSSIONS AND FINDINGS OF RESTING HEART RATE

This result indicated that the effect of Moringa Oleifera with aerobic training and aerobic training had significantly reduced the Resting Heart Rate Among College Men Athlete, when compared with control group in terms of means. Further findings of the study indicated that aerobic training with Moringa Oleifera had greater reduction in Resting Heart Rate than the aerobic training.



In Experimental Group had implementing the aerobic training with Moringa Oleifera prescription is influenced the significant reduction in Resting Heart Rate, when compare to the control group. It's all because of the supplementing the natural products is influenced and converted

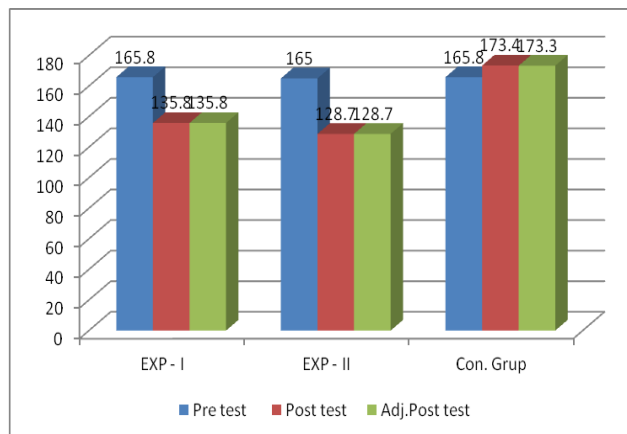
the excess cholesterol spent as energy for stamina and it avoid to formation of cholesterol in the body. So its concluded that the aerobic training with Moringa Oleifera had significantly influenced Resting Heart Rate and to avoid the unnecessary burden to the heart.

# COMPUTATION OF ANALYSIS OF COVARIANCE OF TRIGLYCERIDES

Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	165.8	165.0	165.8	B	5.9	2	2.9	0.09
				W	1361.0	42	32.4	
Post test Mean	135.8	128.7	173.4	B	17273.7	2	8636.8	424.63
				W	854.2	42	20.3	
Ad.post test Mean	135.8	128.7	173.3	B	17223.4	2	8611.7	416.99
				W	846.7	41	20.6	

**DISCUSSION ON FINDINGS OF TRIGLYCERIDES:** From these analyses, it is found that the results obtained from the experimental groups had decrease in the **Triglycerides**, when compared with one from the control group. This is due to the inclusion of Moringa Oleifera with Aerobic Training in the analyses on Experimental Groups. In Experimental Group had implemented the aerobic training with Moringa Oleifera prescription is influenced the significant reduction in **Triglycerides** when compare to the control group. It's all because of the supplementing the natural products is influenced and excess cholesterol spent as energy for stamina and it avoid to formation of cholesterol in the body and **Triglycerides** is the another reservoir of the working muscles . So its concluded that the aerobic training with Moringa Oleifera had significantly influenced to reduce **Triglycerides** and to avoid the cholesterol deposition in the body.

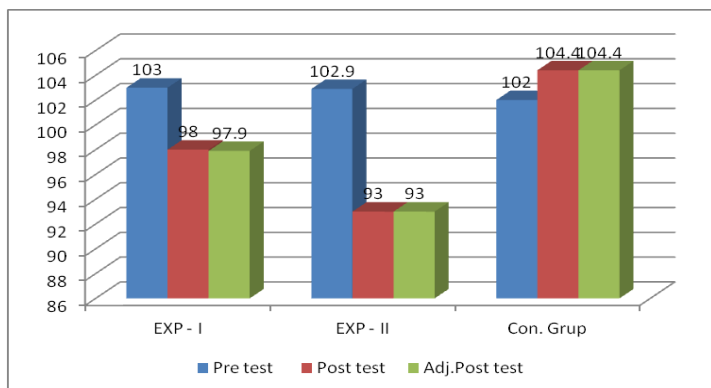
# COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN ARTERIAL PRESSURE



Means	EXP - I	EXP - II	Con.Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	103	102.9	102	B	9.3	2	4.6	0.40
				W	492.9	42	11.7	
Post test	98	93.0	104.4	B	968.7	2	484.3	63.86
				W	318.5	42	7.5	
Adj.Post test Mean	97.9	93.0	104.4	B	967.5	2	483.7	62.85
				W	315.5	41	7.6	

## DISCUSSION ON FINDINGS OF MEAN ARTERIAL PRESSURE

From these analyses, it is found that the results obtained from the experimental groups had significant reduction in Mean Arterial Pressure when compared with the one from the control group. This is due to the inclusion of *Moringa Oleifera* with aerobic training in the analyses on Experimental Groups.



