

**ACADEMIC STRESS OF ACTIVE AND INACTIVE ADOLESCENTS IN
INTERSCHOLASTIC SPORTS**

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ABSTRACT

Adolescence could be a transitional period, starting with the onset of time of life and concludes with the acceptance of adult roles and responsibilities. Although exposure to some stressful negative events is considered a normal part of maturity, stressors remain vital as a potential risk to the well-being and healthy development of children and adolescents. Educational learning is among the foremost necessary sources of stress which is faced by adolescents worldwide. Academic learning is the very important sources of stress among adolescence students in Asia. Academic stress is a most important helper to a variety of mental and behavioral disorders, such as depression, anxiety, and suicidal behavior. Main aim of the investigation was to compare the academic stress levels in school attending male and female adolescents who have participated at interscholastic sports with that of students who have never participated. To achieve the purpose of the study necessary data was collected from 514 subjects of which 328 were boys and 186 were girls. The subjects selected were studying in 8th and 9th standard during 2015-16 and their age ranged between 14 to 16 years. The academic stress of adolescents was assessed through Educational Stress Scale for Adolescent (ESSA) developed by Sun, Dunne, Hou and Xu (2010) comprising 16 questions. Apart from descriptive statistics, 't' test was employed to compare means scores on academic stress between sportspersons and non sportsperson in boys and girls section. The study findings revealed that the academic stress in boys section between sportspersons and non sportspersons did not differ significantly. At the same time, the academic stress in girls section between sportspersons and non sportspersons differed significantly.

Key words: Male and female Adolescence, Academic Stress, High School.

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INTRODUCTION

Adolescence may be a shift amount, starting with the onset of time of life and concludes with the acceptance of adult roles and responsibilities of all life-stages. Except childhood, adolescence is that the one most marked by fast and probably disorderly transition (Williams, Holmbeck, & Greenly, 2002). This can be seen within the domain of biological development wherever the changes are physically outwardly manifest further as within the progression of each psychological feature and psychosocial maturity from that of childhood to that of the totally functioning adult (Byrne, Davenport, & Mazanov, 2007). whereas the transition through adolescence is inevitable the speed and magnitude of those changes tax the capability of the many youth to cope and therefore the ensuing development of adolescent stress is currently well recognized (Byrne, et al., 2007).

Stress has historically been conceptualized in 3 ways; as a stimulant (an event or accumulation of events); as a response (a psychophysiological reaction); or as a transactional method, within which an individual and also the setting act to supply associate degree appraisal of threat or loss (Caltabiano, Sarafino, & Byrne, 2008). a typical characteristic of all definitions of stress are that they specialise in environmental circumstances or conditions that threaten, challenge, exceed, or damage the psychological or biological capacities of the individual (Grant et al., 2004).

Mostly exposure to some stressful negative events is considered a normal part of maturity, stressors remain vital as a potential risk to the well-being and healthy development of children and adolescents (Grant et al., 2003). Exposure to stressful events

(stressors) symbolizes significant sources of risk to the healthy development of adolescents, and stressors are experienced in different intensities and durations of arousal in adolescence (Compas & Reeslund, 2009). However, when faced with the same stressor(s), the stress process and the impact from stress vary individually and lead to different health outcomes; this depends on individual and environmental vulnerabilities and resources, as well as the ability to cope effectively with the stressors (Compas & Reeslund, 2009).

Academic learning is among the foremost vital sources of stress faced by adolescents worldwide. Educational stress is mental distress with relevance some anticipated frustration related to educational failure or maybe unconsciousness to the likelihood of such failure. Students need to face several educational demands, as an example, college examination, respondent queries within the category, showing progress in class subjects. Understanding what the teacher is teaching, competency with different class mates, fulfilling lecturers and parents educational expectations. These demands could tax or exceed on the market resources of the scholars. As a consequence, they will be beneath stress, since the demand is said to action of an educational goal (Lal, 2014). to boot, students report stress over troubled to satisfy educational standards, time management worries, and considerations over grades (Olpin, 1997).

Academic learning is that the most significant reason behind stress among adolescents in Asian countries. Asian students particularly typically have high educational burden, low satisfaction relating to their educational performance and robust external pressure to review, and should suffer a

lot of educational stress than their counterparts in English speaking countries (Dunne, et. al., 2010). educational stress may be a vital contributor to a range of mental and activity disorders, like depression, anxiety, and unsafe behavior (Ang & Huan, 2006).

Throughout Asia, there's growing recognition of educational burden and also the impact on health and well-being of scholars. Generally the problem becomes extremely outstanding within the media in response to tragic events like adolescent suicide around test times. there's additionally attention being paid at the national and regional government levels that cause a large-scale analysis of those issues (Dunne, et. al., 2010).

The purpose of the present investigation was to compare the academic stress levels in school attending male and female adolescents who have participated at interscholastic sports with that of students who have never participated.

METHODOLOGY

Selection of Subject:

To achieve the purpose of the study necessary data was collected from 514 subjects of which 328 were boys and 186 were girls. In boys section, subjects participated at interscholastic sports were 164 and those not participating any interscholastic sports were 164. In girls

section, subjects participated at interscholastic sports were 93 and those not participating any interscholastic sports were 93. The subjects selected were studying in 8th and 9th standard during 2015-16. Their age ranged between 14 to 16 years.

Instrumentation:

In order to assess the academic stress of adolescents, Educational Stress Scale for Adolescent prepared and developed by Sun, Dunne, Hou and Xu (2010) is comprised of 16 questions using 5-point scale. 1 for strongly disagree to 5 for strongly agree. Higher score indicates the greater stress. The investigator himself distributed the questionnaire to subjects during their leisure time without disturbing the daily classes at schools.

Statistical Technique:

Apart from descriptive statistics, 't' test was employed to compare means scores on academic stress between sportspersons and non sportsperson in boys and girls section.

RESULTS AND DISCUSSION

To find out the significant difference between active and inactive male and female adolescents in interscholastic sports on academic stress, mean, SD and t-ratio were computed and data pertaining to this has been presented in Table 1 to 3 and depicted in figure 1 and 2.

TABLE 1
DESCRIPTIVE STATISTICS ON ACADEMIC STRESS OF ACTIVE AND INACTIVE MALE AND FEMALE SDOLSCENTS IN INTERSCHOLASTIC SPORTS

S.NO.	Category	Male		Female	
		M	SD	M	SD
1.	Active Adolescents	47.36	8.01	47.87	7.76
2.	Inactive Adolescents	46.54	8.94	43.10	8.30

Mean scores on academic stress of active and inactive adolescents male and female adolescents in interscholastic sports have been depicted in figure 1 and 2.

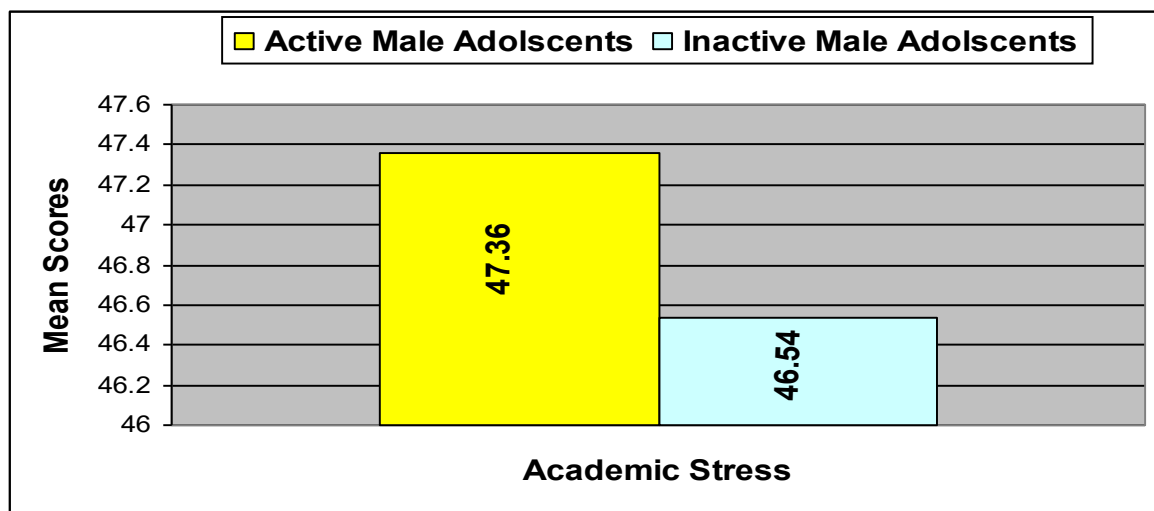


Figure. 1: Mean Scores of Academic Stress of Active and Inactive Male Adolescents in interscholastic sports

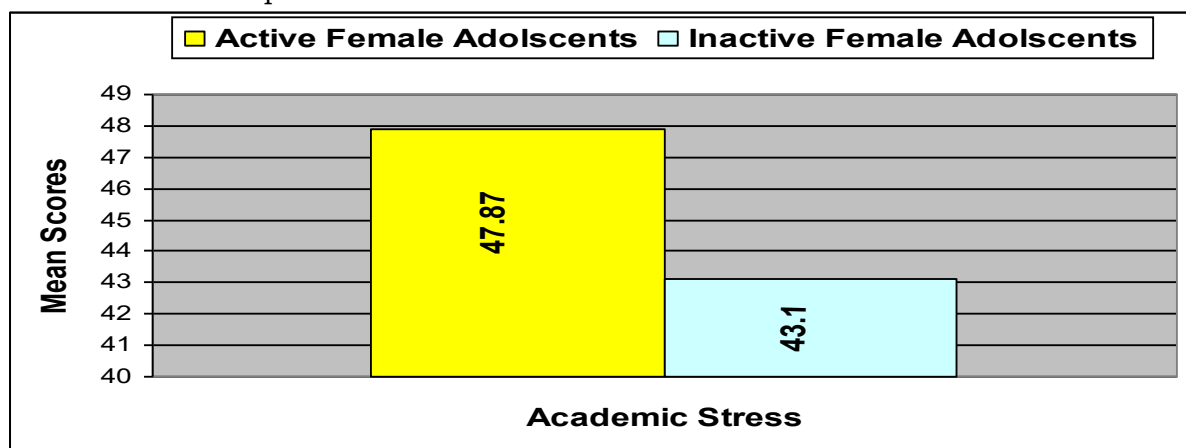


Figure. 2: Mean Scores of Academic Stress of Active and Inactive Female Adolescents in interscholastic sports

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES ON ACADEMIC STRESS OF ACTIVE AND INACTIVE MALE ADOLESCENTS IN INTERSCHOLASTIC SPORTS

Category	Mean	Standard Deviation	t-ratio	Sig.
Active Adolescents (N=164)	47.36	8.01	.848	.398
Inactive Adolescents (N=164)	46.54	8.94		

Significant at .05 level

t.05 (184) =1.66.

Table 2 reveals that the significant difference was not found between active and inactive adolescents male adolescents in interscholastic sports, as the obtained t-ratio of 0.848 was lower than the required t.05 (326) =1.65. Hence, the null hypothesis was accepted.

TABLE 3
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES ON ACADEMIC
STRESS OF ACTIVE AND INACTIVE FEMALE ADOLESCENTS IN
INTERSCHOLASTIC SPORTS

	Mean	Standard Deviation	t-ratio	Sig.
Active Adolescents (N=93)	47.87	7.76	2.37	.02
Inactive Adolescents (N=93)	43.10	8.30		

Significant at .05 level

t.05 (184) =1.66.

It is clear evident from Table 3 that there was a significant difference between active and inactive female adolescents in interscholastic sports, as the obtained t-ratio of 2.37 was higher than the required t.05 (184) =1.66. Hence, the null hypothesis was rejected.

DISCUSSION

The study findings revealed that the academic stress in boys section between sportspersons and non sportspersons did not differ significantly. At the same time, the academic stress in girls section between sportspersons and non sportspersons differed significantly. The boys irrespective of their participation in interscholastic sports had similar stress. Adolescent girls had higher academic stress than boys in a study by Deb, Strodl and Sun (2014) on private secondary school students in India

Girls who participated in interscholastic sports had higher academic stress as compared to their non participative counterpart. The reason for such observation is discussed as below: The social stigma of early sexual orientation might have had a profound effect on adolescent girls under present investigation. The female sportspersons might fear more regarding their fate in academic endeavors. The participation of girls in sports has still not become popular especially in semi-urban and rural settings. There might be restrictions for girls participating in sports and hence their stress level might be higher.

In the study of Sitkowski (2008), it was found that athletic participation had a positive effect on academic achievement and that impact may be considerable to the difference between male in season and out of season performance. Tower (2008) supported this notion through his study on high school students who participated in non-revenue sports, have a competitive disposition which motivates them to perform well in school.

Another reason might be attributed to physiological changes following participation in sporting endeavors. Coping to such physical stress may have direct relationship with academic stress. Time devoted for academic activities may be occupied by practice and competition related to interscholastic sports. Further, this may lead to missing of classes and result in additional burden on them.

CONCLUSION

The study findings revealed that the active and inactive male adolescence in interscholastic sports did not differ significantly in their academic stress. But the active and inactive female adolescence in interscholastic sports differed significantly in their academic stress.

The boys irrespective of their participation in interscholastic sports had similar stress. Female adolescents had higher academic stress than male adolescents. This was supported by Deb, Strodl and Sun (2014).

BIBLIOGRAPHY

Ang, R. P., & Huan, V. S. "Relationship between academic stress and suicidal ideation: Testing for depression as a mediator using multiple regression". Child Psychiatry and Human Development. 37 (2006) : 133-143.

Byrne, D.G., Davenport, S.C., & Mazanov, J. "Profiles of adolescent stress: The development of the adolescent stress questionnaire (ASQ)". Journal of Adolescence . 30 (2007) : 393-416.

Caltabiano, M.L., Sarafino, E.P., & Byrne, D. Health Psychology (2nd ed). Australia: John Wiley & Sons Ltd, 2008.

Compas, B. E. and Reeslund, K. L. "Processes of Risk and Resilience During Adolescence". Handbook of Adolescent Psychology. 1:3 (2009):16.

Deb S, Strodl E, Sun J. Academic- related stress among private secondary school students in India. Journal of Asian Educational Development Studies. 3 (2014):118-34.

Dunne, M. P., Sun, J., Nguyen, N.D., Truc, T. T, LoanK. X., Dixon, J. "The influence of educational pressure on the mental health of adolescents in East Asia: methods and tools for research". Journal of science. 61 (2010) :109-122.

Grant, K. E., Compas, B. E., Stuhlmacher, A. F., Thurm, A. E., McMahon, S. D., and Halpert, J. A. "Stressors and Child and Adolescent Psychopathology: Moving From Markers to Mechanisms of Risk". Psychological Bulletin , 2003, pp., 447-466.

Grant, K. E., Compas, B. E., Thurm, A. E., McMahon, S. D., & Gipson, P. Y. "Stressors and child and adolescent psychopathology: Measurement issues and prospective effects". Journal of Clinical Child and Adolescent Psychology. 33 (2004) : 412 - 425.

Lal, K. "Academic stress among adolescent in relation to intelligence and demographic factors", American International Journal of Research in Humanities, Arts and Social Sciences, 5:1 (2014):123-129.

Olpin, M. N. "Perceived stress levels and sources of stress among college students: Methods". Psychology. 62 (1997) : 1231-1244.

Sitkowski, L.S. "The Effects of Participation in Athletics on Academic Performance among High School Sophomores and Juniors". Unpublished Doctoral Dissertation, Liberty University, 2008.

Sun, J., Dunne, M., Hou X. and Xu A. "Factors associated with academic stress in adolescent students in Shandaong, China" Austrlias Epidemiology. 17:2 (2010) : 122.

Tower, D. "Relationship Between Athletic and Academic Success: A Pilot Study" (2008). Honors Scholar Theses. Paper 48. http://digitalcommons.uconn.edu/srhonors_theses/48

Williams, P.G. Holmbeck, G.N., & Greenley, R.N. "Adolescent health psychology". Journal of Consulting and Clinical Psychology, 70 (2002) : 828-842.

