



## SELF ESTEEM AMONG EARLY ADOLESCENT ATHLETES AND NON ATHLETES

Chindu Mary Mathew<sup>1</sup>, Mrs. Anu Anns Pious<sup>2</sup>, & Dr. Sheela Rosalyn<sup>3</sup>

### Affiliations:

- <sup>1</sup> Students (M.Sc.) Psychological Counseling, Institution: Indian Institution of Psychology and Research (IIPR) Bangalore (Karnataka).
- <sup>2</sup> Assistant Professor. Institution: Indian Institution of Psychology and Research (IIPR) Bangalore (Karnataka).
- <sup>3</sup> Assistant Professor. Institution: Indian Institution of Psychology and Research (IIPR) Bangalore (Karnataka).

### **ABSTRACT**

The aim of the present study was to compare self-esteem among early adolescent athletes and non-athletes. Sport participation has been shown to positively influence self-esteem of early adolescent. This effect was measured in sample of early adolescents, with the effect of gender; participation and level of participation in sports were explored. The participants in this study were 187 early adolescent where 89 non-athletes (43 males and 46 females) and 98 athletes (51 males and 47 females) between in the Grades 5-8. The athletes are further divided into two groups of 50 recreational/ fun athletes and 48 competitive athletes. The sample was collected through non- random sampling method. Rosenberg scale of self – esteem was used to measure participants Self –esteem. Through the Descriptive statistics and Independent Sample t- Test the following results were concluded. The results showed the athletes have significantly higher self – esteem compared to non- athletes. Also, competitive athletes have higher self- esteem than recreational athletes. It was also found that there is no gender difference in self – esteem among early adolescent athletes.

**Keywords:** sports, self-esteem, type of participation, levels of participation.

## 1. INTRODUCTION

All humans experience distinctive phases of development, which incorporates, prenatal period, post natal period, childhood (early, middle and late), adolescent, young adulthood, middle adulthood and late adulthood. Adolescence is a time of transition, where they struggle to deal with the physical, cognitive, and social changes throughout this formative period. Adolescence is the developmental period of transition from childhood to early adulthood, entered at approximately 10 to 12 years of age and ending at 18 to 21 years of age (Standrock, 2011). According to Barrett adolescence is divided into three stages where in early adolescence ages 11-13, middle adolescence ages 14 - 16 and late adolescence ages 17 - 19. ). The transition occur in adolescence can be more challenging and socially difficult; consequently it might lead to outburst and stress period. The characteristic feature of adolescence period is the physical and psychological growth. During adolescence biological processes drive many aspects of this growth and development, with the onset of puberty marking the passage from childhood to adolescence. Thus, adolescence is a critical period where individuals form their self -esteem. As indicated in a study by Badayai and Ismail, (2012) a decrease in self-esteem was found to occur during adolescence. The development of self-perception is the most intense at the stage of adolescence and it includes perception of both self-concept and self-esteem.

Self- esteem is the individual's sense of self- worth, as in how much one matters to him or herself and to others. Self- esteem also, refers to the extent to which a person values their abilities and appreciates him or herself. (Bowker, 2006). Self-esteem concept could be traced from Self - Determination Theory (SDT) which was developed by Edward L. Deci and Richard M. Ryan in 1995 in which he explained Non contingent self-esteem, who characterizes persons for whom the issue of self-esteem is not noticeable, largely because they experience themselves on a fundamental level as worthy of esteem and love. Successes and failures do not implicate their self-worth, even when they lead to a reevaluation of actions and efforts (Ryan & Deci, 2000). Tracing the trajectory of self-esteem development on the average, one's self-esteem is relatively high in childhood, then drops during adolescence, later to arise gradually throughout adulthood, and then declines sharply in old age. The reasons for the significant drop are adolescence is an important period for self-analysis and self-evaluation and develops a sense of self or identity in this period of life. Therefore it is a crucial period where adolescence forms their self -esteem. Self-esteem in adolescence is affected by how significant others view them that is parents, family, peers and teachers. Self-esteem has noteworthy impact of the overall personality of the individual. Whether one feels good about themselves or bad about themselves depends on the self-esteem of the individual. It is found that the first drop occurs at the onset at the early adolescence (9-13 years) when the young person's separation from childhood creates a loss of contentment with being treated any longer as a child (Orth, Robins & Roberts, 2008). Several reasons are found for the drop of self-esteem during early adolescent, it includes due to the onset of puberty, experiences of either negative or positive occurrence as well as continues to receive negative feedbacks and comments on his or her physical appearances, academic achievement, peer relationships and so on. This transition can be more challenging and socially complex, thus it might lead to storm and stress period. It is important to identify to the how self-esteem can be increased especially during early adolescence and it is viewed that sport participation is positive has received much empirical support over the years. The association between sports activities and more general measures of self-esteem is more complex especially during childhood and early adolescence. Self-esteem is a basic motivational factor in sport.

A large amount of research has been collected identifying sport participation and its various affects upon adolescents (Feldman and Matjasko 2005). Participation in sports positively affects mental health and the level of general happiness. Greater sports participation may enhance physical self-esteem, which in turn, predicts more positive global self-esteem. It also endows one with a

sense of control and dominance, improves psychological state and alleviates depression, increases assertiveness and self-esteem. Like every sport event participation athletics also have positive effects on individuals and communities. Athletics helps an individual to have a healthy physical structure and confidence but also enhance psychologically which includes self-awareness and self-discipline leading to self-respect and courage. Furthermore, it helps an individual to learn and develop one's skills, potential and leadership abilities. Development of competence or expertise in sporting skills can lead to a sense of personal effectiveness and feelings of autonomy, and these are associated with the promotion of self-esteem Athletic activity during adolescence has been shown to correlate with an increase in the amount of positive self-talk later in life (Dodge & Lambert, 2009). Therefore, self-esteem is a powerful variable and its impact on athletes. Monzo (2011) revealed the students who participated in sports did have a higher self-esteem score than the participants who did not play sports. As a result, it is important these support systems help the adolescents to explore their identity and develop self-esteem and positively influences adolescents in the development of self-esteem with the strategies which could have an impact on the development of self-esteem.

An athlete is one who trains for and competes in sporting events in track and field events including running races, jumping and throwing events or extracurricular activity or fun. Competitive sports are those who compete against others formally for awards. Non-competitive (recreational) sports are for whom playing and fun is emphasized over winning. Sport provides athletes with opportunities to try new skills and assess their capabilities and association with these leads to the promotion of self-esteem. In their study, Erkut and Tracy (2002) found that participation in school sport was significantly associated with self-esteem. Also, the study of (Armstrong and Oomen-Early, 2009) revealed that athletes maintain higher levels of self-esteem and lower levels of depression than non-athletes. Another study (Cornell, 2013) concluded athletes scored significantly higher on a standardized measure of self-esteem than non-athletes. Competitive sports often exaggerate difficulties, and studies have found that non-competitive sports benefit more. Adolescence is the developmental period where the self-esteem is majorly focused on external factors and it is significant period where self-esteem is in fragile state. Therefore coaches, physical education teachers, parents, critical feedbacks are the other factors which influence self-esteem. It is also observed peer acceptance to be a significant factor in determining the relationship between sport participation and self-esteem. Therefore, considering these factors it is difficult to predict the effect of self-esteem and participation in athletics in early adolescence.

### **1.1 Hypotheses**

H<sub>0</sub> 1: There is no significant difference in self-esteem among early adolescent athletes and non-athletes

H<sub>0</sub> 2: There is no significant difference in self-esteem among early adolescent recreational participant and competitive participant of sports.

H<sub>0</sub> 3: There is no significant gender difference in self-esteem among early adolescent athletes.

## **2. METHODOLOGY**

### **2.1 Sample**

In the present study, the respondents were selected from early adolescent's athletes and non-athletes within the age group of 11 to 13. The total size of the sample was 187 early adolescent which includes 89 non-athletes (43 males and 46 females) and 98 athletes (51 males and 47 females). The athletes are further divided into two groups which comprises of 50 recreational/ fun athletes and 48 competitive athletes. The athletes included in the current study are the participants who involve in track and field events including running races, jumping and throwing events. The samples were chosen from who are residing in Trivandrum, Kerala. The sample was selection through non-random purposive sampling method (Kothari, 2015) and Non-Experimental

comparative research designs (Bryman, 2014) were adopted.

The sample was restricted to athletes of field and tracks. Samples from other athletic events were not included. Being a small scale research, the researcher couldn't obtain larger representation of sample. Though the result was found to be there was significant difference. This stood as a limitation of the study for not being able to generalize the result to all athletic events

Samples Included only from Urban Trivandrum. The sample that was chosen for the present study was only limited to Trivandrum. If the geographical area was wider the study could have helped to carry out a comparative study across various states, however the present study did show significant difference in self-esteem among athletes and non-athletes.

## 2.2 Instrumentation

The data required was collected mainly with the aid of socio demographic sheet which consists of the participant's information of the individual's which includes initials, age, gender, current location, place of living, levels of participation, type of participation and sports participation information of the participants and Rosenberg self-esteem questionnaire (1965) developed by sociologist Dr. Morris Rosenberg. This scale is a self-report measure of self-esteem. The scale consists of ten items. Half of the items are positively worded and negatively worded. The items are scored on a four-point scale from strongly agree to strongly disagree. Rosenberg (1965) reported Internal consistency from 0.77 to 0.88 and Test-retest reliability range from 0.82 to 0.85 and the criterion validity = 0.55. The RSE has received more empirical validation than any other self-esteem scale and therefore, was the best choice for this study (Robins, Hendin, and Trzesniewski, 2001).

## 2.3 Data Collection

Selected participants were approached and permission was taken from authorities and then informed consent was taken from the participants followed by explaining the instructions. The participants were asked to fill in the necessary socio-demographic details and Rosenberg self-esteem scale and then data was collected from the participants directly.

## 2.4 Statistical Analysis:

The obtained data was analyzed through the process of editing, tabulating, coding and scoring through Microsoft excel and SPSS version 20. To examine the difference in self-esteem among early adolescent athletes and non-athletes, mean, SD, Skewness, Kurtosis and t-test were applied.

## 3. RESULTS AND DISCUSSION

To examine the difference in self-esteem among early adolescent athletes and non-athletes, t-test was used and data pertaining to this has been presented in table 1 to 5 and depicted in Figure 1 & 2.

The objective of the study was to examine the difference in self-esteem among early adolescent athletes and non-athletes.

**TABLE 1**  
**DESCRIPTIVE STATISTICS OF SELF-ESTEEM AMONG EARLY ADOLESCENT**  
**ATHLETES AND NON-ATHLETES**

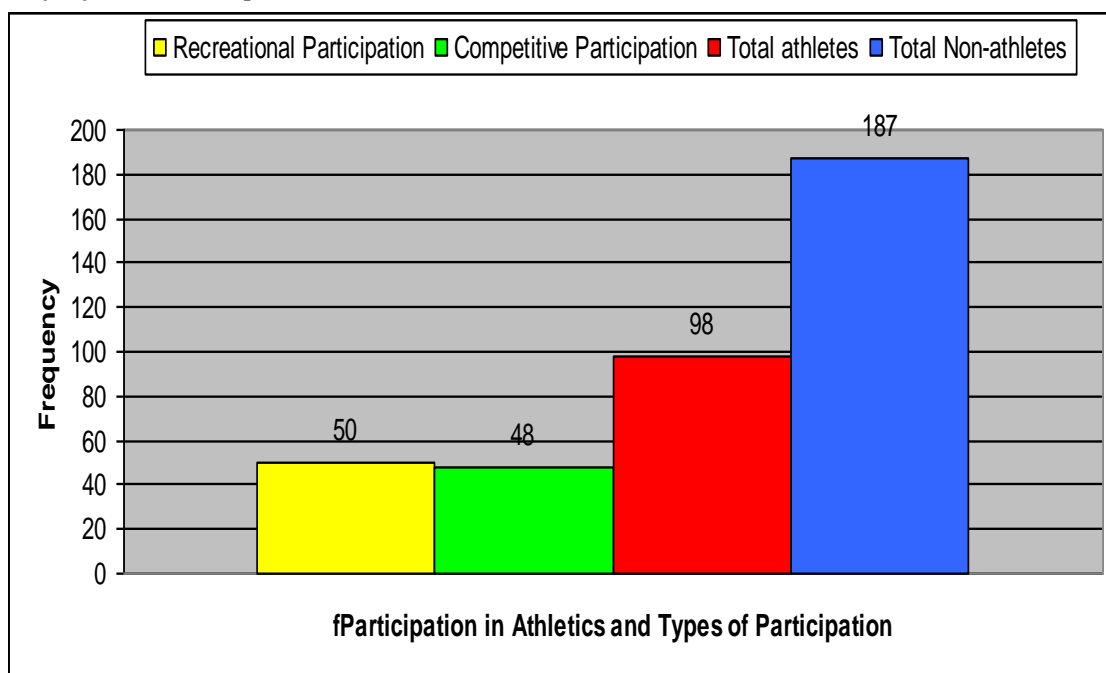
	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Self-esteem</b>	187	19.93	4.457	-.285	-.252

Table 1, shows a descriptive statistics of participation in athletics and Self-esteem score. For the total number of respondents, (N = 187) a group of samples with representation of non-athlete (89) and athlete (98) were selected. The mean score of self-esteem is 19.93 ± 4.457. The skewness (-.285), and kurtosis (-.252) value of self-esteem score are identified between the range of -1.96 to +1.96, hence the distribution of data is normal.

**TABLE 2**  
**DISTRIBUTION OF SAMPLE BASED ON PARTICIPATION IN ATHLETICS & TYPES OF PARTICIPATION**

Participation in Athletics	Types of Participation	N	Total	Percent
Athletes	Recreational Participation	50	98	52.4
	Competitive Participation	48		
Non-athletes		89	89	47.5
Total			187	100%

The table 2 illustrates the distribution of samples based on the Participation in Athletics & Types of Participation. The types of participation are classified as recreational and competitive Participants. Table shows that 52.4% (98) of the samples are Athletes and 47.5% (89) of the samples are of Non- athletes.



**Figure 1 Distribution of Sample Based on Participation in Athletics & Types of Participation**

**TABLE 3**  
**GENDER WISE DISTRIBUTION OF ATHLETES & NON-ATHLETES**

Gender	Athletes	Non-athletes	Total	Percent
Male	51	43	94	50.2
Female	47	46	93	49.7
Total	98	89	187	100

The table 3 describes the sample based on gender wise distribution of Athletes and Non – athletes. Out of total 98 samples of Athletes 51 are of males and 47 are of females and in Non – athletes out of 89 samples 43 are of males and 46 are of females. Among the total respondents, 50.2% (94) of the samples are males, 49.7% (93) of the samples are females.