It is interesting to note that the results obtained from Experimental Group II had more effect than Experimental Group I on the reduction of Mean Arterial Pressure level. This is due to the implementation of *Moringa Oleifera* supplementation in Experimental Group II.

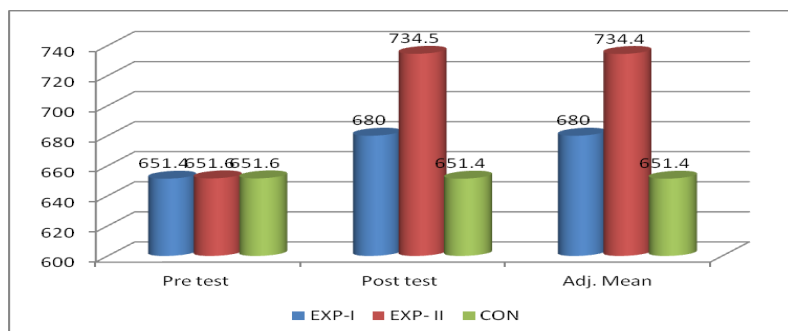
It is concluded that the Mean Arterial Pressure is reduced means it will allow the heart and muscle work very smoothly and long duration without any fatigue. So due to this reason, we have to maintain the normal level of Mean Arterial Pressure in the body is always good for the internal systems.

## COMPUTATION OF ANALYSIS OF COVARIANCE OF TESTOSTERONE

Means	EXP - I	EXP - II	Con. Grup	S.V	S.S	D.F	M.S	O. F
Pre test Mean	651.4	651.6	651.6	B	0.40	2	0.2	0.00
				W	17924.4	42	426.7	
Post test	680	734.5	651.4	B	53440.5	2	26720.27	38.3
				W	29289.4	42	697.3	
Adj. Post test Mean	680.0	734.4	651.4	B	53413.9	2	26706.9	44.5
				W	24581.7	41	599.5	

### Discussion On Findings Of Testosterone:

From these analyses, it is found that the results obtained from the experimental groups had significantly increased in Testosterone level when compared with the one from the control group. This is due to the



inclusion of *Moringa Oleifera* with aerobic training in the analyses on Experimental Groups. It is interesting to note that the results obtained the value of testosterone from Experimental Group II had greater increase from its lower level to maximal level than the Experimental Group I on the



improvement of Testosterone. This is due to prescription of Aerobic Training With Moringa Oleifera to boost the volume of testosterone in the Experimental Group II. It is concluded that the experimental groups had greater improvement in volume of Testosterone in men athletes.

**RESULTS:** Within the limitations of the study, the following conclusions were drawn:

Experimental group II (Aerobic Training with Moringa Oleifera) showed significantly greater reduction on Resting Heart Rate, Mean Arterial Pressure, Triglycerides and **testosterone** than that of Experimental group I at the end of eight week period of time.

**FINDINGS:** After incorporate statistical technique, it was found that a significant decrease in Resting Heart Rate, Mean Arterial Pressure, Triglycerides and **greater increased in testosterone** in experimental group II (Moringa Oleifera with aerobic exercise), and also found that high density lipoprotein and testosterone significantly increase due to eight weeks of **Natural Supplementation with aerobic training than that aerobic exercise group**.

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## **Physical Education is the basic foundation to build High Performance Athlete**

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### **Abstract:**

School health and physical education programs, for kindergarten through high school, and local youth sports programs, need to implement a long-term athletic development to have a basic foundation of Physical Education to build High Performance Athlete. Physical Education Plays the main role in the Identification of Talent and Selection of Sport of a Child at School and College level to guide for the correct coaching in becoming the future champions of the country. Sport programs and coaches resort to overemphasizing competition and related sport skills. From a coach's standpoint, there is need for practical, functional, and sequential athlete document that will provide coaches with best practices for the development of strength, flexibility, and stability in their athletes at correct age at school level to develop the motor qualities and skills. This Programme of Physical Education must include movement vocabulary, physical literacy, and athletic movement skills, if athleticism is to be achieved. The Study has conducted among the 30 International level Sports of Telangana State Persons through the Questionnaire those who have participated in Olympics, Asian Games and Other International Tournaments. All the Sports Persons has recommended they become high performance athlete due to the Physical Education Programmes in early age and at school level. Hence it is recommended that Physical Education is a basic foundation to build High Performance athlete. Key words: Physical Education, Talent, Selection of sport etc.