GENDER DIFFERENCE IN ACADEMIC PERFORMANCE OF ENGLISH MEDIUM HIGHER SECONDARY SCHOOL CHILDREN INVOLVED IN SPORTS

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ABSTRACT

The aim of the present investigation was to investigate compare the academic performance of English medium higher secondary school male and female sportspersons in different school courses.. One hundred male and females sportspersons studying in 11th grade in different Public Schools of Bilaspur region were randomly selected to serve as the subjects for this study. The subjects were selected from amongst the male and female sportspersons who have taken part in different sports competitions during the session 2015-2016. The necessary permission from the principal of different public schools running in Bilaspur region was obtained by the researcher to collect academic record of 10th level examination from the concerned officer. Academic achievement record was based upon the previous achievement of each level male and female sportspersons in the form of total marks obtained in five subjects and its percentage at 10th level examination on prescribed Performa. Mean and SD, t- ratio and F-ratio were computed for the collected record of academic performance of male and female sportspersons by using SPSS 16.0 software. The results of the study revealed that Male and female sportspersons exhibited mean differences on academic performance in different school courses and total academic achievement. Female sportspersons were found better than male sportspersons in overall academic performance. Male and female sportspersons separately exhibited statistically significant difference . on academic performance in five school courses.

Keywords: Sportsperson, school children, Academic Performance, Gender

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INTRODUCTION

In the present days, every individual feels the importance of educational values in their life. In the process of education, many people follow the concept of education. They think that literacy and theoretical knowledge is the only channel of education, where as, education includes the mental, physical, social, spiritual, intellectual and economical etc., dimension to the process of learning the education.

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.

Academic Achievement refers to what and how an individual has learnt quantitatively and qualitatively after a period of instruction given. Academic excellence ensures the social development of not only the individual but also the culture with which he is closely related to. The need of high achievement is so important that it puts pressure on teachers, students and school so much so that whole education system seems to be revolving around academic performance of students.

Academic Achievement can be described as successful accomplishment or performance in particular subject area or course usually by reasons of skills, hard work, scores or descriptive commentary (Hawes, 1982).

Crow and Crow (1969) identified the academic achievement as the extent to which a learner is profiting from instructions in a given space of learning i.e., accomplishment is mirrored by the extent to which skill and knowledge has been communicated to him. It also signify

the knowledge gained and talent developed in the school subject, usually designated by test scores, commonly measured by examinations.

Differences in academic achievement continues to be one of the most complex and controversial issues in education today. In a competitive society where the level of achievement in high school has associated with it many important and lasting vocational and financial consequences for individuals, this point is of special significance for these concerned about the inequality of opportunity which has so often been demonstrated in competition may be if the courses are planned and geared according to the needs based on psychological appraisal of the student and training provided through specifically designed psychological inputs topping the affective domain, the problems of academic achievement could be tackled insightfully.

Similar to sports participation, educational performance has been outlined in a very wide range of how within the literature. According to Joel, Iderima, Osonwa and Kpolovie, (2014) educational performance is that the action of a student in terms of aggregates obtained in examination in specific subjects that protect a given educational programme. Adeyemi (2011) describes educational performance because the scholastic standing of a student at a given moment that would be explained in terms of the grades obtained in a various school courses, whiles drink (2011) outlined educational performance as a pedagogic word employed in crucial learners' success in formal education, that is measured through reports, examinations, researches and ratings with various factors or variables exerting influence.

Academic performance variables were measured in quantitative and qualitative multiform i.e. Grade point averages, Graduation and Progression Rates, American College Tests (ACT) scores, Student Assessment Test (SAT) scores, qualitative assessments of teachers' reports on students, different subject examinations and regular evaluation tests have appeared in the literature indicating the student academic performance (Joel et. al., 2014; Sitkowski, 2008; Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008; Beem, 2006).

As such various studies are conducted to seek out factors that influence educational performance. a number of the factors mentioned in recent literature embody category class attendance, age, learning designs or preferences, gender, class size, entry qualification, family financial gain, extracurricular activities, peers influence and course assessment, education of parents (Mlambo, 2011; Jayanthi, Balakrishnan, Ching, Latiff & Nasirudeen, 2014; Ali, Haider, Munir, Khan & Ahmed, 2013).

Studies reviewed on gender variations concerning academic performance of athletes exploitation completely different measures seem to follow an identical pattern of females outperforming males on most of the academic performance measures

In case of GPA as the measure of academic performance in a investigation, Amos (2013) indicated that female student-athletes had slightly higher mean GPA compared to male student-athletes. Dilley-Knoles, Burnett and Peak (2010) also reported similar findings in a research when female student-athletes achieved a higher GPA than male student-athletes at a particular institution. Covington, Simons and Van Rhee (1999) also stated that female student-athletes were superior to male student-athletes

in college GPA. Miranda, Scott, Paskus, Petr and McArdle (2008) noted that within some selected sports the average GPA for female student-athletes was considerably higher than that for male student-athletes. Georgakis, Wilson and Ferguson (2014) reported that a higher percentage of male student-athletes failed in their academic work compared to female student-athletes. Nokoe (2011) found out contrarily that there were gender differences with boys performing better than girls.

An investigation conducted by Milton and Gottschalk (2010) stated the significant differences in the academic performance between male and female student-athletes. The female student-athletes were found to have significantly higher cumulative GPA than male student-athletes. A research conducted by Bucknell University Committee on Athletics (2005) reported Contrarily that the male and female athletes did not differ significantly in cumulative GPA. Gyasi, Nartey and Coker (2011) reported that there were no statistically significant differences between male and female students' performances

The findings of the current study seems to go against the general trend of female athletes performing better academically compared to male athletes. Reasons by Coakley (2008), Harrison and Lawrence (2004) and Rische (2003) that male athletes are under immense pressure from the competitive nature of their sports compared to female athletes, hence their inability to perform as well as their females academically appears not to hold when it comes to male athletes in the University of Cape Coast, Ghana. Male athletes in Ghana may have found a way of dealing with the pressures that come with their competitive sports, hence their ability to perform just as well as their female counterparts academically.

Rishe (2003); Harrison and Lawrence (2004) and Coakley (2008) indicated that the female athletes performing better academically compared to male athletes which was discovered in the current studies. Because, the male athletes are under huge pressure from the competitive natural deposition of their sports compared to female athletes. Hence, male athletes have an inability to perform as well as their females academically.

The aim of the present investigation was to investigate compare the academic performance of English medium higher secondary school male and female sportspersons in different school courses..

METHODOLOGY

Selection of Subjects:

One hundred (Males=50, Females=50) sportspersons studying in 11th grade in different Public Schools of Bilaspur region were randomly selected to serve as the subjects for this study.

The subjects were selected from amongst the male and female sportspersons who have taken part in different sports competitions during the session 2015-2016.

Instrumentation

The necessary permission from the principal of different public schools running in Bilaspur region was obtained by the researcher to collect academic record of 10th level examination from the concerned officer. Academic achievement record was based upon the previous achievement of each level male and female sportspersons in the form of total marks obtained in five subjects and its percentage at 10th level examination on prescribed Performa.

RESULTS AND DISCUSSION

Mean and SD, t- ratio and F- ratio were computed for the collected record of academic performance of male and female sportspersons by using SPSS 16.0 software and data pertaining to this, has been presented in Table 1 to 6.

TABLE 1
DESCRIPTIVE STATISTICS OF MALE AND FEMALE SPORTSPERSONS WITH REGARD ACADEMIC PERFORMANCE IN DIFFERENT SCHOOL COURSES

		Male Sportsperson		Female Sportsperson	
S.NO.	School Courses	Mean	SD	Mean	SD
1	English	62.18	13.71	65.30	12.86
2	Hindi	74.72	14.98	79.16	10.76
3	Math	65.26	16.78	63.26	15.34
4	Social Studies	65.65	18.25	66.65	15.81
5	Social Science	73.56	16.33	71.71	14.86
6	Total Academic Performance	338.21	77.16	344.70	65.62

The mean scores of academic performance in various school courses of male and female sportspersons studying in different

public schools of Bilaspur region have been depicted in figures 1 and 2.

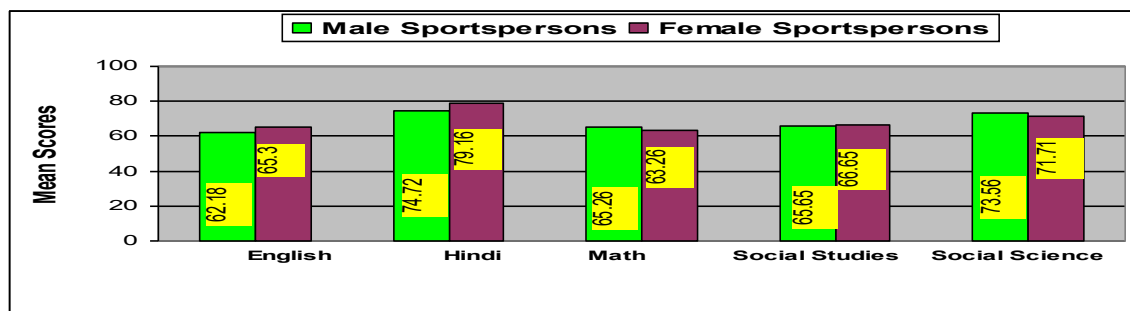


Figure:1-Mean Scores of Male and Female Sportspersons on Academic performance in five different School Courses.

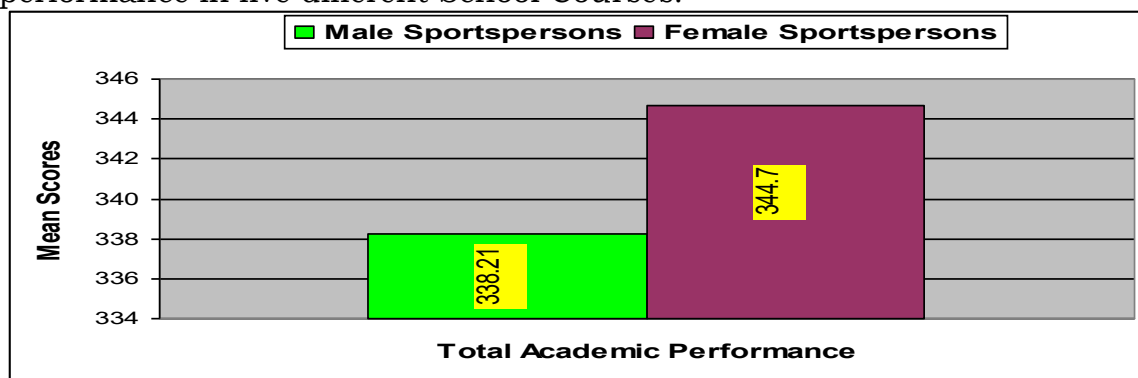


Figure:2-Mean Scores of Male and Female Sportspersons on Over All Academic performance

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF MALE AND FEMALE SPORTSPERSONS ON ACADEMIC PERFORMANCE IN DIFFERENT SCHOOL COURSES

School Courses	Sex	M	MD	σ_{DM}	t-ratio
English	Male	62.18	3.12	2.65	1.17
	Female	65.30			
Hindi	Male	74.72	4.44	2.60	1.70*
	Female	79.16			
Math	Male	65.26	2.00	3.21	0.62
	Female	63.26			
Social Studies	Male	65.65	1.00	3.41	0.29
	Female	66.65			
Social Science	Male	73.56	1.85	3.12	0.59
	Female	71.71			
Total Academic Achievement	Male	338.21	6.49	14.32	0.45
	Female	344.70			

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

It is quite obvious from Table 2, that statistically significant differences were not found between male and female sportspersons on academic performance in five different school

courses and total academic achievement, as the obtained t-values of 1.17, 1.70, 0.62, 0.29, 0.59, and 0.45 respectively were higher than the required $t_{.05(98)}=1.98$.

TABLE 3
ANALYSIS OF VARIANCE ON ACADEMIC PERFORMANCE IN VARIOUS SCHOOL COURSES OF MALE CHILDREN

Source of Variance	df	Sum of Squares	Mean Square	F-Value
Between groups	4	6129.96	1532.49	5.92*
Within groups	245	63388.03	258.73	

*Significant at .05 level

F .05(4,245) =2.42

It is evident from table 3, that the significant difference was found among male sportspersons in various school courses, as the obtained F-values of 5.92 was higher than the required F .05(4,495) =2.40

As the F-ratio on various school courses was found to be significant

among male sportspersons, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of male sportspersons in various school courses and data pertaining to this, has been presented in table 4.

TABLE 4
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF ACADEMIC PERFORMANCE OF MALE CHILDREN IN VARIOUS SCHOOL COURSES

English	Hindi	Math	Social Studies	Social Science	MD	C.I.
62.18	74.72	-	-	-	12.54*	10.01
62.18	-	65.26	-	-	3.08	
62.18	-	-	65.65	-	3.47	
62.18	-	-	-	73.56	11.38*	
-	74.72	65.26	-	-	9.46	
-	74.72	-	65.65	-	9.07	
-	74.72	-	-	73.56	1.16	
-	-	65.26	65.65	-	0.39	
-	-	65.26	-	73.56	8.30	
-	-	-	65.65	73.56	7.91	

*Significant at .05 level

The data in table 4 clearly indicates that mean differences between English – Hindi course followed by Social science were found statistically significant among male children, as the obtained mean differences of 12.54 and 11.38 respectively were higher than the confidence interval of 10.01. The significant differences were not observed among male children in

various school courses between English – Math followed by Social studies; between Hindi-Math followed by Social studies and Social science; between Math – Social studies followed by Social Science and between Social Studies-Social Science, as the obtained paired mean differences of 3.08, 3.47, 9.46, 9.07, 1.16, 0.39, 8.30 and 7.91 were lesser than the confidence interval of 10.01.

TABLE 5
ANALYSIS OF VARIANCE ON ACADEMIC PERFORMANCE IN VARIOUS SCHOOL COURSES OF FEMALE CHILDREN

Source of Variance	df	Sum of Squares	Mean Square	F-Value
Between groups	4	8124.83	2031.21	10.29*
Within group	245	48380.01	197.47	

*Significant at .05 level

F .05(4,245) =2.42

It is evident from table 5, that the significant difference was found among female sportspersons in various school courses, as the obtained F-values of 10.29 was much higher than the required F .05(4,495) =2.40.

As the F-ratio on various school courses was found to be significant

among female sportspersons, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of female sportspersons in various school courses and data pertaining to this, has been presented in table 6

TABLE 6
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF ACADEMIC PERFORMANCE OF FEMALE CHILDREN IN VARIOUS SCHOOL COURSES

English	Hindi	Math	Social Studies	Social Science	MD	C.I.
65.30	79.16	-	-	-	13.86*	8.74
65.30	-	63.26	-	-	2.04	
65.30	-	-	66.65	-	1.35	
65.30	-	-	-	71.71	6.41	
-	79.16	63.26	-	-	15.90*	
-	79.16	-	66.65	-	12.51*	
-	79.16	-	-	71.71	7.45	
-	-	63.26	66.65	-	3.39	
-	-	63.26	-	71.71	8.45	
-	-	-	66.65	71.71	5.06	

*Significant at .05 level

The data in table 6 clearly indicates that mean differences between English – Hindi course: between Hindi-Math followed by Social studies were found statistically significant among female children , as the obtained mean differences of 13.86, 15.90 and 12.51 respectively were higher than the confidence interval of 8.74. The significant differences were not observed among female children in

various school courses between English – Math followed by Social studies and Social science; between Hindi- Social science; between Math – Social studies followed by Social Science and between Social Studies-Social Science, as the obtained paired mean differences of 2.04, 1.35, 6.41, 7.45,3.39,8.45 and 5.06 were lesser than the confidence interval.

DISCUSSION

Descriptive statistics for academic performance in five school courses separately and over all academic performance were computed for male and female sportspersons. The results of the study indicated that female sportspersons were performed better than their male counter parts in overall academic performance. This was supported by Rishe (2003); Harrison and Lawrence (2004) and Coakley (2008); Amos (2013); Dilley-Knoles, Burnett and Peak (2010); Covington, Simons and Van Rheenen (1999); Miranda, Scott, Paskus, Petr and McArdle (2008); Georgakis, Wilson and Ferguson (2014).

When the male and female sportsperson were compared together in five school courses separately and over all academic performance, statistically significant differences were not observed in any corner of academic performance. Many researchers like NCCA, 1999; Covington, Simons & Van-Rheenen, 1999; Gohl, 2001; Scott, Paskus, Miranda, Petr & McArdle, 2008; Dilley-Knoles, Burnett & Peak, 2010; Kyei, Apam & Nokoe, 2011; Rishe, 2012; ; Amos, 2013; University of Central Florida, 2013 and Georgakis, Wilson & Ferguson, 2014 had reported contradiction in the findings of the current study that the male and female athletes and students in general exhibited significant differences in their academic performance.