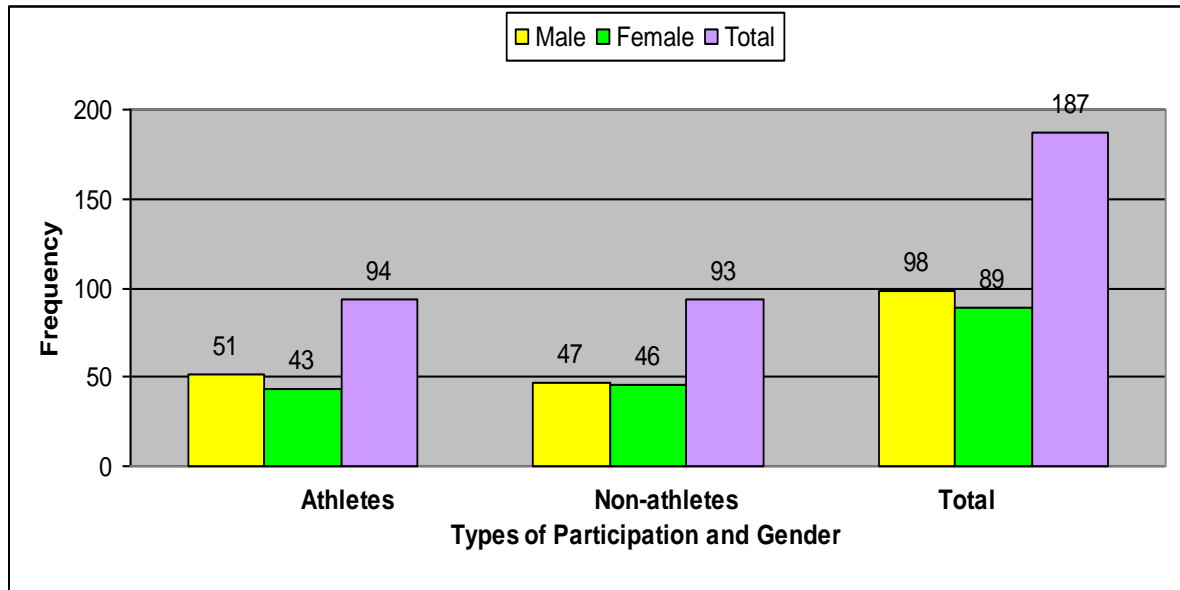


Figure 2 Genderwise Distribution of Athletes and Non-athletes

TABLE 4

COMPARISON OF SELF - ESTEEM BETWEEN ATHLETES AND NON- ATHLETES

Gender	Athletics	N	Mean	SD	t	df	Sig. (2tailed)
Rosenberg self-esteem score	Non-Athletes	89	17.60	3.996	-7.866	185	.000
	Athletes	98	22.05	3.748			

\*p<0.05

Results presented in table 4 indicates research sample (n = 189), the group of athletes (M= 22.05, SD = 3.748, n = 90) has obtained a higher self-esteem score than the group of non-athletes (M = 17.60, SD = 3.996, n = 89), df = 185, t = -7.866, p = .000 and is significant at 0.05 level. Hence, there is significant difference in self-esteem among early adolescent athletes and non- athletes.

The results indicates that sport participation has positive effect on self- esteem and that participation who are involved in sports have higher self –esteem than those who have not. It was found that athletes on the whole felt satisfied with themselves and felt they were on equal plan with others and in general report positive attitude towards themselves. Whereas on the other hand non – athletes participants of the study at times felt that they didn't have much to be proud off and had a need of respect for themselves, which they feel they lack and in general non-athletes perceived themselves to be effective. The findings in this study have shown similar results on the previous studies. Ozsaker (2013) studied on assertiveness and self-esteem among athletes and nonathletes of Turkish Adolescents. The study concluded that there is a significantly stronger relationship between assertiveness and self-esteem among athletic adolescents compared to the sedentary adolescents. Another study by Cornel (2013) investigated differences in self-esteem between Division III Collegiate Athletes and Non-Athletes and concluded self-esteem levels were found to be significantly higher in athletes. In the present study also it was found that there is significant difference in self-esteem among early adolescent athletes and non- athletes. Athletes are having higher self-esteem than non-athletes. The explanations for this finding could be due to sports participation, athletes learn to maximize skill sets that they succeed

in, and in turn reduce their “feared” selves. These results also conclude that athletes maintain a heightened and more positive self-concept than non-athletes similarly athletes develop socially and leadership skills, increase peer-awareness, and improve emotional fitness.

**TABLE 5**  
**COMPARISON OF SELF - ESTEEM BETWEEN COMPETITIVE AND RECREATIONAL ATHLETES**

	Type of Participation	N	Mean	SD	t	df	Sig. (2tailed)
Rosenberg self-esteem score	Competitive	48	23.81	3.022	5.116	96	.000
	Recreational	50	20.36	3.618			

\*p<0.05

Table 5 shows research sample (n = 98), the group of competitive participants (M = 23.81, SD = 3.022, n = 48) has obtained a higher self-esteem score than the group of recreational participants (M = 20.36, SD = 3.618, n = 50), df = 96, t = 5.116, p = .000 and is significant at 0.05 level. Hence, there is significant difference in self-esteem among early adolescent recreational participant and competitive participant.

In their study, Amac, Anastasio, et.al (2002) found there is higher self-esteem between girls of recreational gymnastics than the girls’ who participate in competitive gymnastics. However, in the present study the finding is the competitive athletes have higher self-esteem compared to the recreational athletes and it could be as recreational adolescent athletes decrease the threatening nature of competitive sport by emphasizing intrinsic enjoyment and the pursuit of personal performance goals are advocated and as well as not required to deal with the pressures of increased skill level that goes with competition. Another reason for high significance of self-esteem with competitive athletes than recreational - athletes could be participation in competitive sport events can enhance one’s own identity, increasing athletic skills, achievements in competition, staying physically fit and attractive, improving feelings of self-worth, and making new friends compared to recreational participation.

**TABLE 6**  
**COMPARISON OF SELF - ESTEEM BETWEEN MALE AND FEMALE ATHLETES**

	Gender	N	Mean	SD	t	df	Sig. (2tailed)
Rosenberg self-esteem score	Male	51	22.55	3.454	1.376	96	0172
	Female	47	21.51	4.010			

\*p<0.05

Table 6 reveals research sample (n = 98), the group of male athletes (M = 22.55, SD = 3.454, n = 51) has obtained a higher self-esteem score than the group of female athletes (M = 21.51, SD = 4.010, n = 47), df = 96, t = 1.376, p = .172 and is not significant at 0.05 level. Hence, there is no significant gender difference in self-esteem among early adolescent athletes.

Bowker, Gadbois and Cornock (2003) concluded sports participation does predict self-esteem, participants’ gender orientation and the type of sports in which they participate as moderating factors. Another study Ahmed, Mladenovic, et.al (2014) found level of self-esteem between male and female high school athletes was found significantly

different. In the present study finding shows that though there is no significant difference between early adolescent male and female athletes, males are having high self-esteem than females. It could be because the sample size involved in this study is less to make significant or generalizable results and also it can be because self – esteem of athletes are influenced by the self – perception of athletic capability irrespective of gender.

#### 4. CONCLUSION

The current study focused on the exploration on the effect of self-esteem among early adolescent athletes and non-athletes and among early adolescent athletes which includes competitive and recreational athletes. Another focus of the study was to find the impact of self-esteem among athletes across gender. It was found that there are significant differences in self-esteem among early adolescent athletes and non-athletes and among recreational participant and competitive participant. However, it was found that there is no significant gender difference in self-esteem among early adolescent athletes.

The findings can be used to increase and widen the scope for the further research by including samples both urban and rural as well as from different states and can offer ample opportunity and encouragement to both who participate in sports as well as non-athletes, which can protect against depression, suicidal ideation and can enhance psychological well- being by boosting self-esteem as well as increasing social support during the early adolescent period of developmental stage.

#### 5. PRACTICAL APPLICATION

Results of the study facilitated to understand the effect of self – esteem among early adolescent athletes compared to non-athletes. The results of the study can be used by educational institutions as well as sports institutions to understand and advocate the importance of participation in sports including regulation of emotions, achievement of autonomy, physical fitness, competence and acceptances of self especially at the developmental period of early adolescent. The findings can also help to understand participation in sports makes each individual motivated to take care of themselves and to persistently strive towards the fulfillment of personal goals and aspirations and can encourage athletes to continue in this field and as well as the non-athletes to consider joining such activity

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**RELATIONSHIP OF SELECTED MOTOR FITNESS COMPONENTS TO FIELD GOAL SPEED OF MALE UNIVERSITY BASKETBALL PLAYERS**

Inder Kerketta<sup>1</sup> & Dr. Ratnesh Singh<sup>2</sup>

**Affiliations:**

<sup>1</sup> Research Scholar, Department of Physical Education, GGV, Bilaspur (C.G.), India

<sup>2</sup> Associate Professor, Department of Physical Education, GGV, Bilaspur (C.G.), India

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**ABSTRACT**

The main purpose of the present study was to investigate relationship of selected motor fitness components to field goal speed of male university basketball players. For this purpose the researcher selected 20 male basketball players from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) and age ranged from 17-28 years. The selected motor fitness: agility was measured by applying the 10x4 yard shuttle run test and recorded in seconds; reaction time for finger and foot was measured by applying the nelson finger and foot reaction time test and recorded in seconds; speed was measured by applying the 50 yard dash run test and recorded in seconds and field goal speed was measured by applying the Johnson field goal speed test and recorded in counts. Descriptive statistics and Pearson Product Moment Coefficient of correlation with the significant level at 0.05 was used to investigate the correlations between selected motor fitness components to field goal speed. The all statistical analysed was using MS Excel and SPSS 16.0 version. The results of the study indicates that there was significant relationship found in agility, reaction time (foot) and speed in correlation between field goal speed ability and there was insignificant correlation found between reaction time (finger) and field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

**Keywords:** - Field goal Speed, Agility, Reaction Time (Finger and Foot) and Speed.

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## 1. INTRODUCTION

The motor fitness is an important factor of performance in basketball playing and it has been focus point for the researcher. Motor fitness components are qualities that athletes must develop to physically prepares for sports competition. Motor fitness is one of the major components of such as speed, endurance, agility, flexibility, co-ordination etc.

According to Johnson and Nelson – “Motor fitness is one’s ability to perform efficiency bases motor skills involving such elements as power, agility, speed, endurance and strength.”

Performance in competitive sports depends mainly on the physical ability of the sportsman as well his psychological and intellectual ability and technical and tactical capacity. The physical ability or in other words, physical fitness is expressed through strength, speed, endurance, flexibility, co-ordination, reaction time etc. of a sportsman. Kaibarta, L. N. (2016).

Response time is the ability to reactrapidly with accurateposition and be in command of to a stimulus such as sound or sight.Reaction time is the interval between the onset of a signal (stimulus) and the initiation of amovement response (Magill 1998).

The purpose of present study was to correlate the selected motor fitness components and field goal speed ability of basketball players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

## 2. METHODOLOGY

### 2.1 Selection of Subjects

For this study researcher randomly selected 20 male basketball players were selected form Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) and their age ranged between 17-28 years.

### 2.2 Selection of Variables:

1. Independent Variables: Agility, Reaction Time(Finger), Reaction Time (Foot), and Speed.
2. Dependent Variable: Field Goal Speed

### 2.3 Criterion Measures:

S. No.	Variables	Test Items	Measuring Units
1	Agility	10 x 4 Yard Shuttle Run Test	In seconds
2	Reaction Time (Finger)	Nelson Finger Reaction Test	In seconds
3	Reaction Time (Foot)	Nelson Foot Reaction Test	In seconds
4	Speed	50 Yard Dash Run Test	In seconds
5	Field Goal Speed	Johnson Field Goal Speed Test	In counts

## **2.4 Administration of Test:**

### **2.4.1. Field Goal Speed (Johnson Field Goal Speed Test)**

The subject was asked to take the any position under the basket and is required to make maximum number of baskets in 30 seconds. The total number of successful baskets in 30 seconds provides the score of an individual.

### **2.4.2. Agility (10 x 4 Yard Shuttle Run Test)**

Ten yards apart two parallel lines were marked on the ground. Two wooden blocks were placed behind one of the lines. The subject was asked to start from behind the other line. On command read go, timer starts the watch and the subjects runs towards the blocks, picks-up one block, run back to the starting line, places the block behind the starting line, runs back and picks-up the second block to be carried back across the starting line. As soon as the second block was placed on the ground, the timer stops the watch and records the time. Two trails were allowed to each subject. Scoring : The time of the better of the two trials was recorded to the nearest 10<sup>th</sup> of a second as the score of the subject.

### **2.4 3. Reaction Time (Nelson Finger Reaction Test)**

The tester asked a subject to sit in the chair with his fore arm and hand resting on the table in such a way that the tips of thumb and index finger are held in a ready to pinch position, about 3 or 4 inch beyond the edge of the table. The subjects were instructed to catch the stick by pinching together his thumb and index finger as soon as the stick timer was released by the tester. Each subject was given twenty trials. Scoring: Out of twenty trials, results of five fastest and five slowest trials, were discarded and the average of the middle 10 trials gives the score of an individuals.

### **2.4.4. Reaction Time (Nelson Foot Reaction Test)**

The subject was asked to sit on a table which is about one inch away from the wall with his shoe off. The subject positions his foot so that her ball of the foot was held about one inch from the wall with the heel resting on the table top about two inches from the table edge. The subjects were instructed to react as soon as the timer is dropped, by pressing the timer stick against the wall with the ball of the subject's big toe. Twentytrials were given to each subject. Scoring: Out of twenty trials, results of five fastest and five slowest trials, were discarded and the average of the middle 10 trials gives the score of a subject.

### **2.4 5. Speed (50 Yard Dash Run Test)**

All subjects asked to take the position behind the starting line and wait for signal. The tester gives commands ready, steady, go. At the command go, the timers start their respective stopwatches. All subjects start running as fast as possible till you reach the finish line. As soon as the subject crosses the finish line, the respective timer switches stop the stopwatch and records the time accurate up to 0.01 second. Only one correct trial is

permitted. Scoring :As soon as the subject crosses the finish line, the timer switches stop the stopwatch and recorded the time up to hundredth of a second.

### 2.5 Statistical Analysis

To find out the significance correlation between the selected motor fitness components and field goal speed of male university basketball players. The data were analyzed by applying descriptive statistics and Pearson Product Moment Coefficient test. The level of significance was set at 0.05.

### 3. RESULTS

The data were obtained by applying the 10 x 4 yard shuttle run test for agility, nelson finger and foot reaction tests for reaction time, 50 yard dash run test for speed and basketball playing ability data were obtained by applying the Johnson Field Goal Speed Test. All the individuals' score was used to correlate the level of field goal speed of male university basketball players.