### **Introduction:**

School health and physical education programs, for kindergarten through high school, and local youth sports programs, need to implement a long-term athletic development to have a basic foundation of Physical Education to build High Performance Athlete. Physical Education Plays the main role in the Identification of Talent and Selection of Sport of a Child at School and College level to guide for the correct coaching in becoming the future champions of the country.

Sport programs and coaches resort to overemphasizing competition and related sport skills. From a coach's standpoint, there is need for practical, functional, and sequential athlete document that will provide coaches with best practices for the development of strength, flexibility, and stability in their athletes at correct age at school level to develop the motor qualities and skills. This Programme of Physical Education must include movement vocabulary, physical literacy, and athletic movement skills, if athleticism is to be achieved.

The goal of Physical education is to prepare students for a Life time of Healthy living, Physical training for the all round development of the Child.

A long-term commitment to physical education , proper training to improve athleticism, and sport skill development is vital to produce optimal athletic potential. Proper training and athletic development require time.

As Per National Strength Conditioning Association the “Physical Literacy is a fundamental and valued human capability that can be described as a disposition acquired by human individuals encompassing the motivation, confidence, and physical competence that establishes purposeful physical activity as an integral part of their lifestyle,”

Athleticism is the result of athletic movement skills development that involves learning proper techniques for agility, balance, coordination, flexibility, metabolic training, power, reaction time, speed, strength, and strength endurance can be developed through physical education.

### **Talent Development**

Scientific research concludes that it takes 8 – 12 years of training for a talented athlete to reach elite levels . It also can be argued that it takes that long, if not longer, to produce quality youth coaches who understand how to develop proper skills in children. There are no shortcuts to athletic success Unfortunately, some coaches and parents overemphasize competition, while at the same time, approach proper movement skills and development to improve athleticism with little or no interest.

School sport offers the school community opportunities to build a strong identity and culture of excellence. Traditional values of respect, fairness, responsibility and resilience are developed as part of students' participation. School sport is often a partnership between the school and local community organisations, which work together to develop students' abilities and foster student aspirations for interesting and rewarding lives.

The mandated time allocations for physical and sport education for all students in Years P–10 in government schools are as follows: Primary schools: • Years P–3: 20 to 30 minutes of physical education a day. • Years 4–6: three hours per week of physical education and sport with a minimum provision of 50 per cent for physical education. Secondary schools: • Years 7–10: 100 minutes per week for physical education

Sporting activity allows each individual to meet primary human needs: the basic biological need for movement and play, the need for safety, order, belonging and love, esteem and self-actualization. 2. Sport and sport activities significantly affect the desirable psychosomatic development of children and young people, they

According to Balyi, his theoretical model can, when properly implemented, provide a change in sports programs and athletic development by identifying gaps, and providing guidelines for movement problem solving, improving performance at various stages of athletic development, and outlining a framework to develop physical literacy, physical fitness for life, and competitive athletics. A well-planned and balanced schedule of training, practice, competition, and recovery will enhance optimum development throughout the individual's athletic career .

### **Importance of Coach Education**

The following list of program components contains a series of movement component categories that correspond and expand the physical literacy and movement foundation:

- Balance and stability
- Fundamental/dynamic movement
- Object control
- Plyometrics
- Speed and agility (multidirectional)
- Fun drills
- Strength/endurance/power

**Methodology:**

The Study has conducted among the 30 International level Sports Persons of Telangana State through the Questionnaire those who have participated in Olympics, Asian Games and Other International Tournaments. The International Players are from Badminton( 8 Players) Athletics (8) Cricket (4) Foot Ball (3) Volley Ball (4) Basket Ball Players (3). All the Players has given the Questionnaire prepared by the Researcher in consultation with Coaches and former Players. All the Players are also taken Interview also.

**Results and Discussion:**

30 International Level players have given there Schools Physical Education Programme has helped them to come in Sports.

Sumeeth Reddy – Badminton Olympian has started Training in Badminton Through Physical Education Programme in Schools.

P.Shankar – Athlete in Asian Games has started training in Athletics through physical Education events in Schools.

J.Shivaji Yadav- International Cricketer has started practice in cricket at School level Cricket League.

G.P.Palguna – International Foot Ball Player has playing foot ball at school level because of the physical education Programmes includes foot ball.