When the male sportspersons taken separately had significant differences in different school courses, which showed dissimilarity in their educational performance. It may be due to variations in mental, physical, social, spiritual, intellectual and economical etc., dimension to the process of learning the education. The female sportspersons taken separately expressed significant differences in their different school courses, which

may be due variation in class attendance, learning designs or preferences, gender, class size, entry qualification, family financial gain, extracurricular activities, peers influence and course assessment, education of parents.

CONCLUSIONS

1. Male and female sportspersons exhibited mean differences on academic performance in different school courses and total academic achievement,
2. Male sportspersons achieved lower in English, Hindi social studies and total academic achievement and higher in math and social science than female counter parts.
- 3.. Female sportspersons were found better than male sportspersons in overall academic performance.
4. Male and female sportspersons separately exhibited statistically significant difference . on academic performance in five school courses.

BIBLIOGRAPHY

- Hawes, G. R. & Hawes, L.S. (1982).** The concise dictionary of education. Van Nostrand Reinhold Company. New York, NY.
- Crow & Crow (1969).** Adolescent development and adjustment, Mc. Graw Hill Book Company, U.S
- Adeyemi, T. O. (2011).** A Comparative Study of Students' Academic Performance in Public Examinations in Secondary Schools in Ondo and Ekiti States, Nigeria. *Current Research Journal of Economic Theory*, 3(2), 36-42.
- Ali, S., Haider, Z., Munir, F., Khan, H., and Ahmed, A. (2013).** Factors contributing to the students academic performance: A case study of Islamia University sub-campus. *American Journal of Educational Research*, 1: 283-289.
- Amos, C. (2013).** A Quantitative Analysis of Collegiate Athletic Involvement and Academic Achievement among Sport Management Students. A Master's Thesis submitted to the School of Post-Graduate Studies, Liberty University, Lynchburg, VA, USA. Retrieved March 15, 2015, from <http://digitalcommons.liberty>

Beem, K. (2006). Righting the balance in the athletics-academic equation: The School Administrator, 1-15.

Bucknell University Committee on Athletics (2005). The Effect of Varsity Athletic Participation on Academic Performance: Evidence from the 2004 Graduating Class. A report prepared by the Committee on Athletics. Retrieved March 20, 2015, from <http://www.departments.bucknell.edu/athletics>

Coakley, J. (2008). Sport in society (10th ed.). New York, NY: McGraw-Hill.

Covington, M., Simons, H., & Van Rheen, D. (1999). Academic motivation and the student athlete. Journal of College Student Development, 40: 151-162.

Dilley-Knoles, J., Burnett, J. S., & Peak, K. W. (2010). Making the grade: Academic success in today's athlete. The Sport Journal, 13(1).

Georgakis, S., Wilson, R & Ferguson, J. (2014). The academic achievement of elite athletes at an Australia University: Debunking the dumb jock syndrome. International Journal of Higher Education, 3(2): 120-121. Retrieved March 16, 2015, from <http://dx.doi.org/10.5430/ijhe.v3n2p120>

Gohl, S. E. (2001). A lesson in english and gender: Title IX and the male student-athlete. Duke Law Journal, 50:1123-1164.

Gyasi, W. K., Nartey, T. A., & Coker, W. (2011). A Preliminary Report on First Year University Students' Knowledge of Basic Grammar: The Case of the University of Cape Coast, Ghana. Current Research Journal of Social Sciences, 3(5): 399-405.

Harrison, C. K., & Lawrence, S. M. (2004). Female and male student athletes' perceptions of career transition in sport and higher education: A visual elicitation and qualitative assessment. Journal of Vocational Educational and Training, 56(4): 485-506.

Jayanthi, S.V., Balakrishnan, S., Ching, A. L. S., Latiff, N. A. A., & Nasirudeen, A.M.A. (2014). Factors contributing to academic performance of students in a tertiary institution in Singapore. American Journal of Educational Research, 2(9): 752-758.

Joel, A. I., Kpolovie, P. J., Osonwa, K. E., & Iderima, C. E. (2014). Modes of admission and academic performance in Nigerian Universities. Merit Research Journal of Education and Review, 2(9): 203-230.

Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). Validity of the SAT for predicting first-year college grade point average. New York, NY: College Board.

Kyei, L., Apam, B., & Nokoe, K. S. (2011). Some gender differences in performance in senior high mathematics examinations in mixed high schools. American Journal of Social and Management Sciences, 2(4): 348-355. Retrieved March 25, 2015, from <http://www.scihub.org/AJSMS>

Milton, P. R., & Gottschalk, R. (2010). Differences in academic success between male and female student-athletes: an exploratory study. International Journal of Sport Management, 11(4): 602-608.

Mlambo, V. (2011). An analysis of some factors affecting student academic performance in an introductory biochemistry course at the University of the West Indies. Caribbean Teaching Scholar, 1: 79-92.

NCA A (1999). 1988-1999 Official NCAA Graduation Rates Report. Overland Park, KS: National Collegiate Athletic Association.

Rishe, P. J. (2012). A Reexamination of How Athletic Success Impacts Graduation Rates: Comparing Student-Athletes to All Other Undergraduates. American Journal of Economics and Sociology, 62 : 407-27.

Scott, B. M., Paskus, T. S., Miranda, M., Petr, T. A., & McArdle, J. J. (2008). In-season vs. out of-season academic performance of college student-athletes. Journal of Intercollegiate Sports, 1: 202-226.

Sitkowski, L. S. (2008). The effects of participation in athletics on academic performance among high school sophomores and juniors. Unpublished Ph. D. dissertation, Faculty of the School of Education, Liberty University. Retrieved January 28, 2013, from <http://www.donaldcollins.org>

Tope, O. (2011). The Effects of study habit on the academic performance of students: A case study of some secondary schools in Ogun State. Ogun State, Nigeria: EgoBooster Books.

University of Central Florida (2013). Annual study "Keeping the scores when it counts: Academic Progress/Graduation Success Rate Study of 2013 NCCA Division 1 women's and men's basketball tournament teams". Retrieved March 16, 2015, from <http://www.tidesport.org/Grad%20Rates>.

COMPARISON OF STRENGTH AND ENDURANCE OF TRIBAL BOYS AND GIRLS IN AGE OF 13 to 17 YEARS OF AGE

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ABSTRACT

The purpose of the study was to compare and investigate the upper body strength and endurance of school children of northern tribal region of West Bengal. One thousand and eleven boys and girls (five hundred and eleven boys and five hundred girls) children ranging ages between 13 to seventeen years studying in middle schools, high schools and higher secondary schools in northern tribal region of West Bengal were randomly selected for the present investigation. To find out the significance of difference among the means on push-ups component of health fitness in different age groups, one way mean, SD, t-ratio and F-ratio were computed. The results of the study concluded that the upper body strength and endurance improved among boys and girls with advancement of age. But the significant differences were found between boys and girls children of thirteen to seventeen years of age in their upper body strength and endurance, The boys were better than girls in their upper body strength and endurance in all age groups.

Key words: School Children, strength, Endurance, Age groups, Sexes

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INTRODUCTION

Physical fitness could be a dynamic construct and is continually growing in importance to standard of living and health. It is important to live fitness each as associate outcome of physical activity and as a intercessor of physical activity's impact on illness morbidity, mortality and injury. The measurement of fitness ought to become associate vital a part of police investigation systems that track physical activity and risks for illness or injury (Dishman, Washburn & Heath, 2004).

Muscular strength and endurance is the ability of a muscle or muscle group to execute continual contractions over a amount comfortable to cause muscular fatigue, or to maintain a particular percentage of the most voluntary contraction for a chronic amount (ACSM, 2005)

The push-up is more closely associated with penalization than anything. It was most favorite among education teachers and drill instructors. Though, its use in strength and conditioning regimens was in frequent. In an earlier time, the push-up was largely regarded as a live of a man's strength and fitness. In more present a lot of this name has been passed on to the bench press, but the push-up's passing misses the nice chance to master a entranceway movement to at least one of the foremost biological process progressions altogether of fitness (Glassman, 2003).

A push-up is a common calisthenics exercise performed in a very prone position by raising and lowering the body exploitation the arms. Push-ups exercise the pectoral muscles, triceps, and anterior deltoids, with ancillary advantages to the rest of the deltoids, serratus anterior, coracobrachialis and the midsection as a full. Push-ups are a basic exercise

used in civilian coaching and training or education and unremarkably in military physical training. They are a typical sort of penalization employed in the military, school sport, or in some martial arts disciplines.

Push-ups promotes shoulder stability and range of motion in the joint. This position and mobility transfers to a upward and downward arm swing with a smart elbow drive. Doing pushups with the elbows flared out promoted associate unstable and internally turned shoulder position. This poor position surfaces as a stiff and inefficient forward and backward arm swing when you run, where the elbows drive across the body (Helming,2014).

The push-up mainly encourage to develop the muscles of the chest, arms, and shoulders, which required support from alternative muscles results in a wider vary of muscles integrated into the exercise (American Council on Exercise, 2011) .

Push-ups are extensively used for the development of upper body strength, power and muscular endurance in fitness settings. There are many principal exercises in fitness, which are used by strength and conditioning experts to train athletes in sports, such as baseball (Hammer,2009), boxing (Wallace and Flanagan, 1999), and martial arts (La Bounty, et.al. 2011); and they play a prominent role in the basic training programs of the United States Military (Popovich, et.al. 2000). Although, the load during a push-up is limited by an individual's body weight and anthropometry, many biomechanical variations of the exercise can be performed to change muscle activity, which may be lesser or greater to develop the muscles. These variations most often change the hand and foot positions, which impacts muscle

recruitment patterns and joint stresses (Chuckpaiwong and Harnroongroj, 2009).

The push-up has long been advocated as a means to assess the muscular endurance of the upper body particularly. A variety of push-up tests are commonly employed as part of a fitness assessment. These tests have been validated across a wide range of populations (Wood and Baumgartner, 2004).

Contreras et.al.(2012) concluded that Push-ups can be an excellent exercise for improving muscle strength and endurance. It is imperative that practitioners possess adequate knowledge of push-up variations in order to optimize the challenge on the target musculature without compromising proper form and risking injury.

Vishen and Sen (2015) concluded that the effective improvement of upper body performance was observed through dynamic and plyometric push up training among male cricket players.

The purpose of the study was to compare and investigate the upper body strength and endurance of school children of northern tribal region of West Bengal

METHODOLOGY

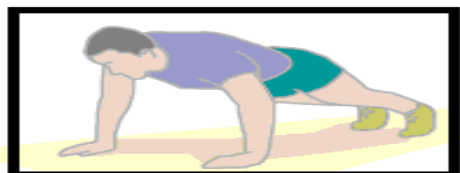
Selection of Subjects

One thousand and eleven boys and girls (five hundred and eleven boys and five hundred girls) children ranging ages between 13 to seventeen years studying in middle schools, high schools and higher secondary schools in northern tribal region of West Bengal

were randomly selected for the present investigation. They were randomly selected. Their age records were collected from school records. and tested on push-ups within one month of their birthdays.

Testing Procedure:

Purpose -To measure higher body strength and Endurance. **Equipment:** Gymnasium mat and stopwatch. **Procedure:** The test position varies between boys and girls. The male participant in the common place "up" position. The hands were shoulder width apart whereas the feet were unbroken along. The back was straight, with head up, with the participant using the toes as the important purpose. Female participants adopted a changed "knee push-up" position, with legs together, lower leg in contact with mat with ankles plantar flexed. The back kept straight, hands shoulder width apart and head command up. On the 'go' command, each participant began the push-up by bending the elbows and lowering the entire body as a unit till the higher arms were parallel to the bottom. Each participant lowered their bodies till their chins and abdomen touches the mat. The participant returned to the beginning position by raising the entire body till the arms were absolutely extended. The body remained straight and moved as a unit for the entire repetition. **Scoring:** The maximal range of push-ups performed consecutively in one minute while not rest was counted as the score.



Push-Ups by Boys



Push-Ups by Girls

RESULTS AND DISCUSSION

To find out the significance of difference among the means on push-ups component of health fitness in different age groups, one way mean,

SD, t-ratio and one way Analysis of Variance (ANOVA) were computed and data pertaining to this has been presented in Table 1 to 6.

TABLE 1

DESCRIPTIVE STATISTICS ON PUSH-UPS COMPONENT OF PHYSICAL FITNESS OF BOYS AND GIRLS AGED THIRTEEN TO SEVENTEEN YEARS

Age in years	Mean	SD	Mean	SD
13	7.77	1.71	11.63	1.52
14	13.56	2.52	10.74	2.17
15	14.94	2.77	12.70	2.77
16	16.57	3.18	14.91	2.97
17	19.31	3.77	18.03	3.52

The mean scores of push-ups component of health fitness of male and female children belong to northern

tribal region of West Bengal aged 13 to 17 years have been depicted in figure 1 to 5

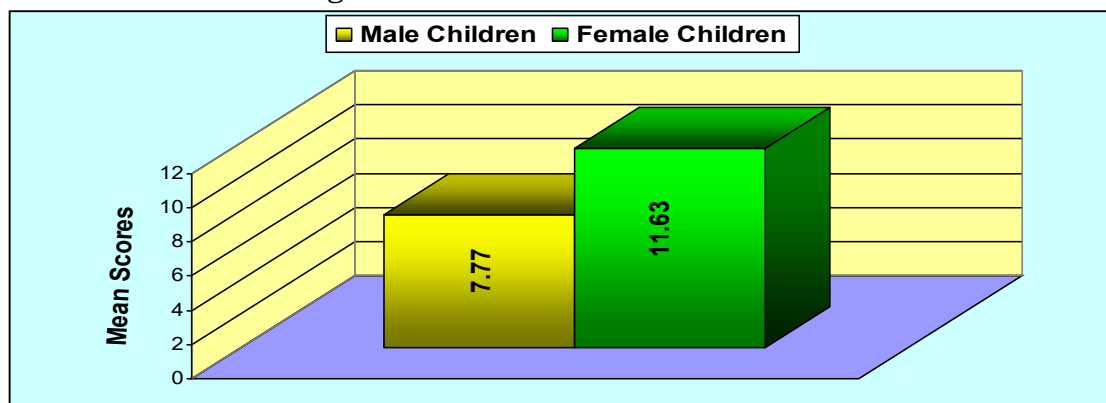


Figure. 1: Mean Scores of Upper body Strength and Endurance of Male and female Children in thirteen years of age

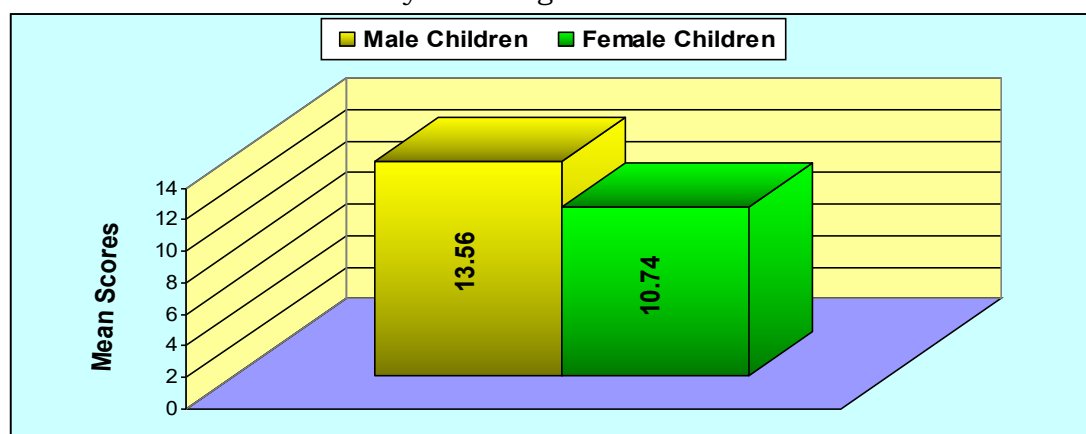


Figure. 2: Mean Scores of Upper body Strength and Endurance of Male and female Children in Fourteen years of age

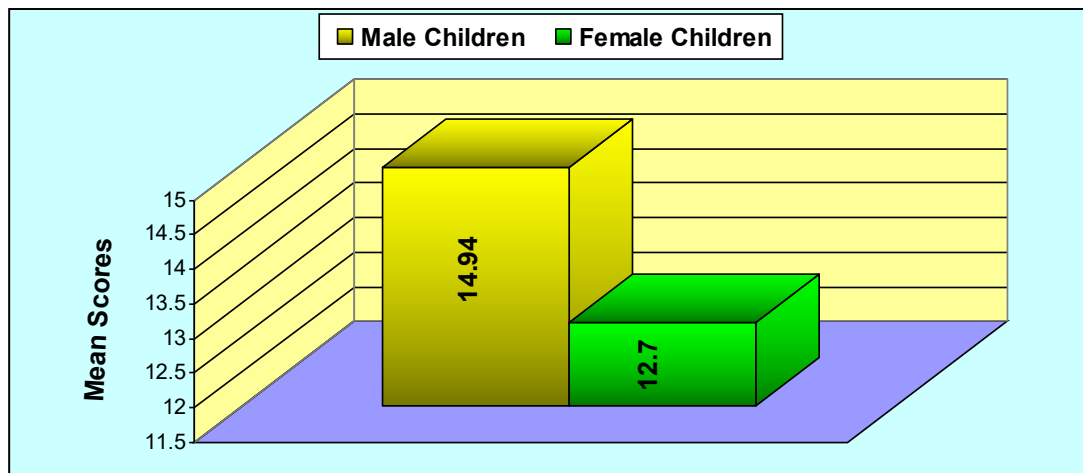


Figure. 3: Mean Scores of Upper body Strength and Endurance of Male and female Children in Fifteen years of age.