**TABLE - I**  
**DESCRIPTIVE TABLE OF SELECTED MOTOR FITNESS COMPONENTS AND FIELD GOAL SPEED OF BASKETBALL PLAYERS**

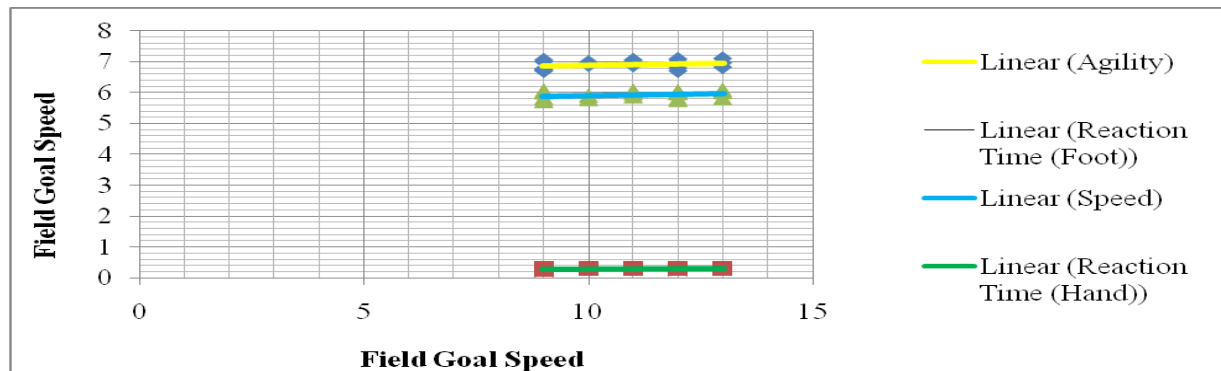
Variables	Mean	Std. Deviation	N
Field Goal Speed	10.8500	1.38697	20
Agility	6.9165	0.12811	20
Reaction Time (Finger)	0.296045	0.0146417	20
Reaction Time (Foot)	0.296310	0.0080987	20
Speed	5.9215	0.11481	20

**TABLE - II**  
**COEFFICIENTS OF CORRELATION OF FIELD GOAL SPEED WITH MOTOR FITNESS COMPONENTS OF BASKETBALL PLAYERS**

Variable	'r' value	Sig. (2-tailed)
Field Goal Speed	Agility	.444*
	Reaction Time (Finger)	.244
	Reaction Time (Foot)	.452*
	Speed	.510*

\*level of significant set at  $r_{0.05}(2, 18) = 0.444$

Table - II shows that the calculated 'r' value of agility ( $r = .444$ ), reaction time (finger) ( $r = .244$ ), Reaction Time (Foot) ( $r = .452$ ) and speed ( $r = .510$ ) were correlates maximum with the field goal speed except then reaction time (finger) were found insignificant correlation of basketball players. These variables (agility, reaction time foot and speed) have significant relationship with field goal speed at 0.05 level of significance.



**Figure - 1 Graphical representation of scores of selected motor fitness components and field goal speed of basketball players**

#### 4. DISCUSSION

The finding of the study shows that the agility, reaction time (foot) and speed were significantly correlates to the field goal speed ability and there was insignificant correlate to the field goal speed ability. It was also supported by Savarirajan, R. (2016) had conducted a study on analysis of physical fitness components and playing ability of Tamilnadu badminton junior ranking players and the finding shows that the clear skill was positively correlated with speed and agility. Dhaliwal, G. S., Gill, A. S., & Sandhu, R. S. (2016) indicated that the significant differences found between interuniversity and inter-college male cricketers on reaction time, speed agility. Hodgkins, J. (1963) concluded that male were faster in relation to reaction time and speed than females and found relation existed between speed of movement and speed of reaction.

#### 5. CONCLUSIONS

On the basis of findings following conclusions have been made -

- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to agility ( $r = .444, p < 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to reaction time (finger) ( $r = .244, p > 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to reaction time (foot) ( $r = .452, p < 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to speed ( $r = .510, p < 0.05$ ).

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**EFFECT OF YOGASANAS AND SURYANAMASKAR ON SELECTED  
PSYCHOLOGICAL VARIABLES AMONG COLLEGE MEN  
VOLLEYBALL PLAYERS.**

Dr. S.V. Arun<sup>1</sup>

**Affiliations:**

<sup>1</sup> Director of Physical Education, C. Kandaswami Naidu College for Men, Chennai - 600102.

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**ABSTRACT**

The purpose of the study was to find the Effect of Yogasanas and Suryanamaskar on selected psychological variables among college men Volleyball players. To achieve the purpose ninety inter collegiate men volleyball players aged between eighteen to twenty five were selected as subjects. The subjects were divided into three equal groups. Group I Undergone Yogasanas, Group II Undergone Suryanamaskar, Group - III acted as control group. The subjects were divided into three groups of 30 subjects each. The duration was restricted to six weeks and number of session confined to six days. The physiological variables like anxiety and negative feelings of Volley ball players found significant reduction due to Yogasanas and Suryanamaskar as compared to Control Group. The psychological variables like self concept and skill learning found significant improvement due to Yogasanas and Suryanamaskar. Pretest, Post test, Adjusted mean, "F" ratio and Scheffe's test were used to analyze the data and level of confidence was set at 0.05

**Key Words:** Yogasanas, Suryanamaskar, Anxiety, Self Concept, Volleyball players

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## 1. INTRODUCTION

Yoga is an ancient discipline designed to bring balance and health to physical, mental, emotional, spiritual dimension of the Individual. Yoga in its own way a system of knowledge, is a science of being, a psychophysical system. Yoga means to attain physical and mental purification. Yoga stretching is recommended from head to foot which will not only affect all the muscles of a particular system (or) organ but almost all the muscles involved in the games.

Yoga is a tool that can deepen and benefit anyone, of any religion. It does not conflict with personal beliefs; it is simply a vehicle to help one transform oneself by promoting conscious connection with oneself, the world, and the highest truth. There are many traditional paths of yoga, including tantra, mantra, kundalini, bhakti, jnana, karma, raja yoga, and others, all of which have their own techniques to awaken these connections. According to the classic text of the Yoga Sutras of Patanjali, “yoga” is the complete “inhibition of the modifications of the mind” (Taimini, 1999) or quieting of the constant chatter in one’s mind so that our True Selves can manifest, rest in our own true nature and be free of suffering. Disease, as described in the sutras, is said to be an impediment to spiritual practice, growth and freedom from suffering (Taimini, 1999). Traditional yogic practices include breath control and techniques (pranayama), meditation (including mindfulness), the adoption of specific bodily postures (asanas) and self-reflection (Taimini, 1999 & Feuerstein, 2008)).

Yoga is a definite means of physical, mental, emotional and spiritual development, as it improves, strengthens and develops both the physical and mental personality. Everybody wants a fit and efficient body and mind. Remember that the mind and body act and react on each other. Mental ailments cause physical ailments and vice versa (Satyananda,2005)

Within the past decade, yoga has infiltrated not only Western culture, but also Western medicine. The more we learn about this ancient practice, the more we realize that its benefits go far beyond increased flexibility and muscle tone. A common misunderstanding is that yoga predominantly focuses on increasing flexibility; however, although Hatha Yoga, or the physical practice of yoga, does emphasize appropriate postural alignment, musculoskeletal strength and endurance as well as balance, the study and practice of yoga incorporates mindfulness-based practices such as mindful breathing techniques, focused concentration, meditation and self-reflection.

Asanas are special patterns of postures that stabilize the mind and the body through static stretching (Gharote and Ganguly, 2001). Regular practice of sun salutation regulates pingala nadi (right nostril), whether it is underactive or overactive, thus leading to a balanced energy system at both the mental and physical levels (Vivekananda, 2005)

Yogasanas and Suryanamaskar is very important for youth, children. With this practices they can reduce their anxiety level and increase the skill learning. The brain and spinal cord constitute central nervous system and nervous impulse could be controlled by practicing yogasanas properly and regularly. It also gives massage to spinal cord. This is the scientific method of exercise for controlling tension, anxiety and improving self concept, skill learning based on the rules governing the working of the muscle in the body which are under control of the will.

Prasanna & .Vaithianathan (2016) find out effect of varied yogic practices on selected psychological variables among obese men. The result of the study indicated the significant improvement in self-confidence after the experimental period .

Jayachandran (2014) revealed that the experimental group shown the significant improvement in all the selected variables where as in control only 50 m dash and vital capacity having significant improvement and all the remaining variables are not having any significant improvement. The results revealed the effectiveness of yogasanas in physical fitness, physiological systems and psychological efficiency of school students.

Sharma (2014) revealed that the yogic practices (suryanamaskar) is one of the best tool to manage the stress level especially among the students and provides the individual with refreshing experiences, and manage the stress to a great level and also the individual get rid of taking psychotic and mood refreshing drugs.

Laxmi and Murugavel (2013) indicated that eight weeks asanas and the pranayama training programme significant produced changes in mood state anxiety and stress. Tripathi, and Bharadwaj (2013) showed that self-concept and attitude of school boys were improved significantly among Surya Namaskara group after three month of practice Surya Namaskara as a treatment. Kundu and Pramanik (2014) indicated improvement in anxiety and self concept of school going children by practicing asanas, pranayama and combination of asana pranayama

Many studies have proved that yoga and meditation are beneficial in cases of psychiatric and psychosomatic disorder like stress, aggression, anxiety, depression, mental retardation, hyper tension, diabetes, etc (Mark 2004). Lark (1993) said that practicing Yoga will “provide effective relief of anxiety and stress.

Multiple studies have shown that yoga can positively impact the body in many ways, including helping to regulate blood glucose levels, improve musculoskeletal ailments and keeping the cardiovascular system in tune. It also has been shown to have important psychological benefits, as the practice of yoga can help to increase mental energy and positive feelings, and decrease negative feelings of aggressiveness, depression and anxiety (Stephens, 2017).

## **2. METHODOLOGY**

### **2.1 Selection of Subjects**

To achieve the purpose ninety (N=90) inter collegiate men volleyball players aged between eighteen to twenty five were selected as subjects. The subjects were divided into equal groups of thirty subjects each. The duration of the experimental period was restricted to six weeks and number of session per work confined to six days.

### **2.2 Selection of Variables**

Variables are the conditions that the experimenter manipulates controls or observes. The variables are anxiety, self concept, negative feelings and skill learning. Dependant variables: Anxiety and Self concept, Independent variables: Yogasanas and Suryanamaskar

**3. RESULTS**

**TABLE 1**  
**ANALYSIS OF CO-VARIANCE FOR YOGASAN, SURYA NAMASKAR AND CONTROL GROUPS ON ANXIETY OF COLLEGE MEN VOLLEYBALL PLAYERS**

	Yogasan	Surya Namaskar Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F-ratio
Pretest mean	53.23	52.43	52.87	B	9.62	2	4.811	0.20
				W	2056.20	87	23.63	
Post test mean	50.16	49.67	52.63	B	151.36	2	75.68	3.51*
				W	1873.80	87	51.54	
Adjusted Mean	49.82	50.03	52.61	B	145.08	2	72.54	26.96*
				W	231.381	86	2.69	

\*Significant at .05 level

F 0.05 (2, 87) = 3.1

As shown in Table 1 obtained 'F' value on the scores pretest means 0.20. The analysis of post test means proud that the obtained F value 3.51 was greater than the required value of 3.1 to be significant at 0.05 level. Taking into consideration of the pretest means, adjusted post test means were done and the obtained F value 26.96 was greater than the required value of 3.1. Hence it was accepted that Yogasanas and Suryanamaskar practices significantly decreased the anxiety.

As the ANCOVA indicated significant difference among the groups on anxiety , the Sceffe's Test of Post-hoc comparisions was applied to find out the significance of difference between ordered paired adjusted means of different groups and data has been presented in table 2

**TABLE 2**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN ADJUSTED PAIRED FINAL MEANS OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON ANXIETY OF COLLEGE MEN VOLLEYBALL PLAYERS**

M				
Yogasan	Surya Namaskar Group	Control Group	Mean Difference (MD)	Confidence Interval (C.I.)
52.61	49.82	-	2.79*	1.05
52.61	-	50.03	2.58*	
-	49.82	50.03	0.21	

\*Significant at 0.05 level

The data on significance of difference between ordered paired and adjusted final means of experimental groups and control group in table 4 indicated significant difference between yogasan group and Surya Namaskar group (2.79), between yogasan group and control group (2.59). significant difference was not found between Surya Namaskar group and control group (0.21)

**TABLE 3**  
**ANALYSIS OF CO-VARIANCE FOR EXPERIMENTAL GROUPS AND CONTROL GROUP ON SELF CONCEPT OF COLLEGE MEN VOLLEYBALL PLAYERS**

	Yogasan	Surya Namaskar Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F-ratio
Pretest mean	29.76	30.70	29.90	B	29.27	2	14.63	0.93
				W	1366.33	87	15.70	
Post test mean	33.36	34.07	29.90	B	298.69	2	149.34	9.01*
				W	1441.53	87	16.57	
Adjusted Mean	33.50	33.45	30.38	B	189.80	2	94.90	14.31*
				W	570.117	86	0.63	

\*Significant at .05 level  
 $F_{0.05}(2, 87) = 3.1$

An shown in table 3 obtained F value on the scores pre test means 0.93. The analysis of post test means proud that the obtained F value 9.01 was greater than the required value of 3.1 to be significant at 0.05 level. Taking in to consideration of the pre test means adjusted post means were done. The obtained F value 14.31 was greater than required value of 3.1. Hence it was accepted that Yogasanas and Suryanamaskar practices significant increased self concept.

As the ANCOVA indicated significant difference among the groups on anxiety , the Sceffe’s Test of Post-hoc comparisions was applied to find out the significance of difference between ordered paired adjusted means of different groups and data has been presented in table 4

**TABLE 4**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN ADJUSTED PAIRED FINAL MEANS OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON SELF-CONCEPT OF COLLEGE MEN VOLLEYBALL PLAYERS**

Means			Mean Difference (MD)	Confidence Interval (C.I.)
Yogasan	Surya Namaskar Group	Control Group		
30.38	33.50	-	3.12*	1.66
30.38	-	33.45	3.08*	
-	33.50	33.45	0.05	

\*Significant 0.05 level

The data on significance of difference between ordered paired and adjusted final means of experimental groups and control group in table 4 indicated significant difference between yogasan group and Surya Namaskar group (3.12), between yogasan group and control group (3.08). significant difference was not found between Surya Namaskar group and control group (0.05)

#### 4. DISCUSSION

Anxiety was measured through spielberger's questionnaire. The result present in Table (1 & 2 showed significant difference in the adjusted means. The obtained F value was greater than the required value of post hoc analysis. The obtained adjusted means proved that there was significance difference existed between control group and suryanamaskar. It was also proved there was significant difference between yogasanas, suryanamaskar and control group.

Self concept was measured through Dr. Mukta Rani Rastogi questionnaire. The result present in Table (3 & 4 ) showed significant difference in the adjusted means. The obtained F value was greater than required value of post hoc analysis. The obtained adjusted means proved that that there was significance difference between control group and Yogasanas. It was also proved there was significant difference between suryanamaskar, yogasanas and control group.

#### 4. CONCLUSION

The investigator formulated hypothesis stating that a significant difference on psychological variables among college men volleyball players due to yogasanas and suryanamaskar. The result proved that Group I and Group II showed significant different compare to Group III. The dependent variables showed improvement due to independent variable and the same were improved at 0.05 level of confidence. Within limitation and delimitation of this study, it was concluded that there was significant reduction in anxiety and there was significant improvement in self concept comparing to control group.

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**RELATIONSHIP BETWEEN PASSIVE STRAIGHT LEG RAISING TEST AND V -SIT AND REACH TEST IN MEASURING THE HAMSTRING FLEXIBILITY.**

**Pooja Attrey<sup>1</sup>, Mukesh Yadav<sup>2</sup> & Dr Sarita Singh<sup>3</sup>**

**Affiliations:**

- <sup>1</sup> Assistant Professor, TDTR DAV IP&R, Yamunanagar, Haryana
  - <sup>2</sup> Assistant Professor, TDTR DAV IP&R, Yamunanagar, Haryana
  - <sup>3</sup> Clinical Physiotherapist, TDTR DAV IP&R, Yamunanagar, Haryana
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**ABSTRACT**

Background: Many static and dynamic tests have been used in sports and clinical settings to assess hamstring muscle flexibility. However no or very less documented research is available to find relationship between the two of otherwise commonly used tests like passive straight leg raise(PSLR) and V-sit and reach(VSR) test results. Objective: To document relationship between PSLR and VSR results in measuring hamstring flexibility. Study Design: Co relational design. Methodology: 142 healthy adult females aged between 18-25 (out of 150) years were short listed on the basis of inclusion criteria. They were then explained the procedure of the study. The mean of three readings for both PSLR(dominant lower limb) and VSR were taken and co related using descriptive and inferential statistics and Graph Pad In stat version 3.05. Results: The results of this study indicated a significant relationship between the VSR and SLR, for the right ( $r= 0.5757$ ,  $p < 0.0001$ ) and left lower limbs ( $r = 0.4666$ ,  $p < 0.0001$ ).Conclusion: Concluding that VSR and PSLR results are positively correlated, it is recommended that the VSR test can be used as a clinical diagnostic tool in assessing hamstring flexibility.