Venkatnarayana – Volley ball Player at Asian Games told that his school is having small ground like volley ball he used to practice at school level.

Mr.Hari Krishna – Indian Team Basket Ball Captaing started playing Basket Ball due to Basket Ball is taught daily in leisure hours of Physical Education in School.

All the International Sports Players has claimed that the Physical Education Teacher in Schools has motivated and coach them to participate in Sports events at School level.

The findings reveal that schools draw on an extremely varied range of strategies to identify and develop their talented pupils in physical education. Although the majority of schools appear to have developed a whole school and departmental policy for developing talent, there was a strong indication that a whole school policy was a significant driving force for designing a policy at department level. Although there has been a great deal of research on talent development in sport and education, there has been a distinct lack of research on developing talent specifically in a curricular physical education context. The most common criteria for assessment were reported to be performance in school sport and club sport. A key finding was that the majority of subject leaders indicated that the main area of expertise for staff was games activities, which may have significance if teachers feel better able to identify talented pupils in areas in which they themselves have expertise.

**Conclusion:**

The paper concludes with a discussion of the implications of these findings, suggesting that instances of good practice need to be highlighted and widely disseminated, and detailed guidance should be made available to all schools, if effective and equitable talent development practices are to be properly adopted within physical education departments.

**Recommendations:**

Overall, the findings suggest that the effectiveness of Physical Education Programmes at School Level. The Talent Identification of Child will be at Physical Education Programme. Physical Literacy training is very important for Child at School Level. The Selection of Sport can be done through Physical Education. Hence Physical Education is the basic foundation to build high

**Acknowledgements:**

I am thankful to Coaches and International Players for giving there valuable time in completion of the Study.

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## **Effect of Yogic Practices and Brisk Walking on Haematological Variables among Men**

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### **Introduction:**

Good health is our most precious possession. One of the important ways to improve physical fitness is by regular exercise. Healthy life style contributes to optimal health and quality of life. Regular exercise helps in attaining stronger cardiac muscles, lower heart rate, increased oxygen supply to brain, increased work capacity, reduce risk of heart attack, hypertension, increased work capacity of the blood which leads to improved cardiovascular fitness and health. Proper exercise can make definite difference in body mass and body fat which helps to attain greater work efficiency, less susceptibility to diseases, improved appearance, less incidences of problems related to obesity.

Regular exercise can also result in additional psychological benefits such as reduction in mental tension, improved sense of well being, improved sleep habits, improved self confidence ability to enjoy leisure, relief from anxiety, depression, confidence assertiveness, independence, intellectual functioning and self control. Regular physical exercise boosts the immune system and helps prevent the 'diseases of affluence' such as obesity, heart disease, cardiovascular disease, type 2 diabetes. It also improves mental health, helps prevent depression, helps to promote positive self-esteem, and augment an individual's sex appeal or body image, which again is also linked with higher levels of self-esteem. Physical exercise can also help reduce the effects of childhood obesity which is a growing concern of the world today.

Regular physical exercise can boost the Immune System. The immune system is our body's protective network designed to fend off invasion by harmful substances, including bacteria, viruses, and harmful chemicals, and act as a surveillance system against the development of cancer. Under normal circumstances, the immune system is highly efficient, providing multiple defenses against the onslaught of outside invaders. Physical fitness is one's richest possession. It has to be earned through a daily routine of physical exercise. Physical exercises can be classified as aerobic exercises and anaerobic exercises. Aerobic exercise is a physical exercise that intends to improve the oxygen system. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy generating process.

**Methodology:**

The purpose of the study was to determine the Effect of Three Months Brisk Walking and yogasanas on selected Haematological Variables of 50 – 55 years Men. To attain the purpose of this study, 60 (sixty) men those who are attaining superannuation in Government service were selected randomly from the group of 75 members (seventy five) 55 to 60 years age group Government employees. They were examined by a qualified medical practitioner and were found to be medically and physically fit to take part in the training program which was designed according to the study. The subjects were Government employees of different sectors in Anantapuramu town and they were considered as homogenous group because, there were no difference in routine life pattern. The selected subjects (N=60) were divided in to three groups equally and randomly i.e. Experimental Group – I underwent brisk walk training, Experimental group – II underwent Yogasana's practices and Group III is called as Control Group. The 2 experimental groups were engaged with their respective training protocols for one hour per day and these activities according to the groups were restricted three days per week for sixteen weeks. The following Hematological Variable were taken for study:

**Hematological Variables**

- Hemoglobin (Hb)
- To find out the percentage of hemoglobin concentration in the blood. To assess the hemoglobin concentration was estimated by Cyanme - thal moglobin method was used.