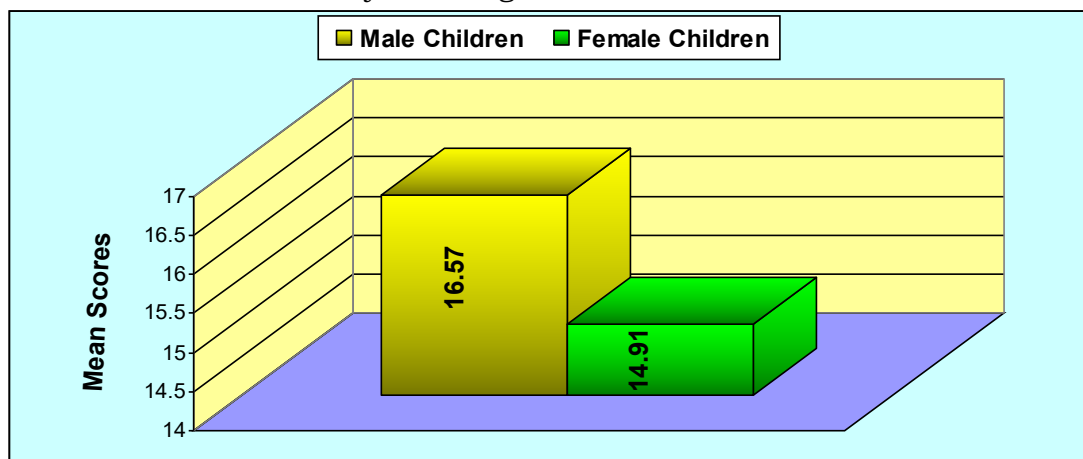


Figure. 4: Mean Scores of Upper body Strength and Endurance of Male Female Children in Sixteen years

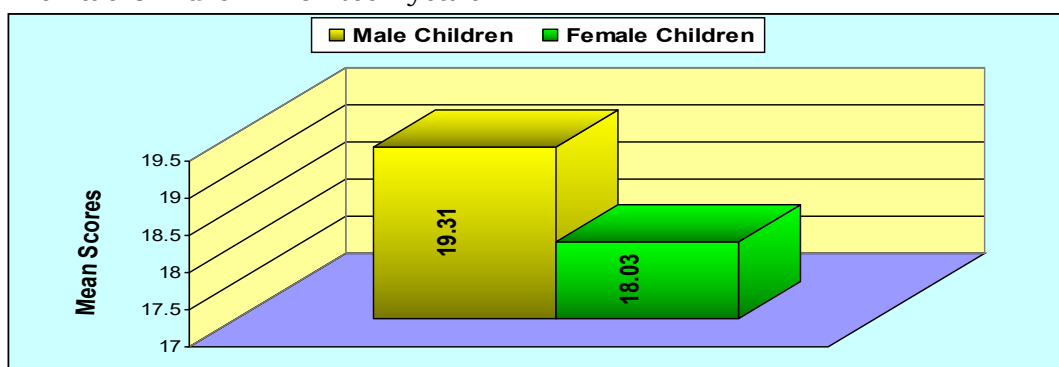


Figure. 5: Mean Scores of Upper body Strength and Endurance of Male and female Children in Seventeen years of age.

TABLE 2
ANALYSIS OF VARIANCE ON PUSH-UPS COMPONENTS OF PHYSICAL FITNESS OF BOYS FROM THIRTEEN TO SEVENTEEN YEARS OF AGE

Sex	Source of Variance	df	Sum of Squares	Mean Square	F-Value
Boys	Between groups	4	3481.33	870.33	104.87*
	Within group	506	4199.42	8.299	

*Significant at .05 level,
F. .05(4,506) =2.39

It is evident from table 2, that the significant difference was found among boys of different age groups on push-ups component of physical fitness, as the obtained F-values of 104.87 was much higher than the required F.05 (4, 506)=2.39. As the F-ratio on push-ups component of physical fitness was found to be

significant, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of different age group and data pertaining to this, has been presented in table 3 and depicted in figure 6.

TABLE 3
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR BOYS FROM THIRTEEN TO SEVENTEEN YEARS OF AGE ON PUSH-UPS

13	14	15	16	17	MD	C.I.
7.77	13.56	-	-	-	5.79*	1.25
7.77	-	14.94	-	-	7.17*	1.25
7.77	-	-	16.57	-	8.80*	1.25
7.77	-	-	-	19.31	11.54*	1.25
-	13.56	14.94	-	-	1.38*	1.25
-	13.56	-	16.57	-	3.01*	1.25
-	13.56	-	-	19.31	5.75*	1.25
-	-	14.94	16.57	-	1.63*	1.25
-	-	14.94	-	19.31	4.37*	1.25
-	-	-	16.57	19.31	2.74*	1.25

*Significant at .05 level

The data in table 3 clearly reveals that mean differences between thirteen - fourteen followed by fifteen, sixteen and seventeen; between fourteen - fifteen followed by sixteen and seventeen; between fifteen - sixteen followed by seventeen; between

sixteen - seventeen years of age boys were found statistically significant, as the confidence intervals were lesser than the mean differences. The data clearly indicate that shoulder strength and endurance improved with age.

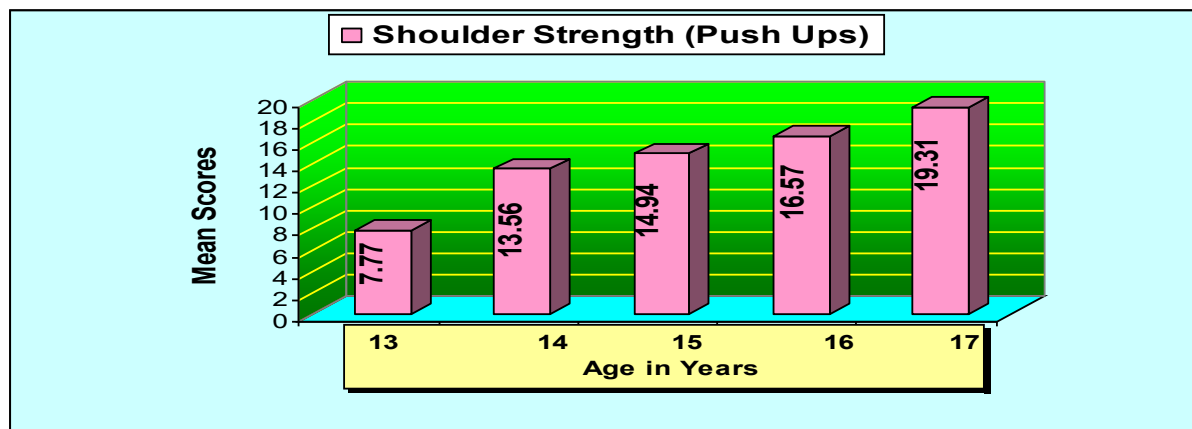


Figure. 6: Mean scores of Boys of Thirteen to seventeen Years of Age on Upper body Strength and Endurance.

TABLE 4
ANALYSIS OF VARIANCE ON PUSH-UPS COMPONENTS OF PHYSICAL FITNESS OF GIRLS FROM THIRTEEN TO SEVENTEEN YEARS OF AGE

Sex	Source of Variance	df	Sum of Squares	Mean Square	F-Value
Girls	Between groups	4	6135.50	1533.88	213.69*
	Within group	495	3553.05	7.178	

*Significant at .05 level

$F_{.05(4,495)} = 2.40$

It is evident from table 4, that the significant difference was found among girls of different age groups on push-ups component of physical fitness, as the obtained F-values of 213.69 was much higher than the required $F_{.05(4,495)} = 2.40$

As the F-ratio on push-ups component of physical fitness was

found to be significant, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of different age group and data pertaining to this, has been presented in table 5 and depicted in figure 7.

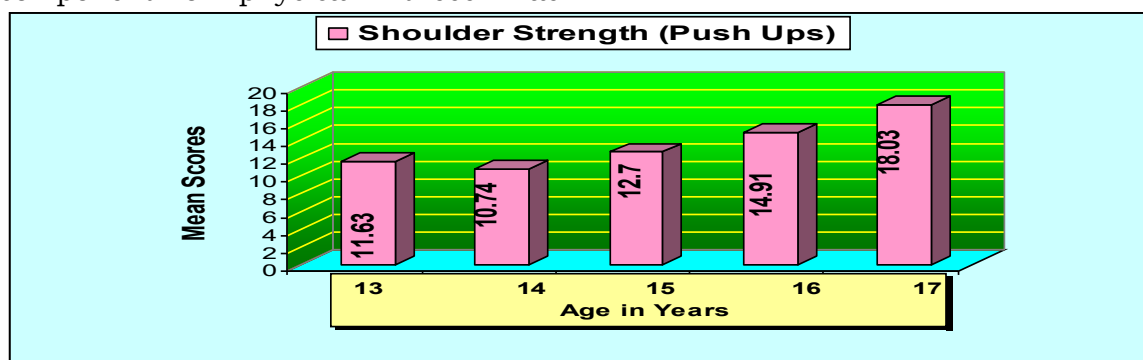


Figure. 7: Mean scores of Female children of Thirteen to seventeen Years of Age on Upper body Strength and Endurance.

TABLE 5
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR
GIRLS FROM THIRTEEN TO SEVENTEEN YEARS OF AGE
ON PUSH-UPS

13	14	15	16	17	MD	C.I.
11.63	10.74	-	-	-	0.89	1.17
11.63	-	12.70	-	-	1.07	1.17
11.63	-	-	14.91	-	3.28*	1.17
11.63	-	-	-	18.03	6.40*	1.17
-	10.74	12.70	-	-	1.96*	1.17
-	10.74	-	14.91	-	4.17*	1.17
-	10.74	-	-	18.03	7.29*	1.17
-	-	12.70	14.91	-	2.21*	1.17
-	-	12.70	-	18.03	5.33*	1.17
-	-	-	14.91	18.03	3.12*	1.17

*Significant at .05 level

The data in table 5 clearly indicates that mean differences between thirteen - fourteen followed by fifteen were not found statistically significant, as the confidence intervals were higher than the mean differences. The significant differences were observed among girls between fourteen - fifteen followed by sixteen and

seventeen; between fifteen - sixteen followed by seventeen; between sixteen - seventeen years of age were found statistically significant, as the confidence intervals were lesser than the mean differences. The data clearly indicate that shoulder strength and endurance improved with advancement age,

TABLE 6
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES ON PUSH-UPS
COMPONENTS OF PHYSICAL FITNESS OF BOYS AND GIRLS FROM
THIRTEEN TO SEVENTEEN YEARS OF AGE

Age Group	N	Sex	Mean	M.D.	σ D.M.	t-ratio
13 yrs	103	Male	7.77	3.86	0.23	16.78*
	100	Female	11.63			
14yrs	103	Male	13.56	2.82	0.33	8.54*
	100	Female	10.74			
15 yrs.	103	Male	14.94	2.24	0.39	5.74*
	100	Female	12.70			
16 yrs	103	Male	16.57	1.66	0.43	3.86*
	100	Female	14.91			
17 yrs	103	Male	19.31	1.28	0.51	2.51*
	100	Female	18.03			

It is quite obvious from Table 6, that statistically significant differences existed between boys and girls of northern tribal region of West Bengal on push-ups component of physical

fitness in age of thirteen, fourteen, fifteen, sixteen and seven years, as the obtained t-values of 16.38, 8.54, 5.74, 3.86 and 2.51 respectively were higher than the required $t_{.05}(201)=1.97$.

DISCUSSION

Descriptive statistics on push-ups component of fitness of boys and women aged 13 to seventeen years indicated that the boys in age of fourteen to seventeen years were found higher than women. This may be attributed to the dearth of food nutrients area unit cultural beliefs regarding foods, poverty, and lack of awareness (Zwiren, 1993). But the women in age of 13 years were found to possess additional shoulder strength than boys.

The results of one way analysis of variance (ANOVA) for boys of various age teams on push-ups element of fitness expressed vital variations on higher body strength and endurance. The Scheffe's Test of Post-hoc Comparison showed that higher body strength and endurance. improved with advancement of age. But the vital variations exhibited by the boys in their shoulder strength between 13 - fourteen followed by fifteen, sixteen and seventeen; between fourteen - fifteen followed by sixteen and seventeen; between fifteen - sixteen followed by seventeen; between sixteen - seventeen years of age boys.

The results of one way analysis of variance (ANOVA) for women of totally different age teams on push-ups element of fitness conjointly expressed the numerous variations on higher body strength and endurance.. The Scheffe's Test of Post-hoc Comparison showed that higher body strength and endurance. improved with advancement of age. But the vital variations exhibited by the women in their shoulder strength between 13 - fourteen followed by fifteen weren't found statistically vital. The vital variations were discovered among women between fourteen - fifteen followed by sixteen and seventeen; between fifteen - sixteen followed by seventeen; between sixteen

- seventeen years more matured were found statistically significant.

When the boys and women youngsters of 13 to seventeen years of age were compared along on push-ups element of fitness, they had statistically significant distinction in their push-ups element of fitness. Which could flow from to variations in dietary intake, conditioning program and socioeconomic standing.

CONCLUSIONS

1. Dissimilarity was observed among boys and girls children of different age groups on push-ups component of physical fitness.
2. Improvement was seen in their upper body strength and endurance among boys and girls with advancement of age.
3. Statistically significant differences were found between boys and girls children of thirteen to seventeen years of age on push-ups component of fitness,

REFERENCES

- Baumgartner, T, Oh, S, Chung, H, and Hales, D. "Objectivity, reliability, and validity for a revised push-up test protocol". Measurement in Physical Education and Exercise Science, 6 (2002) : 225-242.
- Bret Contreras, Brad Schoenfeld, Jonathan Mike, Gul Tiriyaki-Sonmez, and John Cronin "The Biomechanics of the Push-Up: Implications for Resistance Training Programs" Strength & Conditioning Journal, 34: 5 (October 2012) : 41-46.
- Chuckpaiwong, B, and Harnroongroj, T. "Palmar pressure distribution during push-up exercise". Singapore Med. J.50 (2009): 702-704.
- Dishman, R. K., Washburn, R. A. & Heath, G. W. Physical activity epidemiology. Champaign, Illinois: Human Kinetics, 2004.
- Greg Glassman "The push-up" Cross Fit Journal Article Reprint , 7 (March, 2003) : 1-5.
- Hammer, C. "Preseason training for college baseball". Strength Conditioning Journal 31 (2009): 79-85. <http://running.competitor.com> Retrieved from Push-ups -Nate Helming. <https://acefitness.org>.. American Council on Exercise Retrieved 24 March 2011.

La Bounty, P, Campbell, B, Galvan, E, Cooke, M, and Antonio, J. "Strength and Conditioning Considerations for Mixed Martial Arts". Strength Conditioning Journal 33 (2011): 56-67.