**Key words:** PSLR, VSR, Hamstring Flexibility

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## 1. INTRODUCTION

Flexibility comes from a Latin term *flexibilis* which simply means “to bend.” Flexibility is defined as the ability of a joint to move through a full range of movement.<sup>1</sup> This property of the musculoskeletal system can be examined by two kinds of biomechanical measurements: Static flexibility and Dynamic Flexibility. Static flexibility is a clinical measurement that defines the amount of motion at a joint or group of joints. Dynamic flexibility refers to the increase in resistance with muscle elongation for a given range of motion and can be quantified in terms of stiffness.<sup>2</sup> Adequate flexibility is an important characteristic of physical and health related fitness.<sup>4</sup> Assessments of flexibility measure the ability of a of skeletal muscle and tendon to lengthen. Flexibility really depends on the soft tissues (muscle, tendon, ligaments) of a joint rather than the bony structure.<sup>3</sup> Flexibility and stretching comprise what can essentially be recognized as the cornerstone of injury prevention, muscle recovery, and increased mobility for exercise enthusiasts.<sup>3</sup> Lack of hamstring flexibility has been associated with low back pain, postural deviations, gait limitations, risk of falling, susceptibility to musculoskeletal injuries.<sup>4</sup> Because of the importance of flexibility, fitness and sports medicine professionals typically assess an individual level of flexibility before prescribing an exercise, sports training, or physical rehabilitation program.<sup>5</sup>

There are a number of factors that can influence a person’s flexibility, including: Genetics, Connective tissue elasticity, Strength of opposing muscle groups, Gender, Age, Activity level and Previous injuries.<sup>1</sup> Inflexible muscle could make the musculotendinous unit susceptible to injury<sup>6</sup>, especially in two joints muscles like hamstring.<sup>7</sup> Muscle flexibility is generally measured by the joint range of motion (ROM) <sup>8</sup>

### 1.1 Hamstring Muscle

The hamstring muscles are the group of three muscles including semimembranosus, semitendinosus and biceps femoris, which originates at the pelvis, attaching at the ischium attaching to the fibula and tibia.<sup>9</sup> The hamstrings cross and act upon two joints – the hip and the knee. Semitendinosus and semimembranosus extend the hip when the trunk is fixed; they also flex the knee and medially (inwardly) rotate the lower leg when the knee is bent. The long head of the biceps femoris extends the hip as when beginning to walk; both short and long heads flex the knee and laterally (outwardly) rotates the lower leg when the knee is bent.

The hamstrings play a crucial role in many daily activities, such as walking, running, jumping, and controlling some movement in the trunk. In walking, they are most important as an antagonist to the quadriceps in the deceleration of knee extension.<sup>9</sup> Hamstring Muscle Length (HML) differed significantly between genders, females demonstrating greater flexibility than their male counterparts.<sup>10, 16</sup>

Factors that are also responsible for the frequent strains observed in the hamstring muscle are:

1. Lumbo-pelvic pathology or imbalance
2. Inadequate muscle flexibility
3. Imbalance in Q:H Strength ratio
4. Faulty running mechanics<sup>11</sup>

Hamstring muscles flexibility is an important aspect of a treatment program aimed at decreasing the likelihood of hamstring muscles injury.<sup>12</sup> Static flexibility tests are used, which are based on linear and angular measures of the motion of a joint or group of joints



measured by goniometers and inclinometers. Commonly accepted field tests of static flexibility include, among others, the sit and reach test, which evaluates combined flexibility of the lower back and hips, and the supine straight leg flexion test, which evaluates hamstring and hip flexor flexibility.<sup>2</sup>

### **1.2 Straight Leg Raise Test**

The straight leg raise (SLR) test is widely reported in the literature as useful for indicating hamstring muscle length and diagnosing sciatica and nerve root irritation. Several variations of this test have been developed to assist in the diagnostic process like passive ankle dorsiflexion. Added near the limit of pain free SLR, to put tension on the sciatic nerve and its roots. In the absence of nerve root irritation, however, passive ankle dorsiflexion has been shown to limit SLR.<sup>13</sup> Although the SLR test is most often described as a passive test, it is sometimes performed actively.

Active testing may be preferred over passive because the force applied to the hamstring muscles during active SLR may be more constant from test to test<sup>14</sup>. When passive tests are used to assess muscle length and joint angles, the results obtained are partially dependent on the force that is applied during measurement.<sup>13</sup>

The straight leg raise (SLR) test has been found in studies to have prevalent acceptance as a criterion measure for hamstrings flexibility over the Active Knee Extension (AKE) test due to the simplicity and ease of use in clinical measurement of hamstrings flexibility as compared to AKET.<sup>11</sup>

Ligamentous constraints and bony congruencies also limit motions depending on the joint and the motion being tested. For more static flexibility tests, the limits of motion are determined by the participant's tolerance of stretched position hence they are not truly objective measures of flexibility.

### **1.3 Sit and Reach Test**

The sit and reach (SR) test is a field test used to measure hamstring and low back flexibility. This test is present in most health related fitness test batteries because it is believed that maintaining hamstring and low back flexibility may prevent acute and chronic musculoskeletal injuries and low back problems, postural deviations, gait limitations, and risk of falling<sup>4,11</sup>. There is little research evidence that any kind of SR adequately measures low-back flexibility. Such field measures are only moderate indicators of hamstring extensibility. However, the SRs are frequently used to evaluate the hamstring muscle extensibility because the procedures are simple, easy to administer, require minimal skills training and are particularly useful in large scale extensibility evaluation in the field setting.<sup>11</sup>

Types of Sit-and-Reach Tests: Sit-and-reach test (SR);, V sit-and-reach test (VSR);, Chair sit and reach test (CSR);, Back saver sit-and-reach test (BS);, Modified back saver sit-and-reach test:

Regardless of the minor differences in administration procedures, participant postures, and the equipment used in various sit-and-reach test protocols, the literature agreed that sit- reach test produced

some validity in hamstring flexibility assessment but poor validity as a measure of lower back flexibility. <sup>15</sup> The simultaneously stretching both hamstrings in the classical sit-and-reach test may result in excessive posterior disc compression due to the anterior portions of the vertebrae being pressed together.<sup>16</sup> There is however a paucity of

documented studies examining the direct relationship between V sit and reach and the straight leg raise tests, which are used to measure hamstring flexibility.<sup>17</sup> There seems to be a lack of homogeneity in some of these studies.<sup>11</sup> This study therefore looked into the relationship between hamstring flexibility scores obtained by V sit-and-reach and straight leg raise tests.

To find out the relationship between straight leg raising test and V sit and reach test in measuring hamstring flexibility.

## **2. METHODOLOGY**

### **2.1 Sample**

A total of 150 female participants were selected by convenient sampling method for the study on the basis of inclusion and exclusion criteria. The age ranged of the subjects was 18 to 25 years. Body mass Index of the female participant was between 19-22 kg. The subjects suffering from soft tissue injuries of lower limb, Fractures/ Dislocations., Hyper-mobility of lower limb joint. Muscle imbalance of lower limb and low back pain in last 2 month were excluded from the study.

### **2.2 Testing Procedure**

On the basis of inclusion criteria, 150 females were selected for the study. After taking their consent 142 subjects (8 dropped out) were finalized for the study. Following the warm up protocol, subjects were asked to perform three trials of PSLR(left and right leg) and VSR test in randomized order and the average of each test was used for the data analysis. The subjects were allowed for rest for 5min between tests.

#### **2.2.1 Passive straight leg raise test**

Subject lies supine on the plinth.. Subject's leg was passively moved with into hip flexion ,with knee extended, until tightness was felt. At this point, angle between the stationary and movable arms of the goniometer was noted and recorded in degrees as a measure of the flexibility of the hamstring muscle<sup>12</sup>, by placing axis of the goniometer aligned to the axis of the hip. The stationary arm was positioned in line with the trunk and the movable arm in line with the femur.

#### **2.2.2 V-sit and reach test**

Mark a straight line two feet long on the floor as the baseline. Draw a measuring line perpendicular to the midpoint of the baseline extending two feet on each side and marked off in half-inches. The point where the baseline and measuring line intersect is the "0" point. Subjects sits on floor with measuring line between legs and soles of feet placed immediately behind baseline, heels 8-12" apart and clasps thumbs so that hands are together, palms down and places them on measuring line. With the legs held flat by a partner, subject slowly reaches forward as far as possible, keeping fingers on baseline and feet flexed. After three practice tries, she holds the fourth reach for three seconds while that distance is recorded. Legs must remain straight with soles of feet held perpendicular to the floor (feet flexed). Subjects should be encouraged to reach slowly rather than "bounce" while stretching. Scores,

recorded to the nearest half inch, are read as plus scores for reaches beyond baseline, minus scores for reaches behind baseline.



Figure 1: Measurement of VSR test

### 3. RESULTS

Descriptive statistics of mean, range and standard deviation was used for all the variables measured. Inferential statistics of Pearson product moment correlation was used to determine the relationship between V-sit and reach test and the criterion goniometric measurement (SLR test) for both right and left lower limbs using the Graph pad Instat version 3.05.

**TABLE 1**  
**DESCRIPTIVE STATISTICS OF PHYSICAL CHARACTERISTICS OF PARTICIPANTS**

1	Variables	Mean± SD
2	Age(years)	21.5±2.44
3	Height(cms)	160.7±5.6
4	Weight(kg)	56.5±4.18
5	BMI	21.96±0.71

**TABLE 2**  
**SHOWING MEANS AND RANGE OF SLR1 AND V-SIT AND REACH TEST.**

	Mean	Range	p-value
SLRrt(°)	94.37	75-115	<0.0001
V-sit and reach test(cm)	0.852	-7.2-8.1	

**TABLE 3**  
**SHOWING MEANS AND RANGE OF SLR2 AND V-SIT AND REACH TEST.**

Sr. no	Mean	Range	p-value
SLRlt(°)	82.54	65-105	<0.0001
V-sit and reach test(cm)	0.852	-7.2-8.1	

**TABLE 4**  
**SHOWING VARIATIONS IN READINGS OF STRAIGHT LEG RAISE TEST BETWEEN**  
**DOMINANT AND NON DOMINANT SIDE.**

	Mean	SD	Range	p-value
SLR(right leg)	94.37	7.36	75-115	<0.0001
SLR(left leg)	82.54	7.99	65-105	<0.0001

#### 4. DISCUSSION

The purpose of this study was to determine the correlation between hamstring flexibility scores obtained by the VSR and SLR tests. The results of this study indicated a significant relationship between the VSR and SLR, for the right ( $r= 0.5757$ ,  $p < 0.0001$ ) and left lower limbs ( $r = 0.4666$ ,  $p < 0.0001$ ) as strongly supported by Domholdt (2000), while the result obtained in the study of Baltaci et al (2002) showed moderate correlation coefficient

James W. Youdas, David A. Krause, Edward Laskowski<sup>10</sup> supports that there is a statistically significant effect of gender on HML, with women having more HML than their male counterparts for both dependent measures examined in the study. In contrast a study of comparison of hamstring quadriceps muscle strength ratio across the age groups by Jaiyesimi ao, Jegedeja relieved no significant gender difference was found among the subjects in the age groups 11-20 years and 41-60 years but in the age group 21-40 years the male subjects had a significantly higher Hamstring Quadriceps strength ratio than their female counterparts. Denise M. Cameron, Richard W. Bohannon, Steven V. Owen<sup>13</sup> stated that although the SLR test is most often described as a passive test, it is sometimes performed actively. Active testing may be preferred over passive because the force applied to the hamstring muscles during active SLR may be more constant from test to test<sup>15</sup>. When passive tests are used to assess muscle length and joint angles, the results obtained are partially dependent on the force that is applied during measurement. Baltaci, G., Un N., Tunay, V., Besler, A. & Gerceker, S. (2002)<sup>19</sup> stated that the straight leg raise (SLR) test has been found in studies to have prevalent acceptance as a criterion measure for hamstrings flexibility over the Active Knee Extension (AKE) test due to the simplicity and ease of use in clinical measurement of hamstrings flexibility as compared to AKET. However, like most static flexibility tests, both the SLR and AKE tests are thought to be limited by the extensibility of the hamstring muscle. Due to the belief that maintaining hamstring and low back flexibility may prevent low back pain syndrome, sit and reach test becomes one of the most imp common field test in physical fitness batteries to evaluate the flexibility of subjects. In this connection, many studies regarding the validity and reliability of sit and reach test were reported and a number of sit and reach test protocols were proposed. Often test administrator desires to select a test that allows greatest validity and reliability within the least discomfort to subjects by Stanley sai-chuen hui and pak y. yuen.<sup>17</sup> Modified versions of the Sit-and-reach test include a V sit-and-reach test and the Hoeger and Hopkins 20 modified sit-and-reach test. When the criterion-related validity of the various forms of sit-and-reach tests were compared for men, the modified back-saver sit-and-reach and the classical sit- and-reach but yielded as the V sit-and-reach. This is probably due to the horizontal trunk position when performing the MBBS and V sit and reach tests without the use of sit and reach box.

Regardless of the minor differences in administration procedures, participant postures, and the equipment used in various sit-and-reach test protocols, the literature agreed that sit- and- reach tests produced moderate validity in hamstring flexibility assessment but poor validity as a measure of lower back flexibility Martin, Jackson, Morrow, & Liemohn,. Warmbrodt stated that the sit-and-reach test favors people with long arms in relation to their legs. Some investigators actually do believe long arms and legs are an advantage when performing the sit-and-reach test (1999). While other investigators have found that longer limb-length in a person does not favor greater results in the sit-and-reach test (1999). The forward reach score is the sum of anthropometric factors, scapular abduction, spine and hip flexion.

A study by Hui et al indicated that arm leg length discrepancies (Hoeger et al, ; Hopkins and Hoeger, )20 and shoulder and scapula flexibility may play a role in allowing some individuals to achieve higher forward reach scores on SR and modify the concurrent validity. However, other studies found little association between anthropometric characteristics and forward reach score. In contrast, the norm referenced Passive Straight Leg Raise Test, described previously, allows the test administrator to assess the hamstring separately from the lumbar extensor musculature. It is anticipated that this test will provide exercise physiologists and physical educators with a reliable alternative to the Sit-and-Reach Test when assessing the hamstring flexibility.

## 5. CONCLUSION

The study concludes that V sit-and-reach test has a positive relationship with the criterion goniometric measure (SLR) for hamstring muscle flexibility. It is however less comfortable for individuals who have problems sitting with legs fully extended. Based on the findings of this study, it is recommended that the V sit-and reach test can be used by Physiotherapists, Physical Educationists, Athletic trainers and others involved in sports in assessment of hamstring flexibility in young adults, since it has high correlation coefficient with the criterion goniometric measure.