**Results and Discussion**

The statistical analysis of the data collected from the Pre and Post test on Hemoglobin of Experimental and control group have been presented in Table - I

**Table –I: Summary Of Means And Standard Deviations Of Pre And Post Tests On Hemoglobin Of Yogasana Group, Briskwalk Group And Control Group**

Tests		Yogasana Group	Brisk Walking Group	Control Group
Pre Test	Mean	14.6	14.33	14.67
	Standard Deviation	0.9	1.10	1.24
Post Test	Mean	15.9	16.06	14.91
	Standard Deviation	0.81	0.79	1.27
Adjusted Post Test		15.67	16.24	14.64

The statistical analysis of Hemoglobin (Hb) from the table shows that the Pre – test means of Yogasana's group, brisk walk group and Control group are 14.6, 14.33 and 14.67 respectively.

The statistical analysis of Hemoglobin from the table shows that the Pre – test Standard Deviation of Yogasana's group, brisk walk group and Control group are 0.9, 1.10 and 1.24 respectively.

The statistical analysis of Hb from the table shows that the post test means of Yogasana's group, brisk walk group and control group are 15.8, 16.06 and 14.91 respectively.

The statistical analysis of Hemoglobin from the table indicate that the post test standard deviation of Yogasana's group, Brisk walk group and control group are 0.81, 0.79 and 1.27 respectively.

The adjusted post test means of Hemoglobin is presented as per the table, the yogasana's group, brisk walk group and control group are 15.06, 16.24 and 14.64 respectively.

#### **Conclusions:**

The results of the study indicating that the experimental groups i.e., yogasana group, brisk walking group has shown no significant difference from the selected hematological variable i.e., hemoglobin when compared to yogasana group and control group, but the results obtained by the researcher on hemoglobin is identical.

#### **Reccommendations:**

This type of Study is useful to the general public to improve the haemoglobin level among Men.

#### **References:**

**Kapoor Chandra Sekhar (2016)**, "the yoga has shown significant implement in Hb%".

**According to Pujan,(2017)**, "demonstrated that the brisk walking for even 30 minutes has some positive influence on blood parameter i.e. hemoglobin".

## **Attentional Focus Training for an Athlete**

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### **Introduction:**

Usually, messages from several senses arrive at the same time, competing with one another. For example, a person reading the book may be simultaneously aware of some noise produced outside the room, a player playing in competition, the situation around him (playing strategies, spectator's behavior etc.). All these become part of his consciousness at that moment. However, he is not aware of them with the same degree of clarity since he is most aware of what he is doing at that moment. This particular process of focusing within the field of awareness is called Attention. Attention is determined by a number of factors. Some of these related to the stimulus referred to as objective factors and some of relate to personal factors referred to as subjective factors.

### **Objective Factors**

We tend to notice objects which provide strong stimulation to our sense organs like an exceptionally loud noise or bright light (intensity). An object that is unusually large size or moving (movement) draws our attention. Anything which stands out from its surroundings for some reason or the attracts our attention (distinctness). It may be seen that these characteristics or factors, such as intensity, size, movement, distinctness, repetition and change are attributes of the stimulus or external environment and are known as objective factors.

### **Subjective Factors**

Attention is also determined by certain subjective or personal factors. An individual's needs, motives interests, past experience, culture, etc. influence

attention to a very great extent. For instance, A person waiting for a letter(motive) will hear the postman's call immediately in spite of traffic noise and other noises. Thus, it can be seen that attention is not a simple process, but is influenced by other processes like learning motivation, past experience etc. Attention is complete process influenced by objective and subjective factors.



### **Types of Attentional Focus**

A high level of performance in any human activity requires a certain amount of concentration and attention. If you are a pretty good athlete in any particular sport, then you have mastered some aspects of attention control already. The student who has learned to read a book while others in the room are watching television has developed a high degree of attentional focus. To maximize athlete performance, the athlete must develop a highly refined and develop ability to focus and refocus. As you studied the section of this chapter on cue utilization, you learned that the width of your attentional focus narrows as you become more alert and aroused. Thus, it should be apparent to you that attention is tied very closely to the degree of mental and physical activation

Four different types of attention focus can be attained. An athlete's attention focus may be categorized as broad-internal, broad-external, narrow-internal, or narrow-external. Different types of attentional focus are required for different athletic situations and events.