Popovich, RM, Gardner, JW, Potter, R, Knapik, JJ, and Jones, BH. "Effect of rest from running on overuse injuries in army basic training" . Am. J. Prev. Med. 18 (2000): 147-155.

Pankaj Kumar Singh Vishen, Siddhartha Sen "Comparison of dynamic push- up training and plyometric push-up training on upper body performance test in cricket Player" International journal of Physical Education, Sports and Health 2:1 (2015): 199-203.

Wallace, M, and Flanagan, S. "Boxing: Resistance Training Considerations for Modifying Injury Risk". Strength Conditioning Journal 21 (1999): 31-39.

Wood, H, and Baumgartner, T. "Objectivity, Reliability, and Validity of the Bent-Knee PushUp for College-Age Women". Measurement in Physical Education and Exercise Science 8 (2004): 203- 212.

Zwiren LD. "The public health perspective: Implications for the elementary physical education curriculum". In: Leppo ML, editor. Healthy from the Start: New Perspectives on Childhood Fitness. Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education; 1993. p. 25-40.

EFFECT OF DIFFERENT YOGA PRACTICE ON PHYSICAL AND PHYSIOLOGICAL VARIABLES AMONG COLLEGE LEVEL WOMEN

Dr. A. Senthil Kumar*

[DOI No. : 08.2016-32283471](#)

ABSTRACT

The purpose of the present study was to find out the effect of different yoga practice on physical and physiological variables among college level women. For this purpose, forty five college women residing around chinnasalem town, Salem district, Tamilnadu, were selected as subjects. The age of the subjects were ranged from 18 to 25 years. They were divided into three equal groups, each group consisted of fifteen subjects, in which experimental group - I underwent Bihar School of yoga practice, experimental group - II underwent B.K.S. Iyengar yoga practice and group - III acted as control that did not participate in any special activities apart from their regular curricular activities. The training period for the study was six days (Monday to Saturday) in a week for six weeks. Prior and after the experimental period, the subjects were tested on percent of body fat, Flexibility, high density lipoprotein and Low density lipoprotein. Percent of body fat was assessed by applying the Deurenberg et al formula. High density lipoprotein and Low density lipoprotein were tested after taking 5 ml of blood samples by venous puncture method, by using Boehringer Mannheim Kit Method. The Analysis of Covariance (ANCOVA) was applied to find out any significant difference between the experimental groups and control group on selected criterion variables. The result of the study shows that the Bihar School of Yoga practice group and B.K.S. Iyengar Yoga practice group were decreased the Low density lipoprotein, percent of body fat, Flexibility, and increased the high density lipoprotein significantly. It was concluded from the results of the study that Bihar School of Yoga practice and B.K.S. Iyengar Yoga practice has bring positive changes in percent of body fat, high density lipoprotein and Low density lipoprotein as compare to the control group. Moreover it was also concluded that there was no significant difference was found between the experimental groups in all criterion variable.

Keywords: Yoga, women. Physiological and Physical Variables, Training

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INTRODUCTION

The inactive method of life had negative impact on human body and has been related to several serious health issues. Psychological science is that the scientific study of human mind and behavior. Psychological science worries with all aspects of behavior and with the thoughts, feeling and motivation underlying that behavior. It's each a thriving educational discipline and a significant skilled follow. Psychological science as a scientific discipline may be a science and psychologists study human behavior by observant, measurement and testing, then inbound at conclusions that are unmoving in sound scientific methodology. Applied psychologists facilitate individuals with all kinds of downside, operating with them to achieve modification for the higher. organic chemistry ways of assessment of dietary standing will offer knowledge which will mirror a person's recent dietary intake or long term intake or it's going to not mirror intake in the slightest degree. several variables will impact nutrient levels in body fluids. These embody activity level, stress, age, gender and therefore the standing of different nutrients. there's nobody definitive price that properly identifies actual deficiency state and it's not perpetually clear if a deficiency state is due to that nutrient. All our physiological processes are controlled by the system. One branch of the nervous known as the sympathetic system (SNS), is tormented by however we tend to breathe. speedy and shallow respiration depletes dioxide, that cause the sympathetic system to become activated. This leads to multiplied pulse rate and vital sign, that results in sweating palms and feet, high levels of tension (Fight syndrome) and more. Yoga respiration is a good technique that helps restore and maintain traditional dioxide levels

Recent scientific studies of the consequences of yoga and meditation on health validates its ability to enhance nearly each side of our performing— brain function, secretion perform, sleep, mood, balance, etc. a lot of active practices followed by restful ones cause deeper relaxation than restful practices alone, documented by analysis from Hindoo Vivekananda yoga analysis foundation close to Bangalore town and risk of Neuro-plasticity conveyance regarding changes within the hypo-pituitary-pancreatic axis. the advance within the super molecule levels when yoga may be due to multiplied internal organ enzyme and conjugated protein enzyme at cellular level, that affects the metabolism of conjugated protein and therefore increase uptake of denseness conjugated protein by fat tissues.

Jimenez et al, (2009) investigated the effect of yoga on physiological parameters i.e. cardiovascular fitness, anthropometric variables and biochemical and dietary parameters of women. Ray et al, (2001) indicated the improvement in performance at sub-maximal level of exercise and in anaerobic threshold in the yoga group. Shoulder, hip, trunk and neck flexibility improved in the yoga group. Pal, et al, (2011) indicated that the BMI, fat % , fat free mass, SBP, DBP, heart rate, total cholesterol, triglycerides, HDL and low density lipoprotein were changed significantly. Reduction of SBP, DBP, heart rate, body fat%, total cholesterol, triglycerides and LDL after regular yogic practices is beneficial for cardiac and hypertensive patients. Chen T.L. et.al (2009) showed that yoga exercise indeed improved BMI, flexibility, and muscular endurance. After 2 weeks of self-practice at home, yoga exercise continued to improve BMI, flexibility, muscular strength and cardio-

pulmonary fitness. Madanmohan and associates (2005) concluded that different types of pranayama produce different physiological responses in normal young volunteer Barshankar et al., (2003) indicated that yoga reduced the age related deterioration in cardiovascular functions. Selvanayaki (2002) concluded that systolic and diastolic blood pressure were not significantly improved by the influence of asana, pranayama and the combination of asana and pranyama. Murugesan, Govindarajulu and Bera (2000). revealed that both the treatment stimuli (i.e. yoga and drugs) were effective in controlling the variables of hypertension. Madan Mohan, et al., (2000) concluded that after yoga training a given level of exercise leads to a midler cardiovascular response, suggesting better exercise tolerance. Schell, Allolio and Schoake (1994) investigated that the heart rate was significantly different in yoga group having a significant decrease in heart rate during the yoga practice. Kosuri M and Sridhar GR. (2009) expressed that the yoga practice for 40 days resulted in reduced BMI, improved wellbeing, and reduced anxiety. Hafner-Holter, Kopp and Gunter (2009) showed significant improvement in social competence in both training groups; the gym-group show a reduction in summarization and body-related anxiety as well as an improvement in physical and emotional well-being.

METHODOLOGY

Selection of Subjects:

Thirty college women residing around Chinnasalem city, District-Salem (Tamilnadu) were hand-picked as subjects. The age of the respondents were ranged from eighteen to twenty three years. The chosen subjects were divided into 3 equal teams, every cluster consisted of 10 subjects, during which cluster - I (n = 15) underwent Bihar college of Yoga practice,

experimental cluster - II (n = 15) underwent B.K.S. Iyengar Yoga practice and cluster - III (n = 15) acted as control, that failed to participate in any special activities with the exception of their regular info activities. Totally different modes of yoga practices were conducted six days (Monday to Saturday) per week for 6 weeks.

Testing Procedure:

For the aim of assortment of information from the respondents were asked to report at early morning, someday previous and someday when experimental period, in abstinence condition. Five millimeter unit of blood was collected from every subject by blood vessel puncture methodology and therefore the blood collected was hold on in little bottles for pre and post-test for measuring the high and low density lipoprotein.

Criterion Variables:

The investigator consulted with the yoga specialists and selected the subsequent variables as criterion variables: 1. percent of body fat, 2. Flexibility, 3. high density lipo-protein and four -low density lipo-protein. Percentage of body fat was assessed by applying the Deurenberg et al[11] formula. The high density lipo-protein and low density lipo-protein were assessed by exploitation the Boehringer metropolis Kit methodology.

Statistical Analysis:

Analysis of variance (ANCOVA) was applied to seek out the numerous distinction if any, among the experimental teams and control cluster on hand-picked criterion variables severally. In all cases, .05 level of confidence was mounted to check the importance, that was thought of as applicable.

RESULTS AND DISCUSSION

The data collected on percent of body fat, Flexibility, high density lipoprotein and low density lipoprotein among experimental and control groups

were analyses and the results were depicted in Figure 1. presented in Table 1 and 2 and

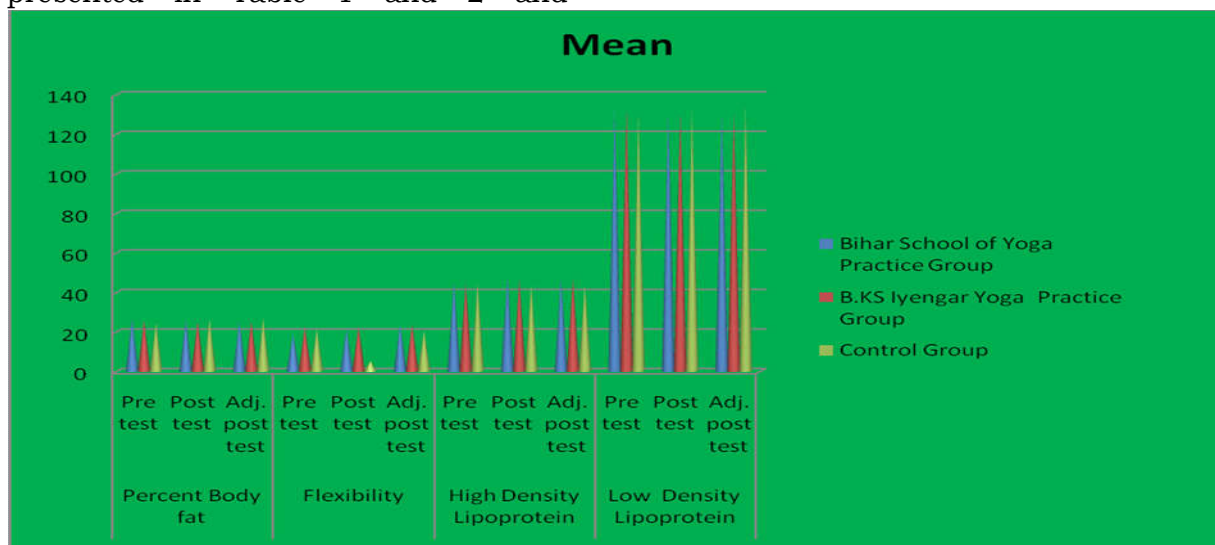


Figure-1: Illustration of Comparative analysis of selected physical and physiological variables

TABLE I
ANALYSIS OF COVARIANCE ON SELECTED CRITERION VARIABLES AMONG EXERCISE GROUPS AND CONTROL GROUP

Variables	Group Name	Bihar School of Yoga Practice Group	B.KS Iyengar Yoga Practice Group	Control Group	F-Ratio
Percent Body fat	Pre test Mean $\pm$ SD	26.57 $\pm$ 3.12	25.75 $\pm$ 2.414	24.5 $\pm$ 2.48	0.314
	Post test Mean $\pm$ SD	25.87 $\pm$ 2.94	25.24 $\pm$ 2.56	26.62 $\pm$ 2.47	1.128
	Adj. post test	25.16	25.327	26.774	65.69*
Flexibility	Pre test Mean $\pm$ SD	19.13 $\pm$ 4.12	22.67 $\pm$ 7.18	21.35 $\pm$ 5.23	1.978
	Post test Mean $\pm$ SD	21.48 $\pm$ 4.35	22.60 $\pm$ 5.20	5.12	2.41
	Adj. post test	23.69	23.78	20.67	33.87*
High Density Lipoprotein	Pre test Mean $\pm$ SD	45.07 $\pm$ 2.463	44.53 $\pm$ 3.021	44.87 $\pm$ 2.95	0.137
	Post test Mean $\pm$ SD	47.60 $\pm$ 2.772	46.80 $\pm$ 3.189	44.00 $\pm$ 2.80	6. 253*
	Adj. post test	47.357	47.088	43.956	77.42*
Low Density Lipoprotein	Pre test Mean $\pm$ SD	133.13 $\pm$ 4.84	133.73 $\pm$ 3.65	131.80 $\pm$ 4.44	0.780
	Post test Mean $\pm$ SD	131.13 $\pm$ 4.94	131.67 $\pm$ 3.83	132.67 $\pm$ 4.56	0.455
	Adj. post test	130.888	130.820	133.759	39.23*

*Significant at .05 level. F.05 (2, 42)=3.22, F.05 (2, 41)=3.21

% Body Fat:

It is observed from Table 1 that the pre-test means on percentage of body fat of the two experimental groups and control group were 26.57, 25.75 and 24.50 respectively. The obtained -F -ratio value 0.314 for the pre-test means was less than the required $F_{0.05}(2,42)=3.22$. This reveals that there is no significant difference among the three groups on body fat % before the commencement of the experimental training. It is inferred that the selection of the sample for the three groups was successful.

The post test means on body fat % of the two experimental groups and control group were 25.87, 25.24 and 26.62 respectively. The obtained F-value 1.128 for the post test data was less than the required $F_{0.05}(2,42)=3.22$. It discloses that there was no significant improvement among the experimental groups and control group on body fat % after the 6 week training.

The adjusted post test means on body fat % of the two experimental groups and control group were 25.16, 25.327 and 26.774 respectively. The obtained F-value of 65.69 for the adjusted post test data was greater than the required $F_{0.05}(2,41)=3.21$. It reveals that there was significant change on body fat % as a result of the experimental training.

Flexibility:

It is also observed from Table 1 that the pre-test means on flexibility of the two experimental groups and control group were 26.57, 25.75 and 24.50 respectively. The obtained -F -ratio value 0.314 for the pre-test means was less than the required $F_{0.05}(2,42)=3.22$. This reveals that there is no significant difference among the three groups on body fat % before the commencement of the experimental training. It is inferred that the selection of the sample for the three groups was successful.

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High Density Lipoprotein:

It is also observed from Table 1 that the pre-test means on high density of lipoprotein of the two experimental groups and control group were 26.57, 25.75 and 24.50 respectively. The obtained -F -ratio value 0.314 for the pre-test means was less than the required $F_{0.05}(2,42)=3.22$. This reveals that there is no significant difference among the three groups on body fat % before the commencement of the experimental training. It is inferred that the selection of the sample for the three groups was successful.

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experimental groups and control group were 25.16, 25.327 and 26.774 respectively. The obtained F-value of 65.69 for the adjusted post test data was greater than the required F.05 (2,41)=3.21. It reveals that there was significant change on body fat % as a result of the experimental training.

Low Density Lipoprotein:

It is also observed from Table 1 that the pre-test means on low density of lipoprotein of the two experimental groups and control group were 26.57, 25.75 and 24.50 respectively. The obtained -F -ratio value 0.314 for the pre-test means was less than the required F.05 (2,42)=3.22. This reveals that there is no significant difference among the three groups on body fat % before the commencement of the experimental training. It is inferred that the selection of the sample for the three groups was successful.

The post test means on low density of lipoprotein of the two experimental groups and control group were 25.87, 25.24 and 26.62 respectively. The obtained F- value 1.128 for the post test data was less than the required F.05 (2,42)=3.22. It discloses that there was no significant improvement among the experimental groups and control group on body fat % after the 6 week training.

The adjusted post test means on low density of lipoprotein of the two experimental groups and control group were 25.16, 25.327 and 26.774 respectively. The obtained F-value of 65.69 for the adjusted post test data was greater than the required F.05 (2,41)=3.21. It reveals that there was significant change on body fat % as a result of the experimental training.