## 6. LIMITATIONS

Only female subjects were included in the sample. Data was collected from limited geographical area.

## 7. FUTURE SCOPE

Further research on therapeutic use of VSR can be done in athletic training and subjective upper limb reach can also be taken into account.

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**EFFECT OF YOGIC PRACTICES ON EMOTIONAL AND MENTAL  
ENHANCEMENT OF SPORTSPERSONS: AN  
EXPERIMENTAL STUDY**

Kapil Kumar Sahu<sup>1</sup> & Dr. Sudhir Rajpal<sup>2</sup>

- <sup>1</sup> M.Phil. Student, Department of Physical Education, Dr. C.V. Raman University, Kota Bilaspur C.G.
- <sup>2</sup> .Assistant Professor, Department of Physical Education, Dr. C.V. Raman University, Kota Bilaspur C.G.

**ABSTRACT**

In the present study effect of one month yogic exercise program was observed on positive mental health of male sportspersons. To conduct the study 100 intercollegiate male sportspersons (Average age 21.32 years) from the state of Uttarakhand were selected as sample. The selected male sportspersons were divided equally into experimental and control group. 50 male sportspersons from experimental group took part in one month yoga program while subjects of control group did not take part in this program. To assess positive mental health of selected male sportspersons just prior to commencement of study period and after completion of study period, Positive Mental Health Inventory prepared by Agashe and Helode (2007) were used. Result reveal that after taking part in one month yogic exercise program, the positive mental health of male sportspersons enhanced significantly while no significant change was observed in positive mental health of male sportspersons belonging to control group. It was concluded that one month yogic exercise program is beneficial for strengthening the positive mental health of male sportspersons.

**Keywords :** Positive mental health, male sportspersons, yoga

## 1. INTRODUCTION

WHO defined mental health as feeling assured about doing certain work, elevated level of self confidence and full of creative ideas. To achieve maximum effectiveness and happiness in life, good mental health is required (Meninger, 1930). During the development of concept of mental health, psychologists tried to explore the positive side of mental health. They included good physical health, emotional and mental well-being, good coping skills while defining positive mental health. The pioneer in defining positive mental health is Chaplin (1975). According to Chaplin, "mental health is a state of good adjustment with a subjective state of well-being, zest for living, and the feeling that one is exercising his talents and abilities,"

Strupp and Hadley (1977)<sup>8</sup> further clarified the concept of positive mental health by adding dimensions such as self-acceptance, ego-strength and philosophy of life in it. In sports settings the importance of positive mental health was also highlight by Tiwari and Agashe (2016) in their study on kho-kho players. Since ages mental strengthening by yoga has also been propagated by many scientists through their studies [Carrington et al. (1980), Baldwin (1999), Deshpande et al. (2008), Knobben (2013)]. Hence it would be interesting to know whether yoga is equally effective in enhancing the emotional and mental well-being of sportspersons? In order to address this question, the present study was planned.

In the present study effect of one month yogic exercise program was observed on positive mental health of male sportspersons. It was also hypothesized that "one month yoga exercise program will have beneficial effect on positive mental health of male sportspersons".

## 2. METHODOLOGY

### 2.1 Sample

To conduct the study 100 intercollegiate male sportspersons (Average age 21.32 years) from the state of Uttarakhand were selected as sample. The selected male sportspersons were divided equally into experimental and control group. 50 male sportspersons from experimental group took part in one month yoga program while subjects of control group did not take part in this program. The selection of sample was based on purposive sampling.

### 2.2 Instrument

Three dimensional positive mental health inventory with self acceptance, ego strength and philosophy as its sub variables prepared by Agashe and Helode (2007) were used to assess emotional and mental wellbeing of selected male sportspersons. It consists of 36 questions. The test-retest reliability coefficient of this inventory is 0.723.

### 2.3 Yogic Exercise Program:

One month yoga exercise program was prepared by the researcher with inputs from yoga experts. Asanas with supine, prone and sitting position such as Savasan, Ardha, Chakrasan, Padmasan, Pranayam, OM chanting and Anulom Vilom etc. were part of this yogic exercise program of one hour duration.

### 2.4 Procedure

After selecting 100 intercollegiate male sportspersons purposively, they were divided equally into experimental and control group. Subjects belonging to experimental group took part in one month yoga exercise program of one hour per day for five days in a



week. Administration of positive mental health inventory was done twice i.e. before the commencement of study period and secondly after the completion of study period. The pre post response of the subjects on JPMHI was scored off and put to statistical analysis. Results shown in table 1.

### 3 RESULTS

**TABLE 1**  
**PRE AND POST TEST STATISTICS OF POSITIVE MENTAL HEALTH OF MALE**  
**SPORTSPERSONS BELONGING TO EXPERIMENTAL AND**  
**CONTROL GROUP**

Male Sportspersons	N	Positive Mental Health		Mean Diff.	t
		Pre-Test	Post Test		
		Mean ± S.D.	Mean ± S.D.		
Experimental Group	50	17.88±4.56	20.56±4.00	2.68	4.39**
Control Group	50	18.10±4.82	18.18±4.72	0.08	0.83

\*\* Significant at .01 level

Results shown in table 1 show that in experimental group, mean scores on positive mental health differ before yoga exercise program (M=17.88) and after yoga exercise program of one month (M=20.56) at .01 of statistical significance. The mean difference of 2.68 shows that after participating in especially designed yoga program mean positive mental health scores was increased significantly as compared to what it was before the commencement of study period. (t=4.39, df=49, p<.01).

No significant change in mean positive mental health scores of subjects belonging to control group during one month of study period. The mean positive mental health score before the commencement of study period was 18.10 which became 18.18 after the completion of one month study period. (t=0.83, df=49, p.>05)

### 4. DISCUSSION

Result indicates significant and positive effect of one month yoga program on positive mental health of intercollegiate male sportspersons. As per yoga principles controlling the prana one can control the mind. (Swatmarama, 1998) Hence the results are in accordance with previous theories regarding the efficacy of yoga in enhancing emotional and mental well-being.

### 5. CONCLUSION

On the basis of results it was concluded that positive mental health of male sportspersons can be strengthened by incorporating a suitable yoga exercise program of certain duration.

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**SURVEY ON BODY MASS INDEX AND WELLNESS OF VETERAN SPORTS PERSON IN MEDINIPUR CITY**

**Amit Jana<sup>1</sup> & Jai Shankar Yadav<sup>2</sup>**

**Affiliations :**

- 1 M. Phil Student, Dr. C.V. Raman University, Kargi Road, Kota, Bilaspur
- 2 Assistant Professor, Department of Physical Education, Dr. C.V. Raman University, Kota Bilaspur C.G.

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**ABSTRACT**

The purpose of the study was to find out the actual BMI and wellness of veteran sports persons aged above 60 year in Medinipur city area. A sample of 100 veteran sports person was selected by the researcher from the Medinipur City The selection of sample was purely based on Stratified random sampling method. Body Mass Index (B.M.I) and Awareness of wellness were taken for this study from the veteran sports person of Medinipur City. BMI was calculated by the formula (  $\text{weight}/\text{height}^2$  ). To assess the wellness of the veteran sports person. Awareness of wellness questionnaire (Edlin and Golanty, 2004) was selected. Analysis of Results revealed that the veteran sports persons were not fully aware in term of wellness and BMI. and they were living not better healthy life style because of habitual of drugs and sleeping pills to remove emotional problems. Health of retired sports person was not effected by stress. They were not found satisfied with their body weight, different sport's job and goal setting. Participation in exercise program for fitness of body was uncertain of them. They did not have any worry about their diet status, medical check-up and stabilization of mind ,

**Keywords:** Obesity, wellness, health, Retired sports persons, Awareness, BMI

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## 1. INTRODUCTION:

Health is man's greatest wealth; he who has health must cherish it with care. Healthy people constitute a healthy nation. The meaning of health is, "freedom from disease, sound body and mind etc; Health is basic to learning, to happiness, to success, to effective citizenship, and to worthwhile living. In Ayurved 'Swastihya' (health) has been defined as a well balanced metabolism, a happy state of being, the senses and the mind. Swami Vivekananda has said, "a weak person who has weak body or weak mind can never be master of a strong soul". Aristotle has also stated that a sound mind lives in a sound body. According to World Health Organisation (W.H.O) "Health is a state of complete physical, mental, social and spiritual well being and not merely an absence of diseases or infirmity."

There are several benefits of a healthy life. Our body becomes free from various forms of disorders and thus, we get a longer life. We can live a life without suffering from any aches, pain, or discomfort. In every sphere of our life, we will be able to perform to the best of our ability. Doing excellent work helps you to be a valuable member of a healthy society. Besides, when we are physically fit, it gets reflected on your face. So, our look attractive and start feeling good about our self! If we have a fit body, then we can lead a physically active life even after growing old. This is because, the body can heal the regular wear and tear associated with aging faster. In short, health and wellness brings about a drastic improvement in the overall quality of us (Buzzle <http://www.buzzle.com>, 2012 ).

In the BPFT (Brockport Physical Fitness Test) health-related fitness refers to those components of fitness affected by habitual physical activity and related to health status. It is defined as a state characterized by (a) an ability to perform and sustain daily activities and (b) demonstration of traits or capacities associated with a low risk of premature development of diseases and conditions related to movement. Health-related components of fitness adopted for this test include aerobic functioning, body composition, and musculoskeletal functioning. In the BPFT, test items are selected to measure these components of fitness and standards related to health are developed for each of the tests items to evaluate fitness. The premise in regard to assessment is that if children and youth reach the standards associated with the test items representing these components of physical fitness, they will have attained levels of physical fitness that are appropriate for health and which will enable them to enter adulthood with the protection that physical fitness affords as a buffer to the natural degeneration that comes with middle age and beyond (<http://www.ncpad.org>, 1989)

BMI' provides a simple numeric measure of a person's thickness or thinness, allowing health professionals to discuss overweight and underweight problems more objectively with their patients. However, BMI has become controversial because many people, including physicians, have come to rely on its apparent numerical authority for medical diagnosis, but that was never the BMI's purpose; it is meant to be used as a simple means of classifying sedentary (physically inactive) individuals, or rather, populations, with an average body composition . For these individuals, the current value settings are as follows: a BMI of 18.5 to 25 may indicate optimal weight, a BMI lower than 18.5 suggest the person is underweight, a number above 25 may indicate the person is overweight, a number above 30 suggests the person is obese (Cardiovascular disease Wikipedia, 2013).

The terms Wellness involves various variety of activities which help human being to recognize components of life style that are detrimental to health and then participate in different programmes and follow guidelines so as to improve quality of life and achieve total wellbeing. The concept of wellness goes beyond absence of mere disease and optimal physical fitness. Physical fitness is one of the components of wellness.

Components of Wellness are Physical Fitness, Cardio-vascular risk factors, Health Education, Alcohol & Drugs, Smoking, Tension & Stress, Proper Nutrition, Spiritual wellbeing and safety (UPPAL,2004). "Wellness is a multidimensional state of being describing the existence of positive health in an individual as exemplified by quality of life and a sense of well-being" (Zimmer, 2010).

The purpose of the study will be find out the actual BMI and wellness of veteran people, who is above 60 year age. They may be male and female in Medinipur city area. Now a day after retired many people suffer their various type of disease. So we have must need check- up their health status for their good life.

## **2.METHODOLOGY**

### **2.1 Sample**

There were approximately 2 sports association of veteran person area in Medinipur City. Total number of registered veteran sports person is 200 in Medinipur city. The subject age was ranged from above 50 yrs.

### **2.2 Sampling design**

A sample of 100 veteran sports person retired from their games was selected by the researcher in the Medinipur City. The sample was consisted of both sexes for completion of the sample. The selection of sample was purely based on Stratified random sampling method and proper care was taken that the sample must be true representative of population.

### **2.3 Research design**

This study goes through a method of survey research under the descriptive research. Survey is method of research that involves compilation, explanation. The research made survey of body mass index and wellness among sports person in Medinipur City. In this study the researcher selected the subject 100 sports person who is veteran in Medinipur City and took the permission for the data collection from veteran sports club. The researcher was taken test of height and weight for BMI and then he was distributed questionnaire to sports person. The subject was given their test and fills up the questionnaire and returned to the researcher. Then the researcher has analyzed data interpreted there result in the thesis work.

### **2.4 Inclusion & Exclusion Criteria**

Subject from area of Medinipur City was included. Educated sports person was included only. Only veteran person was included for this study. Subject aged below 50 year was excluded. The retired sports person, who is suffering intensively from various disorders and as discarded by the physician, was excluded.

### **2.5 Variables**

Based on various reports and experts opinion, who dependent variables i.e., Body Mass Index (B.M.I) and Awareness of wellness were undertaken for this study from the veteran sports person of Medinipur City.

**2.6 Tools**

Research scholar selected appropriate tools to measure the selected variables. Measuring tape was used for body height and they were contributed to calculate one’s BMI. Similarly standard questionnaire was administered to assess the wellness of the veteran sports person. Here mentioned scoring key of the questionnaire. Edlin and Golanty (2004) questionnaire was selected from “ Handbook of Health and Wellness.

**2.7 Administration of Tools and Collection of Data**

The researcher was taken permission from the Secretary of each association of veteran sports person or retired sports person or old homes and will fix date, timing to meet the veteran sports person which is needed for the test administration. After receiving permission, the researchers has been meet veteran sports person and summarize the purpose of the study and how the data was collected. All the doubts was clarified. Prior to data collection the subject was explained about the process of the test, first researcher was demonstrate and explained each and everything related to that like body position, timing what they have to do.

The B.M.I was measured one by one and then standard questionnaire on Wellness was distributed to the retired sports person. The subjects were advised to take the time to fill up questionnaire through there was a time limit set to respond to the question. Doubt, if any, was clarified by the researcher at the time of collection of data. The data were systematically collected, recorded and preserved for analysis.

**2.8 Statistical Analysis**

The data was processed by using descriptive statistics for BMI & and percentage (%) analysis was done for wellness.

**3. RESULT**

The data collected on 100 veteran sports person in Medinipur City. BMI was calculated by the formula ( weight/height<sup>2</sup> ). For obtaining views regarding wellness of retired sports person questionnaire were used and responses were calculated with percentage as statistical tools.

**TABLE 1  
ANALYSIS OF BODY MASS INDEX (BMI) OF VATERAN SPORTS PERSON OF  
DIFFERENTSPTS AND GAMES**

S. No.	Descriptive Statistics	Score
1.	Mean	23.49
2.	Median	23.59
3.	Mode	24.59
4.	[MD] <sub>M</sub>	2.36
5.	S.D	2.90
6.	Range	17.61

Table 1 reveals that mean, median, mode, [MD]<sub>M</sub>, standard deviation and range in B.M.I of retired sports persons were 23.49, 23.59, 24.59, 2.36, 2.90 and 17.61 respectively.

64% persons have “Normal” because their BMI is good according their height, weight and age. 30% persons have “Overweight” because their height and weight is not good according their age. But only 4% person have suffer in “Underweight” actually their BMI was not in perfect level, weight was not appropriate according their age, but their weight was very poor. But only 2% retired sports person have suffer by “Obese” because their weight was excessive according to their age and height basis and BMI score is low

Graphs were also included in every categories on basis of collected response of veteran sports person in Medinipur City.