### **Function of Required Cognition**

Whether attention will be directed internally or externally is primarily a function of required cognition, or thought. For example, in order to mentally rehearse a skill or mentally plan a strategy, we must focus internally. Internal attentional focusing can be accomplished with the eyes open or closed. Conversely, external attention is required for the athlete to focus on people, events or objects in the external environment.

### **Function of Arousal**

Whether attention should be broad or narrow is primarily a function of arousal and the number of environmental elements that must be scanned. In order for an athlete to be able to take into account several different game situations and objects, he must employ broad attentional focus. In order to have broad external focus, the athlete must be able to reduce the level of arousal activation in his body. That is why a young quarterback who is in danger of being sacked may fail to see the open receiver. Due to increased arousal, the athlete narrows attention too much and fails to see the big picture. Experienced quarterbacks are often able to find the open receiver, when in a full-scale rush is on. Conversely, the baseball or softball player must focus on a single element when trying to hit a moving ball with a bat. This situation requires an acute or sudden burst of narrowed attention as the ball is released and approaches the plate. Prior to the vital pitch, the batter must display a fairly broad external focus in order to remain relaxed, see the coach's sign, and avoid becoming tense.

### **Attentional Focus**

Because of the complex nature of attentional focus, it is easy to see why an athlete might adopt an inappropriate pattern of attention for a specific situation. Attentional control training requires the athlete to be aware of the various types of attentional focus and to learn to apply each at the appropriate time. Once the athlete understands which type of focus is necessary for specific athletic situations, attentional control can be self-taught and practiced. However, for the best results, the athlete must practice attentional focus skills in game-like situations.

### **Negative and Positive Thought Stopping and Centering**

Along with learning various attentional styles, it is critically important that the athlete learn to use attention to stop negative thoughts and to focus on positive thoughts. This is a problem that confronts athletes regularly. To overcome feelings of self-doubt, it is necessary to apply the principles of selective attention. In other words, the athlete must develop a high degree of attentional control. As defined by Nideffer(1981), attention control is a technique designed to keep the athlete from slipping into a cycle of anxiety and self-doubt. It is important that the athlete approach every sport situation with a positive attitude and belief that

she will succeed. When negative thoughts come into consciousness, they must be removed or displaced with positive thoughts. The process of stopping a negative thought and replacing it with a positive one is referred to as thought stopping. It is a basic principle of psychology that an athlete cannot give quality attention to more than one attention-demanding task at a time. In this case, it is the mental task of thinking a positive as apposed to a negative thought. Once the negative thought has been displaced, the athlete centers her attention internally. The process of centering involves directing thoughts internally. It is during the internal process of centering that the athlete makes conscious adjustments in attention and arousal. The process of centering involves the conscious awareness of the body's center of gravity, while at the same time the internalization of thought processes. Immediately following the centering process, the athlete narrowly focuses her attention on a task-relevant external cue. It is at this point that skilled action is taken. Any delay between directing attention externally and skill execution will only invite distractions in the form of negative thoughts or unwanted environmental stimuli.

Let's take a specific example. Say you are standing at the foul line and are about to shoot a game-winning(or game-losing) foul shot. The thought goes through your mind, "I'm going to miss, I can feel it. The basket is too small, it's a mile away, and I'm scared!" You are losing control. To successfully use the thought-stopping and centering procedure, you must first use the principle of selective attention to drive out of negative thought with a positive thought.

The following basic steps are used in the negative and positive thought-stopping and centering procedure:

1. Displace any negative thought that comes into your mind with a positive thought.
2. Center your attention internally while making minor adjustments in arousal.
3. Narrowly focus your attention externally on a task-relevant cue associated

### **Selective Attention**

The ability to selectively attend to the appropriate stimuli is critical in most athletic situations. In basketball, the athlete must concentrate on the basket while shooting a free throw rather than being distracted by the noise from the crowd. In volleyball, the athlete must selectively attend to the server instead of being distracted by thoughts of a previous play. In baseball, the base runner must attend to the pitcher, and not to the jabbering of the second baseman. In football, the quarterback must selectively attend to his receivers, while gating out the sights and sounds of the huge defensive linemen who are lunging at him. Of course, some athletes are better than others at selectively attending to important cues. This is one difference between the good athlete and the outstanding athlete.

### **Conclusion**

Thought-stopping and centering skills practiced and developed prior to competition can be used when they are needed. Specific positive thoughts, relevant cues, and task-oriented suggestions should be practiced and readied for competition.

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