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS OF BODY FAT %, FLEXIBILITY, HIGH AND LOW DENSITY LIPOPROTEIN OF COLLEGE LEVEL WOMEN IN EXPERIMENTAL GROUPS AND CONTROL GROUP

Adjusted Post – Test Mean on Percent of Body Fat				
Experimental Group-I	Experimental Group-II	Control Group	Mean Difference	Confidence Interval (C.I.)
25.16	-	26.77	1.61*	0.35
25.16	25.32	-	0.16	
-	25.32	26.77	1.45*	
Adjusted Post – Test Mean on Flexibility				
23.69		20.67	3.02*	0.35
23.69	23.78		0.09	
	23.78	20.67	3.11*	
Adjusted Post – Test Mean on High Density Lipoprotein				
47.36	47.09	-	0.27	0.74
47.36	-	43.96	3.40*	
-	47.09	43.96	3.13*	
Adjusted Post – Test Mean on Low density lipoprotein				
130.89	130.82	-	0.07	1.17
130.89	-	133.76	2.87*	
-	130.82	133.76	2.94*	

**Significant at .05 level

%Body Fat:

Table 2 shows that the Scheffé's Test of Post-hoc Comparison for mean differences of college level women between adjusted post-test mean on percent of body fat of experimental group-I - control group and between experimental group II-control group were found statistically significant, as the obtained mean differences of 1.61 and 1.45 respectively were higher than the C.I. of 0.35. The significant difference was not observed among college women between experimental group-I – experimental group-II, as the obtained paired mean differences of 0.16 was less than the confidence interval.

Flexibility:

The Scheffé's Test of Post-hoc Comparison for mean differences of college level women between adjusted post-test mean on flexibility of experimental group-I - control group and between experimental group II-control group were found statistically significant, as the obtained mean differences of 3.02 and 3.11 respectively were higher than the C.I. of 0.35. The significant difference was not observed among college women between experimental group-I – experimental group-II, as the obtained paired mean differences of 0.90 was less than the confidence interval.

High Density Lipoprotein:

The Scheffé's Test of Post-hoc Comparison for mean differences of college level women between adjusted post-test mean on high density lipoprotein of experimental group-I - control group and between experimental group II-control group were found statistically significant, as the obtained mean differences of 3.40 and 3.13 respectively were higher than the C.I. of 0.74. The significant difference was not observed among college women between experimental

group-I – control , as the obtained paired mean differences of 0.27 was less than the confidence interval

High Density Lipoprotein:

The Scheffé's Test of Post-hoc Comparison for mean differences of college level women between adjusted post-test mean on low density lipoprotein of experimental group-I - control group and between experimental group II-control group were found statistically significant, as the obtained mean differences of 2.87 and 2.94 respectively were higher than the C.I. of 1.17. The significant difference was not observed among college women between experimental group-I – control , as the obtained paired mean differences of 0.07 was less than the confidence interval.

CONCLUSIONS

The experimental groups such as, Bihar School of Yoga practice group and B.K.S. Iyengar Yoga practice group have achieved a significant improvement in high density lipoprotein and a significant reduction in percent of body fat, Flexibility and Low density lipoprotein when compared with the control group. It was also found that there was no significant difference was found between the Bihar School of Yoga practice group and B.K.S. Iyengar Yoga practice group on selected criterion variables

BIBLIOGRAPHY

- Balasubramanian, K., Kannadasan, S. C. and Kumar, Senthil.** "Effect of physical training and yogic practices, on selected physiological variables and motor ability components among college men students" 8 : 1 (2015)
- Chen, T.L., Mao HC., Li, C.H. et.al.** ' Effect of yoga exercise intervention of health related physical fitness school ages asthmatic Children, HU LI Za, ZHI 56 :2 (2009): 42-52.
- Devananda, Swami Vishnu** The Sivananda Companion to Yoga, New York: Fireside Book, Simon and Schuster, 2000.

Hafner-Holter, S., Kopp, M. and Günther, V. "Effects of fitness training and yoga on well-being stress, social competence and body image". Neuropsychiatr. 2009;23(4):244-248.

Iyengar, B.K.S. Yoga – The path of Holistic Health, Great Britain: Dorling Kindersley Limited, 2001

Jimenez, Arnulfo Ramos., Rosa, P Hernandez-Torres., Abraham Wall-Medrano., Maria, D.J., Munoz-Daw, Patricia., Torres-Duran, V. and Juarez-Oropeza, Marco A. "Cardiovascular and metabolic effects of intensive *Hatha Yoga* training in middle-aged and older women from northern Mexico", International Journal of Yoga, 2 :2 (2009): 49–54.

Kosuri, M. and Sridhar, G.R. "Yoga practice in diabetes improves physical and psychological outcomes". Metab Syndr Relat Disord. 7 :6 (2009):515-517.

Pal, A., Srivastava, N., Tiwari, S., Verma, N.S., Narain, V.S., Agrawal, G.G., Natu, S.M. and Kumar, K. "Effect of yogic practices on lipid profile and body fat composition in patients of coronary artery disease", Complementary therapies in medicine, 19 :3 (2011):122-7.

Murugesan R, Govindarajulu N, Bera T. K. "Effect of selected yogic practices on the management of hypertension". Indian J Physiol Pharmacol. 44 :2 (2000) :207-210.

Madanmohan, Udupa K., Bhavanani, A.B., Shathapathy, C.C. and Sahai, A. "Modulation of cardiovascular response to exercise by yoga training". Indian J Physiol Pharmacol 48 (2004): 461-465.

McCall, T. The Scientific Basis of Yoga Therapy. [Accessed Jun 16, 2012]. at http://www.yogajournal.com/for_teachers/2016

Natarajaseenivasan, K., Boopalan, M., Selvanayagi, K., Suresh, S.R. and Ratnam, S. "Leptospirosis among rice mill workers of Salem, South India". Jpn J Infect Dis. 55 :5 (2002) :170-173.

Ray, U.S., Mukhopadhyaya, S., Purkayastha, S.S., Asnani, V., Tomer, O.S., Prashad, R., Thakur, L. and Selvamurthy, W. "Effect of yogic exercises on physical and mental health of young fellowship course trainees", Indian Journal of Physiology & Pharmacology, 45 :1 (2001):37-53

Retrieved from <http://hinduism.about.com/bl-yoga-define.htm> on 24-04-2012.)

Schell, F.J., Allolio B. and Schonecke, O.W. International Journal of Psychosomatics : Official Publication of the International Psychosomatics Institute, 41:1-4 (1994):46-52]

A STUDY OF MENTAL TOUGHNESS OF NORTH ZONE INTERVARSITY BATSMEN

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[DOI No. : 08.2016-17642281](https://doi.org/10.21859/2016-17642281)

ABSTRACT

The present study investigated the mental toughness of north zone intervarsity batsmen. A sample of 100 male intervarsity batsmen aged between twenty two and twenty eight years self-reported mental toughness inventory prepared and developed by Goldberg (1995), was administered. The inventory/questionnaire consisted of sixty statements based on Handling Pressure (20 items), Concentration (17 items), Mental Rebounding (14 items) and Winning attitudes (09 items). Every statement had two potential choices i.e. true or false. Descriptive statistics were computed to analyse the data at 0.05 level of significance. The result show that the 15% batsmen have scores of 26-30 indicates strength in overall mental toughness. 40% batsmen have scores of 23-25 indicates average to moderate ability in mental toughness. 45% batsmen have scores of 22 or below mean that you just ought to begin putt longer into the mental training area. A low score within the concentration indicates that the low performance may be a results of inability to regulate the main target of attention before or throughout the competition. you would like to become a far better overall contestant, he can got to place it time and energy for active concentration exercises

Keywords: Mental toughness, Cricket, Inter-university, Batsmen, Male players

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INTRODUCTION

Researchers and practitioners in sport psychology, coaches, sports commentators, sports fans, and athletes acknowledge the importance of mental toughness in sport performance (Williams, 1988; Hodge, 1994; Tunney, 1987;). In the same issue, Loehr (1982 and 1986) emphasized that coaches and athletes felt that minimum of 50 percent of success is due to psychological factors, which reflect mental toughness. Gould, and Hodge also emphasized the same fact that coaches feel that mental toughness is important to achieve success in sport.

Coaches, athletes and sports scientific discipline consultants have systematically cited mental toughness collectively of the foremost vital psychological characteristics associated with outcomes and success in elite sport, though researchers have, till recently, devoted very little time to learning this idea. (Crusta, Lee 2007). Mental toughness is "Having the natural or developed psychological edge that permits you to: usually, cope higher than your opponents with the numerous demands (competition, training, lifestyle) that sport places on a performer; specifically, be additional consistent and higher than your opponents in remaining determined, focused, control under pressure and confident, (Jones, Connaughton, and Hanton, 2002).

Stephen J. Bulla et al. (2005) mental toughness may be a vital component in up to date international cricket. Twelve English cricketers known as being among the mentally toughest throughout the previous twenty years were interviewed. Analysis of the targeted interview transcripts known the vital role of the player's atmosphere in influencing 'Tough Character,' 'Tough Attitudes,' and 'Tough Thinking.' the worldwide themes are conferred in a very mental

toughness framework that has been wont to publicize the findings to the cricket coaching job and taking part in population in England. The different and complementary nature of the worldwide themes are wont to facilitate offer a structural appreciation of the requirement for consistent interaction between atmosphere, character, attitudes, and thinking so as that a entertainer will systematically be thought-about as mentally powerful in cricket. Implications of the findings of sport scientific discipline support inside English cricket are highlighted.

Gucciardia and Daniel et al. (2009) developed a psychometrically sound live of mental toughness in cricket, employing a multi-method analysis style. 2 qualitative studies during which current former cricketers' (N=16) perceptions of the key parts of mental toughness in cricket and therefore the suitability of an item pool to focus on those key parts (N=9) were assessed. we tend to then conducted 2 quantitative studies to look at each the within- and between-network properties of the Cricket Mental Toughness Inventory victimization corroborative correlational analysis and correlations. Support for the existence of a five-factor, 15-item model was unconcealed with 3 Independent samples of cricketers; 2 contained cricketers from many completely different countries (n = 285 and 285), whereas one contained Australian cricketers solely (n = 433). every of the 5 subscales (affective intelligence, basic cognitive process management, resilience, self-belief, and want to achieve) were completely related with dispositional flow, hardiness, and resilience and negatively related with contestant burnout. though requiring replication and extension, the results of this study offer preliminary support for the issue

structure, internal dependability, and construct validity of the CMTI.

Crusta, Lee & KayvonAzadib (2010) assessed the link between mental toughness and athletes' use the strategies of psychological performance. 67 male and 40 female athletes, who participated at university to national standard in a variety of sports. Participants completed the Mental Toughness Questionnaire -48 (Clough et al., 2002) to find out mental toughness, performance strategies of test (Thomas et al., 1999) and to find out the use of psychological strategies in practice and competition. Results of the statistical analyses discovered that self-talk, emotional management and relaxation techniques were considerably and completely associated with mental toughness in each observe and competition. Of the MTQ48 subscales, commitment was found to load most often against performance ways and so it's doable that the results of this study mirror extremely committed performers seeking performance improvement ways. according to theoretical predictions, athletes of county customary and higher than reported

considerably higher mental toughness than university athletes.

MATERIALS & METHODS

Subjects:

For the purpose of the study, one hundred batsmen randomly selected from North Zone Intervarsity Cricket Tournament (Men)-2010 held at CSJM University, Kanpur (UP) ranged 22-28 years of age.

Measure:

For the collection of data, mental toughness questionnaire prepared and developed by Goldberg (1995) was administered. The questionnaire comprised of 60 statements based on handling Pressure (20 questions), concentration (17 questions), mental rebounding (14 questions) and winning attitudes (09 questions). Every statement had two potential choices i.e. true or false.

RESULTS AND DISCUSSION

To investigate the level of mental toughness of north zone intervarsity batsmen, percentage was calculated and data pertaining to this, has been presented in Table 1 and depicted in Figure 1.

Figure 1

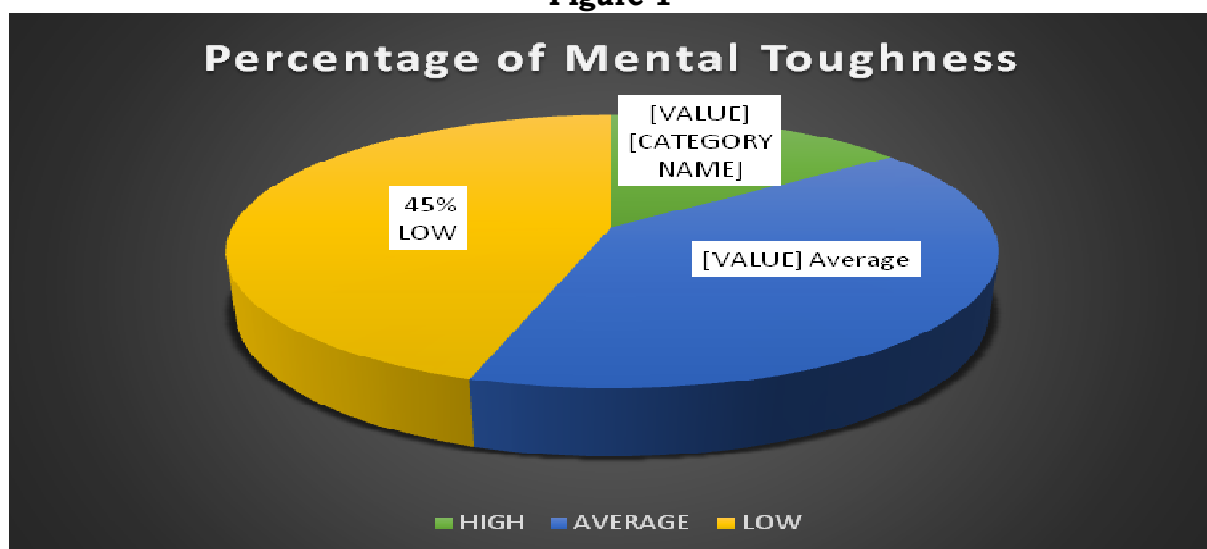


TABLE 1
SPORTS COMPETITIVE MENTAL TOUGHNESS OF NORTH ZONE INTERVARSITY
WICKET KEEPERS

Percentage of Players	Classifications	
	Score of Mental Toughness	Level of Mental Toughness
15%	22 or below	Strength in overall mental toughness
40%	23-25	Average to moderate skill in mental toughness
45%	26-30	To start putting more time into the mental training area

DISCUSSION

15% batsmen had scores of 26-30, indicated the strength in overall mental toughness. 40% batsmen had scores of 23-25, indicated average to moderate skill in mental toughness and 45% batsmen had scores of 22 or below mean that they had need to start putting more time into the mental training area. A low score in the concentration section indicated that some of your poor performance was the direct result of inability to control the focus of attention before/during competition. By putting some time and energy into practicing concentration exercises, they may become a better overall athlete.

CONCLUSION

Mental toughness was observed high in fifteen percent (15%) and average in forty percent (40%) of north zone intervarsity batsmen. Forty five (45%) batsmen were below mean, who have need to start putting more time into the mental training area.

BIBLIOGRAPHY

- Bulla, S. J., Shambrook, C.J., James, W. and Brooks, J. E.** "Towards an Understanding of Mental Toughness in Elite English Cricketers". *Journal of Applied Sport Psychology*. 17:3 (2005) :209-227.
- Crusta, Lee & Kayvon, Azadib.** "Mental toughness and athletes' use of psychological strategies". *European Journal of Sport Science*. 10 :1 (2010) :43-51.
- Crusta, Lee.** "Mental toughness in sport: A review". *International Journal of Sport and Exercise Psychology*. 5:3 (2007):270-290.

Gucciardi, D.F & Gordon, S. "Development and preliminary validation of the Cricket Mental Toughness Inventory (CMTI)". *Journal of Sports Sciences*, 27:12 (2009):1293-1310

Hodge, K. "Mental toughness in sport: Lessons for life. The pursuit of personal excellence". *Journal of Physical Education New Zealand*, 27 (1994) :12-16.

Jones, G., Hanton, S., & Connaughton, D. "What Is This Thing Called Mental Toughness? An Investigation of Elite Sport Performers". *Journal of Applied Sport Psychology*, 14 :3 (2002): 205-218.

Loehr, J. E. *Mental toughness training for sports: Achieving athletic excellence*. Lexington, MA: Stephen Greene Press, 1986.

Loehr, J.E. *Athletic excellence: Mental toughness training for sports*. Forum Publishing Company, 1982.

Tunney, J. "Thoughts on the line. Mental toughness: Biceps for the mind". *Soccer Journal*, 32 (1987) : 49-50.