**TABLE 2**  
**PERCENTAGE INDICATION OF OVERALL WELLNESS STATUS OF VETERAN SPORTS PERSON**

SI No.	Six Categories	Need Improvement (%)	Good(%)	Excellent(%)
1.	<b>Emotional Health</b>	47	47	6
2.	<b>Fitness &amp; Body care</b>	40	46	14
3.	<b>Environmental Health</b>	33	58	9
4.	<b>Stress</b>	40	56	4
5.	<b>Nutrition</b>	31	49	20
6.	<b>Medical self responsibility</b>	49	40	11

Table 2 clearly reveals that the percentage indication for emotional health shows that 47% responded for Need improvement, 47% respondents were Good, only 6% respondents were Excellent among the Veteran sports person. The percentage indication for fitness and body care shows that 40% respondents "Need improvement", 46% respondents were "Good", only 14% respondents were "Excellent" among the Veteran sports person. The percentage indication for environmental health shows that 33% respondents "Need improvement", 58% respondents were "Good", only 9% respondents were "Excellent" among the Veteran sports person. The percentage indication for stress shows that 40% responded "Need improvement", 56% respondents were "Good", only 4% respondents were "Excellent" among the veteran sports person. The percentage for indication r nutrition shows that 31% responded "Need improvement", 49% respondents were "Good", only 20% respondents were "Excellent" among the veteran sports person. The percentage analysis for medical self-responsibility shows that 49% responded "Need improvement", 40% respondents were "Good", only 11% respondents were "Excellent" among the veteran sports person.

#### **4. DISCUSSION**

Retired sports persons were found overweight and obese. They should maintain their exercise, food list. They should avoid first food and fatty food also etc. But those veteran sports person have suffered underweight they should take protein, fat and exercise maintain.

Veteran sports person do not maintain their health, their health was minimum in good level, so some improvement needed. Therefore if we consider the maximum responses then we can say that the availability of the wellness in Emotional health was not "Excellent". For the improvement of emotional health of veteran sports person must should be maintain different specific exercises, sufficient sleeping, depression, anxiety, emotional problem without drugs and avoid sleeping pills for excellent result.

Veteran sports person do not maintain their health. Their health was minimum in good level, so some improvement needed. Therefore if we consider the maximum responses then we can say that the availability of the wellness in Fitness and body care was not "Excellent". For the improvement of Fitness and body care of veteran sports person

must should be maintain different specific exercise, dental floss, calorie's food and proper brush after meal.

58% people aware of wellness in environment, because they had maintain the various pollution in the area. But 33% people they were not conscious about the pollution, which occurred environment pollution and effect on people health. In which for the better improvement of environmental health veteran sports person must should be avoid the alcohol, smoke and control various pollution and they achieved excellent stage. Therefore, if we consider the maximum responses then we can say that availability of the wellness in Environmental health is "good".

The wellness in Stress was not "Excellent". 40% retired sports person were not good improvement, because they have not satisfied in their job, no goal setting, actually they not take relax at perfect time for quite mind. In which for better improvement of retired sports person they must should goal setting in proper time, needed of relax for quite mind and achieved for good and excellent.

The availability of the wellness in Nutrition is not "Excellent". It was found from above mention statement that retired sports person they do not maintain their balance diet that means vitamin, protein, fat, fresh vegetable food, so the response were negative side. As per the nutritional habits taking salt rarely are recommended in this age. For best improvement of veteran sports person it should be maintain that is low fat and low cholesterol food in their diet, proper salt intake, adequate daily supply vitamins from food, should avoid "junk" food which will be achieved at excellent level and life will be longer.

The availability of the wellness in medical self-responsibility is not "Excellent". It was found from above mention statement that veteran sports person they were not sincere for their health. Veteran sports person were not check up their physical problem in proper time, most people take medicine that's have side effect they do not know, so the report was negative side. For excellent result all these information should obey.

## 5. CONCLUSIONS

1. Veteran sports persons were not fully aware in term of wellness and BMI. and they were living not better healthy life style because of habitual of drugs and sleeping pills to remove emotional problems. Health of retired sports person was not effected by stress.
2. Retired sports person were not found satisfied with the weight. They want to gain or reduce their body weight. Fitness and body care was not in a proper way. Participation in exercise program was uncertain.
3. Veteran sports persons were not satisfied in their different sport's job and goal setting.
4. Veteran sports persons were often not maintain proper food constituents or diet status.
5. Retired sports persons were not conscious their medical check-up in proper time,
6. Veteran sports persons were could not stabilize their mind in proper manner.



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## INVESTIGATION OF LEADERSHIP BEHAVIOUR AS PREFERRED BY INDIAN FEMALE VOLLEYBALL PLAYERS

Harendra Singh<sup>1</sup>

<sup>1</sup> Sports Officer, Vijay Singh Pathrik Govt. PG College, Kairana, Shamli (U.P.)-Pin Code-247774 E-mail-harendersingh096@gmail.com

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### **ABSTRACT**

The purpose of the study was to assess and investigate the preferred leadership behaviour of Indian female volleyball players. For this purpose, Two hundred and thirty four (Females= 234)) National level Volleyball players representing their respective state teams in Senior National Volleyball Competition (W) and who volunteered to participate in this study, were selected to serve as subjects for this study Leadership Scale for Sports developed by P. Chelladurai (1994) was selected as a criterion tool to measure preferences on five dimensions of preferred leadership behaviour of national level male and female volleyball players. To assess the preferred leader behaviour of National level female Volleyball players, means, standard deviations and Analysis of variance (ANOVA) was computed were computed. Wherever, the F-ratio was found significant. The statistical analysis of collected data revealed that the national level female volleyball players exhibited different preferences on five dimensions of leader behaviour. National level female volleyball players preferred in greater amount of training and instruction followed by positive feedback, social support, democratic behaviour and autocratic behaviour from their coaches.

**Keywords:** Preferences, National level, Gymnasts, Leadership, Behaviour, Females

## INTRODUCTION

The Psychological preparation on the basis of psychological characteristics of the sport, the competition conditions and the personality structure (profile) of the sportsmen, are planned and carried out with the aim of enabling the sportsman to be in an optimum psychic state at the time of competition so that he can achieve the maximum possible performance.

The participation in sports contributes to building up self confidence, enhanced intellectual level, personality development and outgoing tendency or extraversion. As such the proficiency leads to enhanced success in sports activities and is highly valued in one's group (Simon, 1964).

Success in athletics seems to be dependent in part on psychological status and traits. The use of an athlete's personality profile, in concern with knowledge of his past experiences, coach's rating, anatomic and physiological characteristics and so, one can enhance the accuracy of prediction in a number of sports (Morgan, 1986).

In order to improve the athletic performance in the field of physical education, many research projects have been conducted in India and abroad. In the United States they are basically just beginning to aid the coach in making valid and reliable decisions concerning athletic performance, yet much of the researches may be labeled as theoretical or simply a study for its own sake, as compared to practical or applied research applicable for utilization by the coaches. Undoubtedly a number of individuals, including many coaches look them as the theoretical research which is practically useless and not directly applicable to their purposes (Vanek and Cratty, 1980).

Leadership is the behavioural process of influencing the activities of an organized group towards specific goals and the achievement of those goals. Leadership is more concerned with why people comply and how one person influences another (Williams, 1993).

The leader is required to behave in certain ways by the demand and constraints placed by the demand and member's preferences for specific leader behaviours are largely a function of the individual characteristics of the group member's personality variables, such as, need competence in the task influence competence, in the task influence a member's performances for coaching and guidance, social support and feedback. In addition the situation characteristics also affect member's preferences. For example, if there is an organizational expectation, which a leader will behave in a specific manner, this expectation is held jointly by both leaders and the members (Murphy and Tennat, 1993).

## 2. METHODOLOGY

### 2.1 Selection of Sample

A sample of Two hundred and thirty four (Females= 234) National level Volleyball players representing their respective state teams in Senior National Volleyball Competition (W) and who volunteered to participate in this study, were selected to serve as subjects for this study. The subjects were in age group of 21 to 27 years. The subjects were selected from amongst the Senior National Female Volleyball Competition held at Laxmibai National University of Physical Education, Gwalior (M.P.) in their respective Volleyball Courts.

## 2.2 Instrumentation

Leadership Scale for Sports developed by P. Chelladurai (1994) was selected as a criterion tool to measure preferences on five dimensions of preferred leadership behaviour of national level male and female volleyball players.

The Leadership Scale for Sports (L.S.S.) is a valid and reliable instrument. The scale consists of 40 items for athlete's perception of coach's behaviour and 40 items for preference version representing five dimensions of leadership behaviour i.e. training and instruction, democratic behaviour, autocratic behaviour, social supports and positive feedback (Rewarding behaviour).

The scale consisted of 40 items for five dimensions in which training and instruction (13 items), democratic behaviour (9 items), autocratic behaviour (5 items), social support (8 items), and positive feedback (Rewarding behaviour) had 5 items on which there were no negative responses. The scoring of the leadership items were as follows :- Always - 5; Often - 4; Occasionally - 3; Seldom - 2; Never - 1. Each question had five responses namely 1. Always, 2 Often, 3 Occasionally, 4 Seldom, 5 Never.

According to above stated responses, scoring was carried out for preferred leader behaviour of different games athletes.. The score tabulated for all the items under dimensions of leadership behaviour were averaged out to get score for each dimension. The average scores of preferred leadership of male and female inter-university athletes of different games on five dimensions of leader behaviour.

The scale had test-retest reliability 0.72 for training behaviour, 0.82 for democratic behaviour, 0.76 for autocratic behaviour, 0.71 for social supports, and 0.79 for positive feedback.

## 2.3 Administration of Questionnaire and Collection of Data

The necessary permission from the organizing secretary of Senior National Volley ball Competitions at Gwalior was obtained by the research scholar to conduct this study on National level female volleyball players. The coaches and subjects were contacted at the site championships personally and their sincere cooperation was solicited. Respondents were called to common place, when, they were not busy and had enough time to spare for testing. Necessary instructions were given to the subjects before the administration of test. Confidentiality of responses was guaranteed so that the subjects would not camouflage their real feelings. No time limit for filling the questionnaire was set but subjects were made to respond as quickly as possible. As soon as a group of players completed the questionnaires, they were collected from the players and verified that no questionnaire was left without being answered.

## 2.4 Statistical Analysis

To assess the preferred leader behaviour of National level female Volleyball players, means, standard deviations and Analysis of variance (ANOVA) was computed were computed. Wherever, the F-ratio was found significant, Scheffe's Test of post-hoc analysis was applied to find out significance of difference between ordered paired means.

### 3. RESULTS

To assess the preferences on five dimensions of leader behaviour, of senior national level female volleyball players, mean, standard deviation and Analysis of Variance (ANOVA) on five dimensions of leader behaviour as a set of dependent variables for all the subjects taken together for females were computed and data pertaining to this have been presented in table 1 to 3.

**TABLE 1**  
**DESCRIPTIVE STATISTICS OF PREFERENCES ON FIVE DIMENSIONS OF LEADER**  
**BRHAVIOUR OF NATIONAL LEVEL MALE AND FEMALE**  
**VOLLEYBALL PLAYERS**

S.NO.	Leader Behaviour	Female (N=234)	
		M	SD
1.	Training and instruction	4.323	0.439
2.	Democratic behaviour	3.744	0.613
3.	Autocratic behaviour	3.141	0.906
4.	Social Support	3.792	0.619
5.	Positive feedback	4.183	0.737

The mean scores of five dimensions of leader behaviour as preferred by female volleyball players at national level of their participation have been depicted in figure 1.

**TABLE 2**  
**ANALYSIS OF VARIANCE OF PREFERENCES OF NATIONAL LEVEL FEMALE**  
**VOLLEYBALL PLAYERS**

Source of Variance	df	Sum of Squares	Mean Square	F- Value
Between Groups	4	199.798	49.950	107.822*
Within Groups	1165	539.697	0.463	
<b>Total</b>	1169	739.495		

\*Significant at .05 level.,  $F_{.05}(4,1165) = 2.38$ .

From Table 4, It is evident that the statistically significant difference existed among national level female volleyball players on preferred leadership behaviour was very high, as the obtained F-value of 107.822 was much higher than the required  $F_{.05}(4, 1165) = 2.38$ .

As the F-ratio was found to be significant, Scheffe's Test of Post-hoc comparison was applied to study the significance of differences among national level female volleyball players on five dimensions of leader behaviour of preferred leadership and the data pertaining to this have been presented in Table 3.

**TABLE 3**  
**SIGNIFICANCE OF DIFFERENCES AMONG NATIONAL LEVEL FEMALE VOLLEYBALL PLAYERS BETWEEN ORDERED PAIRED MEANS ON FIVE DIMENSIONS OF PREFERRED LEADERSHIP**

Mean Scores						
TI	DB	AB	SS	PF	Paired mean difference	Confidence Interval (C. I.)
4.232	3.744	-	-	-	.488*	0.194
4.232	-	3.141	-	-	.991*	
4.232	-	-	3.792	-	.540*	
4.232	-	-	-	4.183	.049	
-	3.744	3.141	-	-	.603*	
-	3.744	-	3.792	-	.048	
-	3.744	-	-	4.183	.439*	
-	-	3.141	3.792	-	.651*	
-	-	3.141	-	4.183	1.042*	
-	-	-	3.792	4.183	.391*	

\*Significant at .05 level.

It is quite obvious from the table 5, that there were significant differences on preferred leadership among national level female volleyball players between training and instruction - democratic behaviour followed by autocratic behaviour and social support ; between democratic behaviour - autocratic behaviour followed by positive feedback; between autocratic behaviour- followed by followed by positive feed back and between social support- positive feedback, as the paired mean differences of .488, .991, .54, .603, .439, .651, 1.042 and .391 respectively were higher than the confidence interval (CI) of 0.194. But the mean differences between training and instruction - positive feedback (.049) and between democratic behaviour - social support (.048) respectively were not significant at 0.05 level, as the confidence interval of 0.194 was higher than the mean differences.

#### 4. DISCUSSION

Findings of descriptive data of national level female volleyball players on five dimensions of preferred leadership behaviour indicated that female volleyball players preferred more democratic behaviour, social support and positive feedback from their coaches in comparison of male volleyball players.

National level female volleyball players on five dimensions of preferred leadership behaviour, they expressed significant differences among female volleyball players in their preferences for preferred leadership. National level female volleyball players also preferred more training and instructions behaviour in comparison of other dimensions of preferred leadership. Which may be due to the dissimilarity in decision-making style, interpersonal

relationships and reinforcement with them by their coaches. But the significant differences exhibited by the national level female volleyball players in their preferences between training and instruction- positive feedback and between social supports - positive feedback were not found to be significant. Which may be due to similarity in coaching style, social welfare and motivational tendencies.

## 5. CONCLUSIONS

1. National level female volleyball players exhibited different preferences on five dimensions of leader behaviour.
2. National level female volleyball players preferred in greater amount of training and instruction followed by positive feedback, social support, democratic behaviour and autocratic behaviour from their coaches.

## 6. RECOMMENDATION

It is recommended that coaches of volleyball game may modify their coaching behaviour according to the preferences expressed by the national level female volleyball players on five dimensions of leader behaviour. It is also recommended that coaches of volleyball game may modify their training programme according to the leadership style exhibited by the national level female volleyball players on five dimensions of leader behaviour.