Williams, R. M. "The U.S. open character test: Good strokes help. But the most individualistic of sports is ultimately a mental game". *Psychology Today*, 22 (1988) : 60-62.

INVESTIGATION OF COMPETITIVE BEHAVIOUR OF MALE BASKETBALL PLAYERS

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ABSTRACT

Competitive behavior is an important dimension or trait of personality of a sportsperson and it directly or indirectly affect the overall sports performance of a sportsperson. The present study was conducted on 72 Basketball players belonging to S. T. C established in India by S.A..I. New Delhi with the collaboration of State Sports Department who were selected from different Zones of the country with an idea to promote Basketball in India. Competitive Behaviour Scale by Yadav (1995) was implemented with the objective of measuring competitive behaviour among male basketball players boys of different zone of SAI. To assess the competitive behaviour and competitive performance of male Basketball players of six zone teams, means and standard deviations, and analysis of variance (ANOVA) were computed. The results of statistical analysis of collected data revealed that the male basketball players of central zone were found to have higher competitive behaviour than their counter parts. Most of the male basketball player of six different zone exhibited very high competitive behaviour. Male basketball players of six zone had different competitive behaviour. Competitive behaviour was found to be better predictor of sport performance in the game of basketball.

Keywords: Male players, Basketball, , Zones, competitive behaviour

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INTRODUCTION

Competition is a very soul of sports, sports competition is not only sustains interest but also provide thrill and joy of life. It satisfies the urge of a player for social recognition and dominance. It provides opportunities to athletes to know their own position in relation to other athletes. Competition provides feedback to athletes and coaches about their potentialities and short comings. Hence competitions serve as a means to improve the performance.

The stimulating effect of competition has been studied through a number of psychology investigations in the condition of actual sports activity. The stimulating factor of competition must be considered and give weight age in the process of the training competition in sports as always connected with the aspiration of individual for activity higher goals. In high class competition one always plans to create a new record become the champion in a particular sports.

Competition in sports is becoming more intense day by day. Individuals and nations are striving hard to gain supremacy over others. Modern competitive sports are an extremely complex behavioral phenomenon. In tough competitions, some top athletes who are potentially strong in terms of technique or physical efficiency often fail to achieve their best form simply because they lack required psychological attributes to excel in competitive endeavours. Performance in sports is not only related to physical strength and skill, rather psychological states and traits are considered indispensable in delivering peak performance. Psychological strength seems to facilitate the players in converting their physical strength and sport skills into optimal performance.

There is growing realization that mind has the power to influence the physical functioning of human body. Performance in top competitive sports goes beyond mere physical efforts and skills which have their own natural limits that can not be pushed beyond certain limits. However, it is difficult even to reach up to these limits without training the mind.

Competitive behavior is an important dimension or trait of personality of a sportsperson and it directly or indirectly affects the overall sports performance of a sportsperson.

Competitiveness have been researched on in a variety of samples from the United States (Houston, Farese, & LaDu, 1992; Gill & Dziewaltowski, 1988; Smither & Houston, 1992; Houston, Carter, & Smither, 1997) but there are unfortunately very few samples from cultures outside of the United States.

Furnham, Kirkcaldy, and Lynn (1994) found that Asian and Eastern countries, e.g., China, India, Israel, and Japan scored higher on competitiveness than countries from the Americas, e.g., Argentina, Brazil, Colombia, and the United States.

Competitive behaviours are increasingly affected by the culture of the individual or society, and not necessarily only by their nationality, profession and gender (Hewstone & Ward, 1985).

Similarly McKee and Leader (1995) also indicate that societal and personality factors may also be important determinants of cooperative and competitive behavior

Competitive individuals are expected to strive harder, earlier or more effectively than others, and there is evidence suggesting that higher levels of competitiveness relate to higher levels of performance (Hinsz & Jundt, 2005). One of the earliest research on

competitive behaviour dates back to the pioneering work of Triplett (1897) who propagated concepts such as competitive instincts, mental attitudes and the desire to win. Deutsch (1949) emphasised that competitive behaviour is dependent on the importance of situational or external factors and how rewards are considerably valued by the competitor.

Competitive behavior is an important dimension or trait of personality of a sportsperson and it directly or indirectly affect the overall sports performance of a sportsperson. Therefore; the present study was conducted on competitive behavior among Male Basketball Players of six Zones residing in Sport Authority of India hostels.

METHODOLOGY

Selection of Subjects:

The present study was conducted on 72 Basketball players belonging to S. T. C established in India by S.A.I. New Delhi with the collaboration of State Sports Department who were selected from different Zones of the country with an idea to promote Basketball in India. They were undergoing a well planned training programme in different zones of India allocated by S.A.I. New Delhi. i.e. Central, North, A.B.S.C, South, East and west zones. The age of the subjects ranged between 14 to 21 years. All of them were either school going students or college students and therefore, no difficulty was encountered in administering to the psychological test.

Instrument:

Competitive Behaviour Scale by Yadav (1995) was developed with the objective of measuring competitive

behaviour among boys and girls in different field of sports. The scale contains 60 statements. Each statement has three alternatives- "Yes" "Indefinite" and "No". 30 statements are positively worded leading to indicate competitive behaviour, while other 30 statements shows negative behaviour towards competition. For positive statement-Yes=2, Indefinite=1 and No=0, and for negative statements-No=2, Indefinite=1 and Yes=0. Scoring was done by provided scoring sheet. Reliability and validity of the scale were .75 and .62 respectively.

Data Collection:

With the permission of organizing secretary of the SAI All India Inter-regional Basketball tournament held at STC Rajnandgaon. The subjects and coaches were contacted at the site of championships personally and their sincere cooperation was solicited. Respondents were called to a common place one hour prior to the match for testing. Necessary instructions were given to the subjects before the administration of this test. As the group of players completed the provided questionnaire, the completed questionnaires were collected from the Basketball players and it was verified that no question was left without being answered.

RESULTS AND DISCUSSION

To assess the competitive behaviour and competitive performance of male Basketball players of six zone teams, means and standard deviations, t-ratios, analysis of variance (ANOVA) and Pearson moment correlation coefficient (r) were computed and data pertaining to this, has been presented in table 1 to 3.

TABLE 1
DESCRIPTIVE STATISTICS COMPETITIVE BEHAVIOUR OF MALE BASKETBALL PLAYERS OF DIFFERENT ZONES

S. No.	Zone	N	Age		Competitive Behaviour	
			Mean	SD	Mean	SD
1.	Central Zone	12	16.83	1.11	89.58	13.42
2.	North Zone	12	17.33	1.15	77.58	5.39
3.	ABSC	12	17.25	1.42	84.00	10.11
4.	South Zone	12	18.25	1.48	93.17	12.69
5.	East Zone	12	17.58	1.50	82.92	6.05
6.	West Zone	12	17.33	1.66	89.25	9.58

The mean scores on competitive behaviour of male Basketball players at different zones of India have been depicted in figure 1.

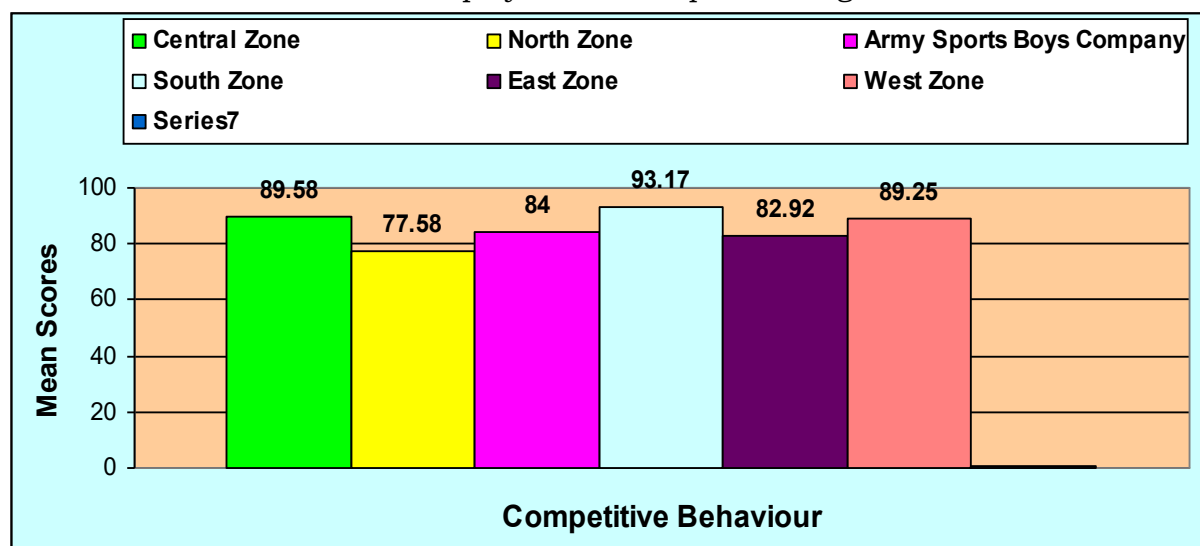


Fig.1: Mean Scores of Competitive Behaviour of Male Basketball Players of Different Zones of Sports Authority of India.

TABLE 2
ANALYSIS OF VARIANCE OF COMPETITIVE BEHAVIOUR OF MALE BASKETBALL PLAYERS OF DIFFERENT ZONES

Source of Variance	df	Sum of Squares	Mean Square	F- Value
Between Groups	5	1908.83	381.76	3.81*
Within Groups	66	6608.67	100.13	

Significant at .05 level,
F.05 (5, 66) = 2.35.

From table 2, It is clearly evident that male Basketball players of different zones of Sports Authority of India differed significantly in their competitive behaviour scores, as the obtained F-value of 3.81 was higher than the required F.05 (5, 66) = 2.35.

As the F-ratio on competitive behaviour of male basketball players was found to be significant, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of different zone basketball

players and data pertaining to this, has been presented in table 3.

TABLE 3
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR
MALE BASKETBALL PLAYERS OF DIFFERENT ZONES OF SPORT
AUTHORITY OF INDIA ON COMPETITIVE BEHAVIOUR

Central	North	ABSC	SOUTH	EAST	WEST	MD	C.I.
89.58	77.58	-	-	-	-	12.00*	6.96
89.58	-	84.00	-	-	-	5.58	
89.58	-	-	93.17	-	-	3.59	
89.58	-	-	-	82.92	-	6.66	
89.58	-	-	-	-	89.25	0.33	
-	77.58	84.00	-	-	-	6.42	
-	77.58	-	93.17	-	-	15.59*	
-	77.58	-	-	82.92	-	5.34	
-	77.58	-	-	-	89.25	11.67*	
-	-	84.00	93.17	-	-	9.17*	
-	-	84.00	-	82.92	-	1.08	
-	-	84.00	-	-	89.25	5.25	
-	-	-	93.17	82.92	-	1.25	
-	-	-	93.17	-	89.25	3.92	
-	-	-	-	82.92	89.25	6.33	

*Significant at .05 level

The data in table 4 clearly reveals that mean differences between central zone- north zone; between north zone – south zone followed by west zone; and between ABSC-south zone male basketball players were found statistically significant, as the confidence interval of 6.96 was less than the mean differences of 12.00, 15.59, 11.67 and 9.17 respectively. The mean differences between central zone-ABSC followed by south, east and west zone; between north zone- ABSC

DISCUSSION

Findings of descriptive data of male Basketball players of six zone allocated by Sports Authority of India on competitive behaviour indicated that the higher mean score of competitive behaviour was found among south zone and least mean score in north zone male basketball players. Out of total participants from six zones, majority of the male basketball players had expressed very

followed by east zone; between ABSC-east zone followed by west zone ; between south zone-east zone followed by west zone and between east zone-west zone male basketball players were found statistically insignificant in their competitive behaviour, as the confidence interval of 9.69 was high than the mean differences of 5.59, 3.38, 6.66, 0.33, 6.42, 5.34, 1.80, 5.25, 1.25, 3.92 and 6.33.

high competitive behaviour. Very few male basketball players of six zones showed high and moderate competitive behaviour.

The results of one way analysis of variance (ANOVA) with male Basketball players belong to six zones allocated by S.A.I. indicated significant difference in their competitive behaviour. This may be attribute to the dissimilarity in competition experiences,

competitiveness, personality attributes, cooperative attitudes, competition anxiety and level of participation. Further application of Scheffe's Test of Post-hoc comparison indicated that male basketball players of south zone had greater in amount of competitive behaviour followed by central zone, west zone, south zone, east zone and north zone.

The mean differences between central zone-north zone between north zone – south zone; followed by west zone; and between ABSC-south zone male basketball players were found statistically significant. The mean differences between central zone-ABSC followed by south, east and west zone; between north zone- ABSC followed by east zone; between ABSC- east zone followed by west zone; between south zone-east zone followed by west zone

BIBLIOGRAPHY

- Deutsch M.** "A theory of co-operation and competition". Human Relations, 2 (1949):129–152.
- Furnham, A., Kirkcaldy, B. D. and Lynn, R.,** "National attitudes, competitive, money and work : First, Second and Third World Differences". Human Relations, 47:1 (1994) :119-132.
- Gill, D.L, & Dzewaltowski, D.A.** "Competitive orientation among intercollegiate athletes: is winning the only thing"? The Sports Psychologist, 2 (1988) : 212-221.
- Houston, J.M., Farese, D.M., & LaDu, T.** "Assessing competitiveness: a validation study of the Competitiveness Index". Personality and Individual Differences, 13 (1992) : 1153-1156.
- Houston, J.M., Harris, P.B., Moore, R., Brummett, R.A., & Kametani, H.** "Competitiveness in three cultures: comparing Chinese, Japanese and American undergraduates". Psychological Reports, 97 (2005) : 205-212.
- Hewstone, M. & Ward, C.** "Ethnocentrism and causal attribution in Southeast Asia". Journal of Personality and Social Psychology, 48 (1985): 614-623.
- Mckee, J. P. & Leader, F. B.** "Relationship of socioeconomic status and aggression to the competitive behavior of preschool children". Child Development, 26(1995): 135-142.

and between east zone-west zone male basketball players were found statistically insignificant in their competitive behaviour.

CONCLUSIONS

- 1, Male Basketball players of central zone were found to have higher competitive behaviour than their counter parts.
2. Most of the male basketball player of six different zone exhibited very high competitive behaviour
3. Male Basketball players of six zone had different competitive behaviour.
4. Competitive behaviour was found to be better predictor of sport performance in the game of basketball.

Smither, R.D., & Houston, J.M. "The nature of competitiveness:

construction and validation of the Competitiveness Index". Educational and Psycho-logical Measurement, 52 (1992) : 407-418.

Hinsz, V.B. & Jundt, D.K. "Exploring individual differences in goalsetting situation using the Motivational Trait Questionnaire". Journal of Applied Social Psychology, 35 (2005): 551-571.

Triplett, N. "The dynamogenic factors in pace making and competition". American Journal of Psychology, 9 (1987) :507-533.

Yadav, R.K. Competitive Behaviour Scale, India: Arohi Manovigyan Kendra, Jabalpur (M.P.), 1995

RELATIONSHIP AMONG ANXIETY, SELF-CONCEPT AND SELF-CONFIDENCE OF MALE AND FEMALE FOOTBALL PLAYERS

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The purpose of the study was to establish the relationship among anxiety, self-concept and self-confidence of male and female football players. The present study was carried-out on self concept, self confidence, state anxiety and trait anxiety of sixty male and female football players from selected higher secondary schools of Bilaspur Division. Agnihotri's Self-Confidence Inventory Test (1987) consisted of 55 questions, Self-concept inventory developed and prepared by Sariswat (1984) consisted of six dimensions and a test of state- trait anxiety developed and prepared by Spielberger, Gorsuch and Lushana (1970) to measure a person's level of anxiety in specific situation for the purpose of data collection from all the male and female football players were implemented. To assess the selected psychological variables of male and female football players of higher secondary schools of Bilaspur division, means, standard deviations, and Pearson Moment Coefficient Correlation were computed. Results of the present investigation revealed that the positive correlations exhibited by football players among selected psychological variables i.e. self-concept, self confidence, state and trait anxiety. Male football players had greater amount of self concept, state anxiety and trait anxiety compared to female football players of higher secondary schools. But they had lower self-confidence than female counter parts. It is recommended that Indian coaches may modify their coaching program according to these selected psychological variables.