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## A STUDY OF LOCUS OF CONTROL AT DIFFERENT LEVEL OF CONFIDENCE OF UNIVERSITY LEVEL CRICKETERS

Dr. Ashish Kumar Nigam<sup>1</sup>

### Affiliations:

<sup>1</sup> Sports Officer, College of Agriculture, J.N. K. V. V. Tikamgarh (M.P.)

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### **ABSTRACT**

Research in self-confidence in sports psychology has been conducted with various theoretical framework and has largely focused on mediating effect of confidence on cognition affect and behaviour in sports. The purpose of the study was to assess and investigate the locus of control at different level of confidence of university level male cricketers. Three hundred and fifty inter-university level male cricket players were selected as the subject of the study. Sports Self-confidence Questionnaire (Trait sports-confidence inventory) prepared by Vealey (1986) consisted of 13 statements and Inventory of Factor influencing Sports Career prepared by Kamlesh and Sharma (1986) were employed to collect data from male cricket. To assess the status of inter-university level male cricket players. Descriptive statistics were computed. F-ratios was used to determining the significance of difference in locus of control locus of control based on level of self confidence. The results of the revealed that the inter-university level male cricket players with different levels of self-confidence differed significantly in their internal locus of control. The players higher in self-confidence gave more importance to task-orientation and were more internally controlled.

**Keywords:** Male, Cricketer, Self-confidence, locus of Control, Inter-university level

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## 1. INTRODUCTION

Sports participation and appreciation have become integral part of lives. Competitive sports make a tremendous demand on the physical conditioning, vitality, endurance and mental power of the participants. Only the finest can play to the best of their ability. Each sport has its own patterns, muscle load, tempo and duration. Today the people of every country are more concerned with physical fitness than ever before as it has become the vital part of winning sports competition (Maji, 1996).

A psychological construct that refers to whether individuals believe that their behaviour or, more correctly, the reinforcements from behaviour, is under their own control. Locus of control have two part one internal locus of control and two external locus of control. In internal locus of control people who are likely to see events in this lives as being dependent on their own behaviour. Internal locus of control believe that if they perform well or poorly, appropriate consequences will follow. They do not consider luck as having much effect on the outcome of their performance, and do not see their fate as being always in the hands of other people. Good athletes tend to be internal control because they have learned that their abilities and efforts bring them reward and success.

In external locus of control an individuals perception that external factor determine performance out comes. Individuals who tend to believe that events in their lives result from external factors beyond their control, such as luck and referees decision. Whether players are external control or internal control may influence their performance and the method most appropriate to motivate them. External control tend to fear failure and are chance- oriented( Kent, 1994).

it is defined as the degree to which individuals believe they have control over their own environment (Bois and Stanley, 1979) . Locus of control refers to a bias across a wide area of situations that influences the perception of control over the environment and the perceived causes of reward (Wainers et.al. 1977).

Self-confidence can be viewed as the most critical psychological characteristic influencing sports performance fascination with their construct is fueled by the dramatic influences that of self-confidence has on performance, as well as the often stable and unpredictable nature of self-confidence over a period of time( Bell, 1983).

Sports self-confidence is an accumulation of the athletes unique experience in achieving many different things, which results in the specific expectations he or she has about achieving success in a future activity (Martens, 1981). It can be defined as the belief or degree of certainty individuals possess about their ability to be successful.<sup>24</sup> In sports self- confidence has been referred as self- efficacy referring to the performer's belief that he or she can successfully execute a behaviour required to produce a certain outcomes. Assuming an individuals is capable of a response and three the actual performance will be predicted by the individuals belief in his or her competence (Kent, 1994).

Research in self-confidence in sports psychology has been conducted with various theoretical framework and has largely focused on mediating effect of confidence on cognition affect and behaviour in sports and motor performance contexts (Bandura, 1977).

Vealey' (1986) conceptualization of sports confidence or degree of certainty individuals possess about their ability to be successful in sports.

The purpose of the study was to assess and investigate the locus of control at different level of confidence of university level cricketers It was also hypothesized that the Inter-university level male cricket players will not differ in their locus of control based upon their level of self- confidence.

## 2. METHODOLOGY

### 2.1 Selection of Subjects:

A purposive sample of three hundred and fifty inter-university level male cricket players were selected as the subject of the study. The age of the subject ranged between 17 to 25 years.

### 2.2 Selection of Variables

The Trait sports self-confidence and Locus of control variables were selected for the present investigation.

### 2.3 Instrument Used

Sports Self-confidence Questionnaire (Trait sports-confidence inventory) prepared by Vealey (1986) was employed to collect data on sports-confidence level among the players. The trait sports self-confidence inventory consisted of 13 statements.

Inventory of Factor influencing Sports Career prepared by Kamlesh and Sharma (1986) published by National Psychological Corporation, Agra was used to evaluate the influence of different factor on sports career. The inventory consists of twenty questions varying around internal and external factors.

### 2.4 Statistical Analysis

To assess the status of inter-university level male cricket players. Descriptive statistics were computed. F-ratios was used to determining the significance of difference in locus of control locus of control based on level of self confidence

## 3. RESULTS AND DISCUSSION

To determine the significance of difference among the scores on locus of control of cricket players at different levels of self- confidence, analysis of variance was computed. In case of significance ANOVA, Scheffe's Test of Post-hoc Comparisons was applied to assess the significance of difference between ordered pair means and data pertaining to this , has been presented in Table 1 and 2

**TABLE 1**  
**ANALYSIS OF LOCUS OF INTERNAL AND EXTERNAL CONTROL OF CONTROL AT DIFFERENT LEVEL OF SELF-CONFIDENCE**

Locus of Control	Source of Variance	Sum of Squares	df	Mean Square	F-Value
Internal	Between Groups	710.03	2	355.02	19.46*
	Within Groups	6331.81	347	18.25	
External	Between Groups	169.55	2	84.78	2.55
	Within Groups	11560.41	347	33.32	

\*Significant at .05 Level,  $F_{05}(2, 347)=3.02$

It is quite obvious from table 1 that mean difference in internal locus of control among inter-university level male cricket players with different level of self-confidence was significant, as the obtained F-value of 19.46 was greater than the  $F_{05}(2, 347)=3.02$ . Whereas the mean difference in external locus of control among inter-university level male cricket players with different level of self-confidence was not significant, as the obtained F-value of 2.55 was less than the  $F_{05}(2, 347)=3.02$ .

As ANOVA resulted in significant F-ratio for internal locus of control was found to be significant. The Scheffe's Test of Post-hoc Comparisons was applied to find out the significance of difference between ordered paired means of internal locus of control at different level of self-confidence and the data have been presented in table 2.

**TABLE 2**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS OF**  
**INTERNAL LOCUS OF CONTROL AT DIFFERENT**  
**LEVEL OF SELF-CONFIDENCE**

Mean Scores				
High Self-confidence	Moderate Self-confidence	Low Self-confidence	Mean Difference	Confidence Interval (C.I.)
31.77	31.54	-	0.23	0.814
31.77	-	28.41	3.36*	
-	31.54	28.41	3.13*	

\*Significant at .05 level

Table 2, clearly indicated that there were significant differences at .05 level on internal locus of control between high self-confidence and low self-confidence groups, between moderate self-confidence and low self-confidence groups, as the obtained mean differences of 3.36 and 3.13 respectively were higher than the CI of 0.814. There was no significant difference between high self-confidence and moderate self-confidence groups. as the mean difference of 0.23 was less than the CI of 0.814 It indicates that cricket players with high self-confidence were more internally controlled followed by those with moderate and low self-confidence.

#### 4. DISCUSSION

Locus of control is personality variable that manifest itself through an individual's perception of reinforcement he receives. It describes the degree to which an individual believes that reinforcement are contingent upon his own behaviour. Thus depending on his past of reinforcement experiences, a person who has developed a consistent attitude tending towards either internal or external locus of control as the source of reinforcement. Thus the hypothesis that inter-university level male cricket players will be internally controlled has been accepted and is supported and desire for personal mastery among the purposes of participation in cricket should serve.

#### 5. CONCLUSION

The inter-university level male cricket players with different levels of self-confidence differed significantly in their internal locus of control. The players higher in self-confidence gave more importance to task-orientation and were more internally controlled.

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## COMPARISON OF PERSONALITY CHARACTERISTICS OF MALE AND FEMALE GYMNASTS OF CHHATTISGARH

Ratin Jogi<sup>1</sup>

### Affiliations:

- 1 Sports Officer (I.T.), Guru Ghasidas Central University, Koni Bilaspur (Chhattisgarh)

### ABSTRACT

The purpose of the study was to study and investigate the personality characteristics of state level gymnasts of Chhattisgarh. One hundred (Sixty males and Forty females) gymnasts were randomly selected out of total participated gymnasts in the state school gymnastic competition to serve as the subjects for this study. Eysenck's Personality Questionnaire-R (E.P.Q.-R) prepared by Eysenck and Eysenck (1975) was selected to measure the four dimensions of personality of state level Gymnasts of Chhattisgarh. To assess the personality characteristics of male and female Gymnasts of State, level, Means and Standard Deviations were computed. In order to find out the significant difference between male and female gymnasts of state level on personality factors, t-ratio was computed. To check t-Ratio, level of significant was set at .05 level. The results of the study revealed that that Female gymnasts of chhattisgarh state were found less psychotic in nature, more extroverted, less neurotic in nature and social desirability than their counter parts.

**Keywords:** State level, Gymnasts, Extraversion, Neuroticism, Psychoticism, Males, Females

## 1. INTRODUCTION

In the modern sports world the psychological, makeup of a sport person is as much important as physiological variables, teaching and tactics. Psychology has become the backbone of high performances especially in achieving peak performances, both training and competition. Sports Psychology through still in infancy in the developing countries, has made a definite impact on sports performance, during training and competition (Seaton, 1956).

Competitive styles are characterized by certain personality traits such as individualism, egocentricity and tight, rigid, restrictive defenses. In common usage the term "Personality refers to vaguely conceived human quality which every one recognizes as a special importance in inter-personal relations (Suinn, 1974).

The personality was generally been acknowledged 'as an important part of physical activity. Some investigators are of the opinion that there are some personality traits which are directly responsible for success and failure of a sport person. Kroll and Carlson stated that there was direct relation between personality traits and level of performance.

Personality is expressed through the complex and interdependent relationship formed between an individual and environment (Dureha, 1987)

The participation in Sports contributes to building up self confidence, enhance intellectual level, personality development and outgoing tendency or extraversion as such proficiency leads to enhanced success in sports activities which is highly valued in one's group. Human life is a complex of physical, intellectual, emotional and social development patterns sports and physical activities are integral parts of these patterns. People compete in sports because of the opportunity provided to evaluate their competence in interacting with one's environment. Competition provides people of all levels of ability with the opportunity to seek out their enforcements attractive to them and gain certain measures of self-evaluation (Sinha, 1986).

The purpose of the study was to study and investigate the personality characteristics of state level gymnasts of Chhattisgarh.

## 2 METHODOLOGY

### 2.1 Selection of Subjects

One hundred (Sixty males and Forty females) gymnasts were randomly selected out of total participated gymnasts in the state school gymnastic competition to serve as the subjects for this study. The mean age and SD of male and female gymnasts of state level were  $19.90 \pm 1.53$  respectively. The subjects were selected from amongst the male and female Indian gymnasts taking part in State Gymnastics Championships.

### 2.2 Selection of Variables

Keeping in view, the importance of the selected psychological variable for Gymnasts, feasibility of collection of data legitimate time and cost involved in this study, the four Personality characteristics as dependent psychological variables were selected.

### 2.3 Instrument:

Eysenck's Personality Questionnaire-R (E.P.Q.-R) prepared by Eysenck and Eysenck (1975) was selected to measure the four dimensions of personality of state level Gymnasts of Chhattisgarh.

The Questionnaire consisted of 90 items for four dimensions in which Psychoticism (25), Extraversion (21), Neuroticism (23), and Social Desirability (21) had two items on

which there was no right or wrong answer in the responses. The responses are given in the form of Yes/ No The specimen copy of this Questionnaire is given in the appendix. The scoring of the completed questionnaire was done according to the method mentioned in the Manual of E.P. Q-R ( Personality Questionnaire with the help of scoring

**2.4 Statistical Analysis of Data**

To assess the personality characteristics of male and female Gymnasts of State level, Means and Standard Deviations were computed. In order to find out the significant difference between male and female gymnasts of state level on personality factors, t-ratio was computed. To check t- Ratio , level of significant was set at .05 level.

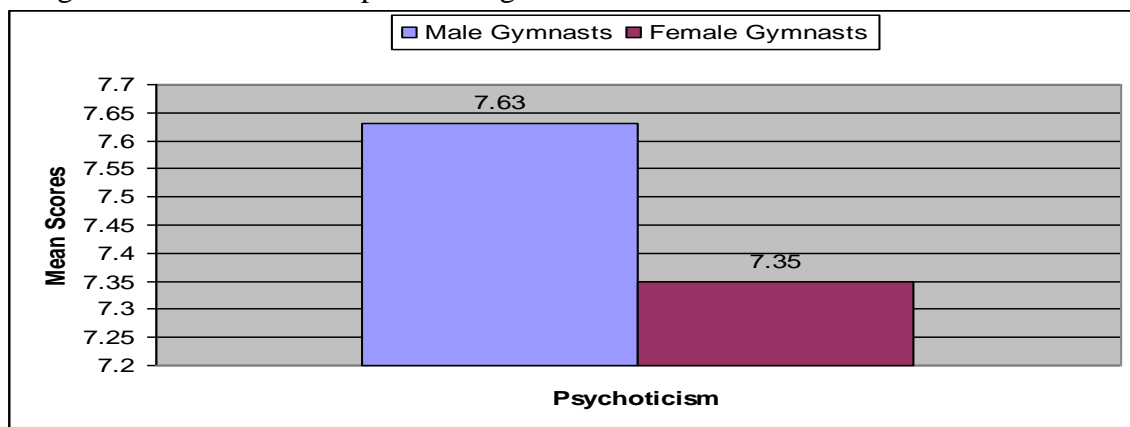
**3. RESULTS**

To assess the four personality characteristics of state level male and female gymnasts, means and standard deviations and t-ratio were computed and data pertaining to this have been presented in table 1 to 2.

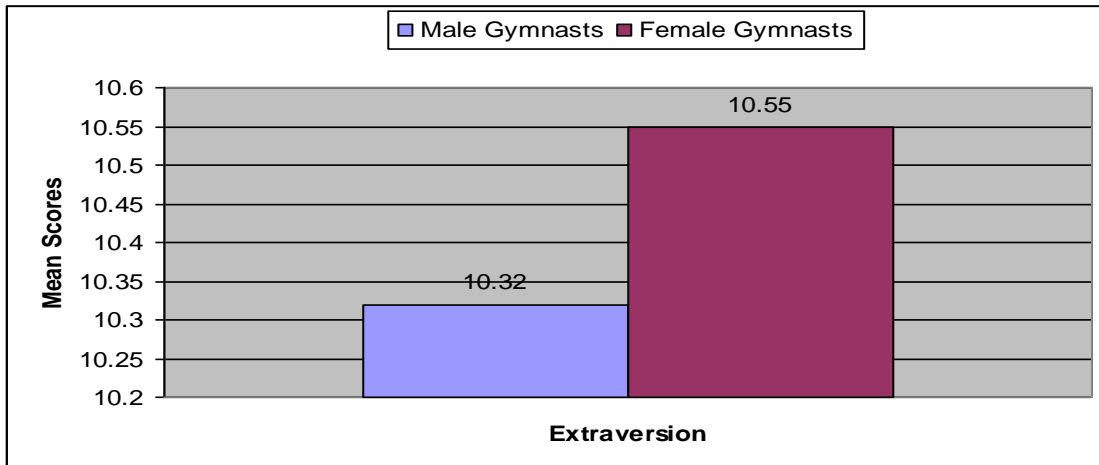
**TABLE 1  
DESCRIPTIVE STATISTICS ON FOUR PERSONALITY FACTORS OF MALE AND FEMALE GYMNASTS OF CHHATTIGARH STATE**

S. No.	Personality Dimension	Sex	N	M	SD
1	Psychoticism	Male	60	7.63	3.07
		Female	40	7.35	2.12
2	Extraversion	Male	60	10.32	3.57
		Female	40	10.55	3.77
3	Neuroticism	Male	60	10.50	3.03
		Female	40	8.78	3.35
4	Social Desirability	Male	60	7.80	2.52
		Female	40	6.95	2.59

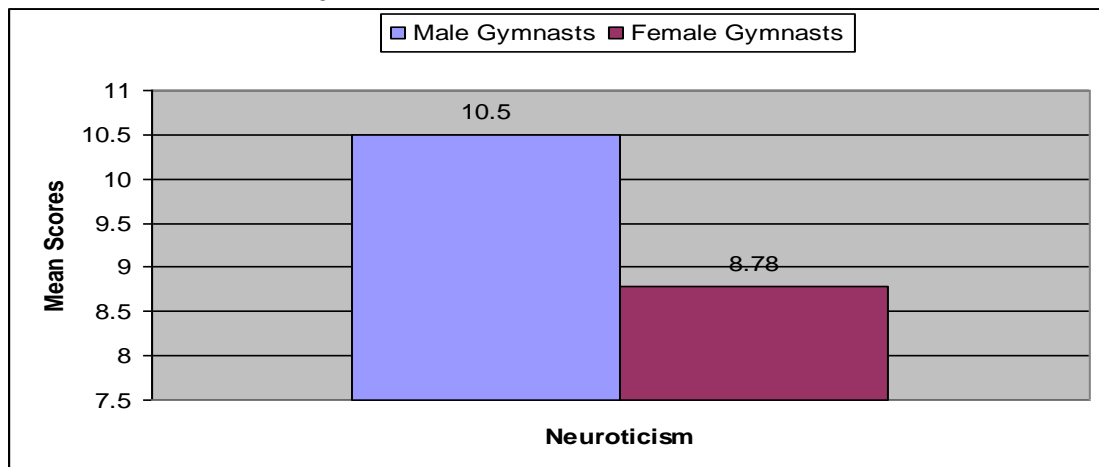
The mean scores on four personality factors of male and female gymnasts of Chhattisgarh State have been depicted in figure 1 to 4.



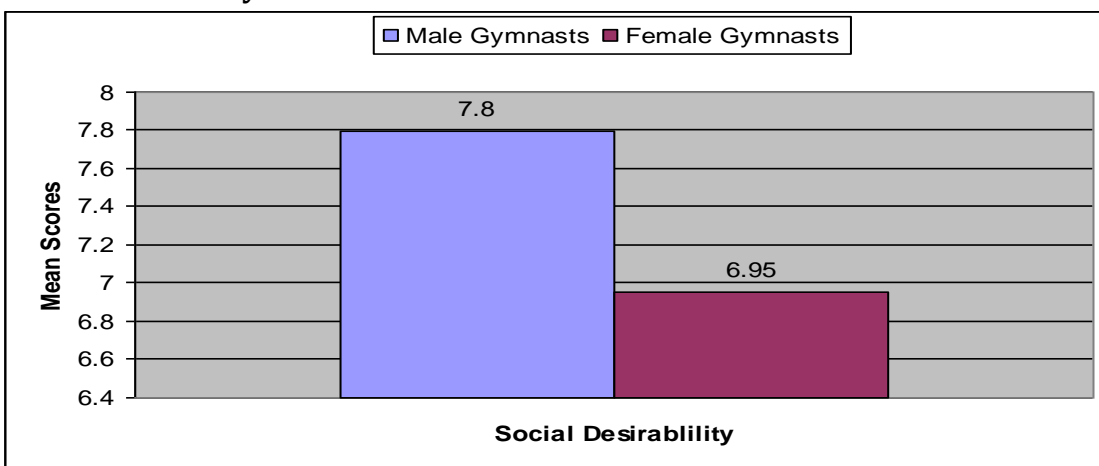
**Fig. 1. Mean Scores of Psychoticism Personality Factor for State level Male and Female Gymnasts.**



**Fig. 2. Mean Scores of Extraversion Personality Factor for State level Male and Female Gymnasts.**



**Fig. 3. Mean Scores of Neuroticism Personality Factor for State level Male and Female Gymnasts.**



**Fig. 4. Mean Scores of Social Desirability Personality Factor for State level Male and Female Gymnasts.**



**TABLE 2**  
**SIGNIFICANCE OF DIFFERENCES BETWEEN MEAN SCORES OF STATE LEVEL MALE AND FEMALE GYMNASTS ON FOUR PERSONALITY FACTORS**

S. No.	Variables	Sex	Mean	MD	$\sigma$ DM	t-ratio
1	Psychoticism	Male	7.63	0.28	0.56	0.50
		Female	7.35			
2	Extraversion	Male	10.32	0.23	0.75	0.31
		Female	10.55			
3	Neuroticism	Male	10.50	1.72	0.64	2.69*
		Female	8.78			
4	Social Desirability	Male	7.80	0.85	0.52	1.63
		Female	6.95			

\*Significant at .05 level  $t_{.05} (98) = 1.98$

From table 2, It is clear that the significant difference was found between State level male and female gymnasts on neuroticism personality factor only, as the obtained t-value of 2.69 was higher than the required  $t_{.05} (98)=1.98$ . But they did not differ in their three personality factors i. e. psychoticism, extraversion and social desirability, as the obtained t-values of , 0.50, 0.31 and 1.63 respectively were less than the required  $t_{.05} (98)=1.98$ .

#### 4. DISCUSSION

When the state levels male and female gymnasts compared on four personality dimensions produced significant difference on neuroticism dimension of personality. But the insignificant differences were observed in psychoticism, extraversion and social desirability factors of personality. This similarity of same level of competition may be attributed to the possible similarity of acquired knowledge, mental adaptability, adaptations of power of criticism and cognitive aspect of one' behaviour of male and female gymnasts at state level. It was also found that the female gymnasts of state level were found less psychotic in nature, more extroverted, less neurotic in nature and social desirability than their counter parts.

The state level male and female gymnasts also statistically insignificant differences were obtained on all personality factors except neuroticism dimension of personality. The state level male and female gymnasts differed significantly only on Neuroticism (2.48) dimension of personality with male gymnasts having more neurotic tendency than female gymnasts. They did not differ significantly on Psychoticism (0.79), Extraversion (0.32), and Social Desirability (0.65) dimensions of personality.

#### 5. CONCLUSION

Researcher finally concluded that Female gymnasts of chhattisgarh state were found less psychotic in nature, more extroverted, less neurotic in nature and social desirability than their counter parts.

#### 6. RECOMMENDATION

It is recommended that the study may be conducted to find out the differences in personality factors of male and female Indian gymnasts in relation to their age, and

year of participation. A similar study may be replicated on different individual and team game players of different levels with their competitive performance relationship.

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**EFFECT OF YOGA TRAINING ON STRESS AND ANXIETY OF UNIVERSITY  
LEVEL MALE PLAYERS**

**Kirti Kiran Ekka<sup>1</sup>**

**Affiliations:**

1. Assistant Director, Physical Education, Government S. V. Polytechnic College, Bhopal (M.P.) E-mail- kritikiranekka@yahoo.com

**ABSTRACT**

Sports is a Psycho-physical activity full of tensions, anxiety, conflict, strain, and stress .In this modern era of competitive sports, teams and individual athletes play to win. And this spirit of winning the matches and individual events causes many psychological stress teams my win or lose under psychological stress. The purpose of this study was to investigate effect of yoga training on stress and of university level male players. Twenty university level male players were randomly selected from the from the different games and sports in the Bilaspur district as the subjects for this study. To assess the effects of yoga practice on the selected psychological variables i. e. stress and anxiety, the questionnaire for stress from Ministry of Social Security, National Solidarity & Reform Institutions measures the general stress level and the questionnaire on anxiety from Zung Self-Rating Anxiety Scale (SAS) from William W.K. Zung. A rating instrument for anxiety disorders. To find out the effect of yoga training on stress and anxiety of university level male players, mean, SD and t-ratio were computed. The significance level was set at .05 level of confidence. The results of the study revealed that Yoga training was found effective to reduce the stress and anxiety of university players belong to different games and sports

**Keywords:** Yoga, Stress, Anxiety, University level players

## 1. INTRODUCTION

Yoga is an ancient philosophical and religious tradition which is thought to have originated in India in at least 1000 B.C. It refers to a large body of values, attitudes and techniques. Over the centuries, the techniques of yoga evolved into a number of different paths, any of which are said to lead a person to self-realization. Four of the major paths are: Karma Yoga, which is the pathway of selfless service through charity work

Asana have good effect on various systems in human body, such Matsyendrasana (spinal twist pose) has good effect on digestive system and good effect on pancreas for improving the insulin production, sarvangasana (shoulder stand pose) has good effects on endocrine gland system particularly thyroid glands. So the asanas which have complementary effect on various organs can be classified in this category. Relaxing asanas - Shavasana (corpse pose) and Makarasana (crocodile pose) are relaxing asanas, which give complete rest to body and mind (<http://www.yogapoint.com/>).

Sports is a Psycho-physical activity full of tensions, anxiety, conflict, strain, and stress .In this modern era of competitive sports, teams and individual athletes play to win. And this spirit of winning the matches and individual events causes many psychological stress teams my win or lose under psychological stress so one has to prepare to train such a way that the members of the team or athletes are to bear all types of stress and strains effectively which may deteriorate the sports performance (Singh, 1982 ).

The Concept of Stress has physiological, psychological and social aspects. The term stress was first used and popularized by Endocrinologist Dr. Hans Selye to describe the results of same kind of traumatic impingement on the organism. In fact he used the term to designate the event or trauma affecting the organism or individual later on, the term began to replace such words like anxiety, emotional distress conflict ego-thread, frustration, tension, lack of security and arousal etc. Which denotes some psychological and physiological conditions. But the word Stress remained popular because it tended to unify mind body relationship ( Cratty, 1981).

Anxiety, tension, stress, and other emotional disturbances are the symptoms of psychological stress, which are caused by frustration. The term frustration refers to the circumstances that result in the failure of a need to motivate to be satisfied when the satisfaction of the motive is thwarted, because we do not always reach the goal to which we aspire the thwarting or interference with goal directed behavior is often known as frustration. Whittaker (1970) says, interference with the satisfaction of motivates is in the conflict of motives. If the individual wants two goals at the same time, he is likely to experiences a great deal of discomfort and stress before making a choice.

Stress in sport is both physical and psychological . It is easier, However, to Chart the physical injuries that cause young athletes to leave the arena than it is to chart psychological injuries which may also be disabling .Psychological stress often accompanies physical injury or precedes it. One example is provided in the lawsuit (New York Times December 6, 1981) of vorhies versus the Virginia polytechnic Institute over the death of Bob Vorhies after he had completed punishment drills following a football practice ( Susan Butt, 1987) .

Psychological stress also occurs in sport when the athlete must struggle to maintain a competitive position .This occurs at all levels of Sport .On the elite level one finds a Borg retiring from active tennis placed upon him and his life style( Cratty, 1981).

The purpose of this study was to investigate effect of yoga training on stress and of university level male players.

**2. METHODOLOGY**

**Selection of Subjects:**

Twenty university level male players were randomly selected from the from the different games and sports in the Bilaspur district as the subjects for this study. Age ranged of the subjects was between 18 years to 20 years.

**Instrumentation:**

To assess the effects of yoga practice on the selected psychological variables stress and anxiety. The questionnaire for stress from Ministry of Social Security, National Solidarity & Reform Institutions measures the general stress level and the questionnaire on anxiety from Zung Self-Rating Anxiety Scale (SAS) from William W.K. Zung. A rating instrument for anxiety disorders.

**Collection of Data**

Data collection from stress questionnaire developed by “Ministry of Social Security, National Solidarity & Reform Institutions” anxiety questionnaire developed by “William W.K. Zung. A rating instrument for anxiety disorders. Psychosomatics 1971 Zung Self-Rating Anxiety Scale (SAS)”

**Statistical Analysis:**

To find out the effect of yoga training on stress and anxiety of university level male players, mean, SD and t-ratio were computed. The significance level was set at .05 level of confidence

**3. RESULTS**

**TABLE 1**

**DESCRIPTIVE STATISTICS OF STRESS AND ANXIETY OF UNIVERSITY LEVEL PLAYERS**

TEST	N	STRESS		ANXIETY	
		M	SD	M	SD
Pre-test	20	57.00	10.04	63.70	7.57
Post-test	20	24.75	6.66	24.05	4.94

The mean score of pre-test and post-test for stress and anxiety among university level male players have been depicted in figure 1 and 2.

**TABLE 2**

**SIGNIFICANCE OF DIFFERENCES BETWEEN PRE-TEST AND POST-TEST MEAN SCORES ON STRESS AMONG UNIVERSITY LEVEL MALE PLAYERS**

Psychological variable	Test	Mean	MD	$\sigma_{DM}$	t-ratio
Stress	Pretest	57.00	32.25	2.69	11.97*
	Post-test	24.75			

Significant at .05 level(38).=2.02

It is evident from Table 2, that statistically significant difference was found between the pre-test and post-test mean scores of university level male players on

stress, as the obtained t-value of 11.92 was higher than the required t-value of  $t_{.05(38)} = 2.02$ .

**TABLE 3**  
**SIGNIFICANCE OF DIFFERENCES BETWEEN PRE-TEST AND POST-TEST MEAN SCORES ON ANXIETY AMONG UNIVERSITY LEVEL MALE PLAYERS**

Psychological variable	Test	Mean	MD	$\sigma_{DM}$	t-ratio
Stress	Pretest	63.70	39.65	2.02	19.63*
	Post-test	24.05			

Significant at .05 level( $t_{(38)}=2.02$ )

It is evident from Table 3, that statistically significant difference was found between the pre-test and post-test mean scores of university level male players on anxiety, as the obtained t-value of 19.63 was higher than the required t-value of  $t_{.05(38)} = 2.02$ .

#### 4. DISCUSSION

When the male university players were compared together on pre-test and post test mean scores, the significant difference was observed between the pre-test and post-test mean scores of university level male players on stress and anxiety, It was also clear from this evidences that yoga training reduces the stress and anxiety among university players. Significant difference may be exist among them due the type of sports and games.

#### 5. CONCLUSIONS

- 1 Statistically significant difference was found between the pre-test and post-test mean scores of university level male players on stress,
- 2 Statistically significant difference was also found between the pre-test and post-test mean scores of university level male players on anxiety.
- 3 Yoga training was found effective to reduce the stress and anxiety of university players belong to different games and sports

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