Keywords: self-concept, self-confidence, anxiety, football players

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INTRODUCTION

Human life is a complex of physical, intellectual emotional and social development patterns, sports and physical activities are integral parts of these patterns. People complete 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 reinforcements attractive to them and gain certain of self evaluation (Sinha, 1986).

Spielberger and his colleagues drew attention to the distinction between State Anxiety and Trait Anxiety. State Anxiety is considered to be a changing emotional State, which is characterized by feelings of tension and apprehension and increased activity in the autonomous nervous system. On the other hand Trait Anxiety is considered to be a personality trait - a relatively stable tendency of disposition to perceive a wide variety of objectivity non-dangerous situations as threatening. (Spielberger , 1966, Spielberger et. al.1970). Wheeler (1965) found a significant, inverse relationship between anxiety and reported views of self. That is individual with higher anxiety reported less - favorable views of themselves.

Confidence is an important antecedent to performance. It tends to act as a self-fulfilling prophecy. If you believe in your ability to perform well or in the probability that you will, you probably will fail short of your goal; where as if you think you can do well, you are more likely to come through, but there is nothing magical about the effect of confidence nor its acquisition (Bell, 1983).

Self-confidence in sport competition is the belief that one has the ability to successfully complete

an athletic event like arousal, it is experienced along a continuum. Confidence is essential for choosing a direction in life and tactical decision making in sport and in life. It can be the difference between seizing the sporting opportunity or allowing the moment to pass by (Weinberg & Gould, 2007). Low levels of self-confidence can be caused by lack of practice, poor self-belief or faulty thought patterns. It can result in a self-fulfilling prophecy, where failure expectancy results in failure (Goldstein, 1994).

Self-concept is learned by an individual inference from his unique experiences. The individual perceptions of feeling of others towards him strongly influence his self image. In turn, self-concept may prove the most powerful motivation for specific behaviour. Self-Concept is the totality of attitudes, judgments and values of an individuals relating to this, abilities and qualities, 'self-concept' embraces awareness of these variables and evaluation.

The purpose of the study was to establish the relationship among anxiety, self-concept and self-confidence of male and female football players. It was also hypothesized that There would be significant correlation among football players as a whole in selected psychological variables

METHODOLOGY

Selection of Subjects:

The present study was carried-out on sixty male and female football players from higher secondary schools of Bilaspur Division. Sample consisted of thirty five male and twenty five female football players ,were selected randomly for this study.

Selection of Variables:

The following psychological variables were selected for the purpose of the present investigation:

1. Self concept, 2. Self Confidence, 3. State anxiety, 4. Trait anxiety.

Measures:

Agnihotri's Self-Confidence Inventory Test (1987) consisted of 55 questions, Self-concept inventory developed and prepared by Sarswat (1984) consisted of six dimensions and a test of state- trait anxiety developed and prepared by Spielberger, Gorsuch and Lushana (1970) to measure a person's level of anxiety in specific situation for the purpose of data collection from all the male and female football players were implemented. The

detail of instruments has been described as below:

RESULTS AND DISCUSSION

To assess the selected psychological variables of male and female football players of higher secondary schools of Bilaspur division, means, standard deviations, and Pearson Moment Coefficient Correlation were computed and data pertaining to this, has been presented in Table 1 & 2.

TABLE 1
DESCRIPTIVE STATISTICS OF SELF-CONCEPT, SELF-CONFIDENCE AND STATE-TRAIT ANXIETY OF MALE AND FEMALE FOOTBALL PLAYERS OF HIGHER SECONDARY SCHOOLS

S.NO.	Variables	Sex	Number	Mean	Standard Deviation
1.	Self-Concept	Male	35	169.46	17.89
		Female	25	159.88	17.59
2.	Self Confidence	Male	35	28.49	3.91
		Female	25	28.92	3.01
3.	State Anxiety	Male	35	43.09	2.04
		Female	25	41.00	3.46
4.	Trait Anxiety	Male	35	46.00	2.71
		Female	25	43.44	4.49

The mean scores on self-concept, self confidence, state anxiety and trait anxiety of male and female football players of higher secondary schools have been depicted in figure 1 to 4.

FIGURE -1

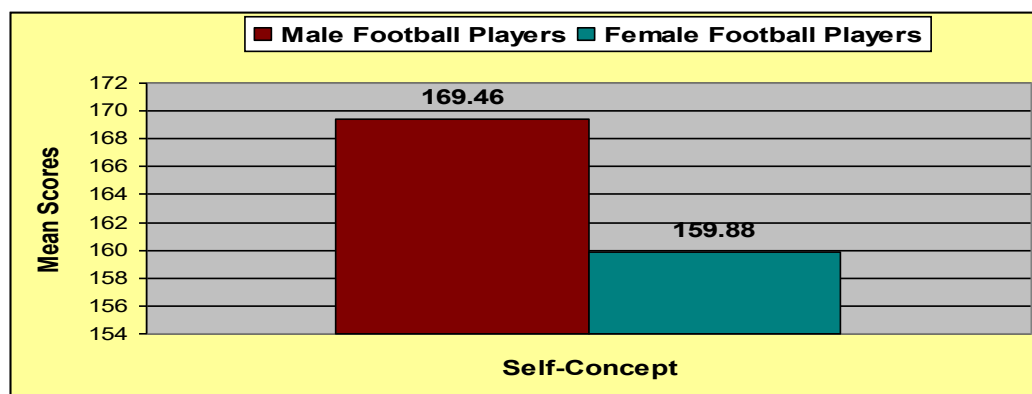


FIGURE -2

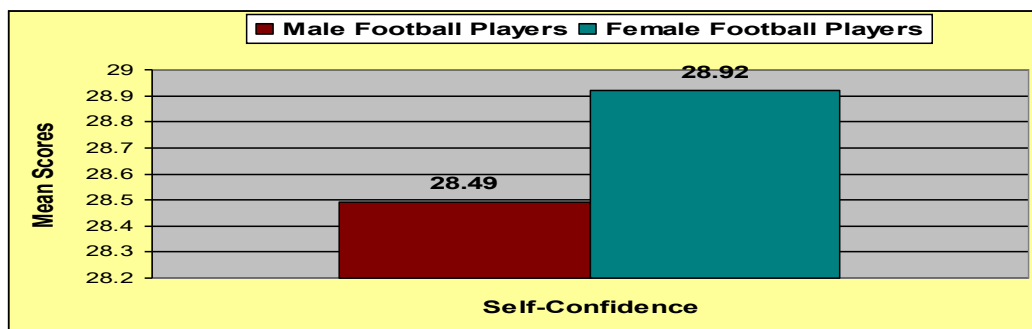


FIGURE -3

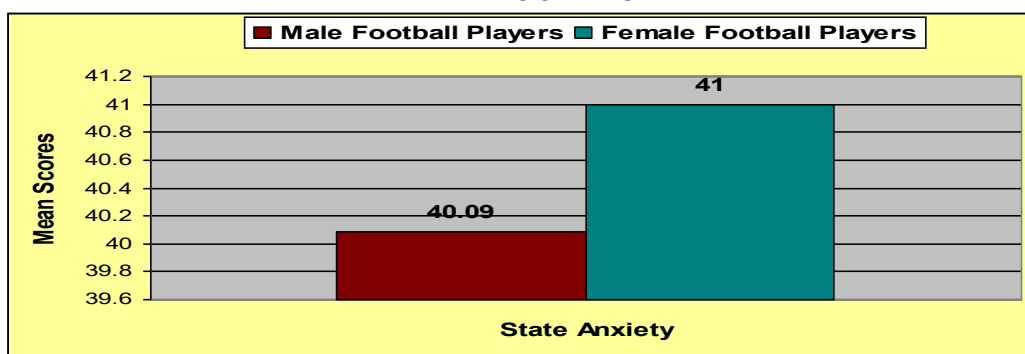


FIGURE -4

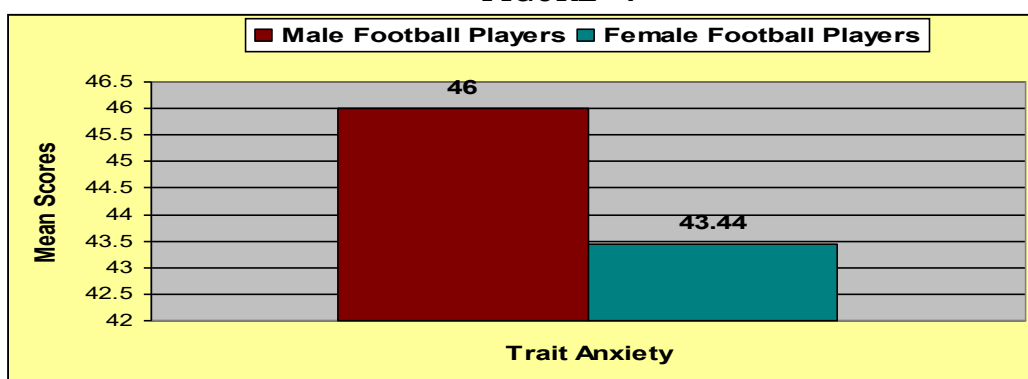


TABLE 2
INTER-COORELATIONS BETWEEN MEAN SCORES OF SELF-CONCEPT, SELF-CONFIDENCE, STATE AND TRAIT ANXIETY OF FOOTBALL PLAYERS OF HIGHER SECONDARY SCHOOLS

	Self-concept	Self-confidence	State Anxiety	Trait Anxiety
Self-Concept	1	.279*	.258*	.259*
Self-confidence		1	.064	.312*
State anxiety			1	.271*
Trait anxiety				1

*significant at .05 level

r.05(58)=.250

It is clear evident from Table 2 that statistically significant correlations

were found between self-concept and self-confidence followed by state anxiety

and trait anxiety; between self-confidence and trait anxiety and between state anxiety and trait anxiety among football players of higher secondary schools, as the obtained r-values of 2.79, .258, .259, .312 and .217 was higher than required $r_{.05(58)}=.250$. But they did not have significant correlation between self-confidence and state anxiety, as the obtained r-value of .064 is lesser than the required value to be significant.

DISCUSSION

Descriptive analysis of data on selected psychological variables for male and female football players revealed that male football players had greater amount of self concept, state anxiety and trait anxiety compared to female football players of higher secondary schools. But they had lower self-confidence than their counter parts.

To establish the relationship among selected psychological variables for football players as a whole, Pearson Moment Coefficient Correlations resulted significant positive correlations between self-concept and self-confidence (.279) followed by state anxiety (.258) and trait anxiety (.259); between self-confidence) and trait anxiety (.312) and between state anxiety and trait anxiety (.271) among football players of higher secondary schools. But insignificant positive correlation existed among football players between self-confidence and state anxiety (.064).

There would be significant correlation among football players as a whole in selected psychological variables is partially accepted, as the football players as a whole had significant correlations differences between mean scores of self-concept, state anxiety and trait anxiety. But they had insignificant correlation between

self-confidence and state anxiety.

CONCLUSIONS

1. Positive correlations exhibited by football players among selected psychological variables i.e. self-concept, self confidence, state and trait anxiety.
2. Male football players had greater amount of self concept, state anxiety and trait anxiety compared to female football players of higher secondary schools. But they had lower self-confidence than female counter parts

BIBLIOGRAPHY

- Agnihotry, Rekha** Manual for Agnihori's Self Confidence Inventory, (ASCI), Agra : Psychological Cooperation , 1987.
- Bell, Keith F.** Championship Thinking/The Athletes Guide to Winning Performance in All Sports , London; Prentice Hall Inc., 1983.
- Goldstein, E.B.** Psychology. Pacific Grove, California: Brooks/Cole Publishing Company, 1994.
- Speilberger, CD. R.L. Gorsuch and R.E. Lushane.** The State- trait Anxiety Inventory (Test Manual) Palo Alto, California: Consulting Psychology Press, 1970.
- Sarswat, R. K.** Manual of self- concept Questionnaire. Agra: National Psychological Corporation, 1999.
- Sinha, A. K. P.** Psychological Dimensions of Sports : Psychological Analysis of Sports Performance, Gwalior: L.N.C.P.E. 1986.
- Speilberger, CD.** Theory and Research on Anxiety In CD Speilberger (Edition)Anxiety and Behaviuor New York: Academic Press, 1966.
- Wheeler, E.E.** "Anxiety, Mental Ability and Reported Views of Self." The School Counsellor (October 1965):33-35.
- Weinberg, R.S. & Gould, D.** Foundations of sport and exercise psychology(4thed). Champaign, IL: Human Kinetics, 2007.

INVESTIGATION OF PSYCHOLOGICAL SKILLS AMONG MALE PLAYERS OF INDIVIDUAL, TEAM AND COMBAT GAMES

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ABSTRACT

Psychological skills are important determinants of sport performance, and considerable emphasis has been directed at identifying relevant skill and instructing sport consultant, coaches, and athletes in how to teach, learn, and apply them. The purpose of the study was to compare and investigate the psychological skills among male players belong to individual, team and combat games. The sample consisted of seventy five ((Individual game =25 , Team game =25 and combat game =25), male players, who volunteer to participate in this study. were selected to serve as subjects for this study. M $\pm$ SD of age of male players was 19.56 $\pm$ 3.35 years. The ACSI-28 -Athlete Coping Scale Inventory-28 (Smith et al. 1995) was used to measure the psychological characteristics of male players of different type of games. To assess the psychological characteristics on seven factors for individual, team and combat game's players, means and standard deviations and F-ratio were computed. The results of the study revealed that Male players of three different type of games exhibited different psychological ability for concentration and pressure. and similarity in adversity, coach-ability, confidence, goal setting and worry factors of psychological characteristics. Male players of combat game had also greater concentration ability and pressure ability than their counter parts.

Keywords: Male players, Individual, Team and combat games, psychological characteristics

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INTRODUCTION

Psychological skills refer to specific behavior needed and consciously desired by the individual in order to function in an effective and satisfying manner, over an extended period of time, in a broad array of positive, negative and neutral inter-personal contacts. Various psychological characteristics like as self-confidence, will to win, concentration, persistence, and competitiveness were found to have great importance for athletic performance. The successful and non-successful athletes were observed to differ significantly on several instruments measuring psychological characteristics, for example self-confidence and competitiveness (Jacques & Van, 1996). Psychosocial factor like as attention, which was given to the mental qualities and preparation necessary to become an elite track and field athlete and to succeed at the highest competitive levels (Vernacchia et al., 2000). Mental skills such as goal-setting, thought control strategies, arousal management techniques, well-developed competition plans, well-developed competition strategies, and pre-competition readiness plans adopted by athletes were achieving their peak performance (Krane and Williams, 2006). Peaking under pressure and 'coach-ability' appeared to be strong predictor variables for earned run average (ERA), concentration for number of errors committed (ERR, and coach-ability for batting average (BA) of collegiate baseball players (Kimbrough, Louisa and Balkin, 2007). The confidence and achievement motivation and Peaking under Pressure were significant predictors and may be particularly robust correlates of athletic performance (Christiansen, 2000). Psychological skill demands differ among players in different playing positions, nor the positive correlation between psychological skills and team success (Jooste Barend, & Linda, 2014).

Male athletes of different team games and levels as whole had similarity on seven dimensions of psychological characteristics. Inter-university and All India level male athletes expressed significance difference on goal setting and mental Preparation. But the basketball players apparently are not free from worry about disappointing a coach or parent and teammates (Sharma & Nigam, 2011). The goal shooters showed the lowest psychological skill levels than other positional group of football palyers (Heinrich & Maryke, 2011). Male basketball players of different levels had significant differences on Specific Psychological Skills except that there was no significant difference between juniors and youth national boys basketball players on coping with adversity and peaking under pressure (Yadav, Shukla and Yadav, 2012). The free diving sport has positive effects on both situational and stable psychological characteristics i.e. state anxiety, stress level, internal locus of control, self confident and coping style (Alkan & Akıs, 2013). Male judokas had higher confidence and achievement motivation, peaking under pressure, coping with adversity, freedom from worry and coach ability. In contrast, female judokas showed better on peaking under pressure, concentration, and goal setting/mental preparation. Male medalist judokas exhibited very high scores on coach-ability which reflected their ability to carry out coaching instructions during the game efficiently without become upset (Yadav, 2014). According to Shrivastava (2014), Indian Judo players at International, National and Inter-university levels, as whole, had similar psychological characteristics i. e. Adversity, coach-ability, concentration, confidence and goal setting. The purpose of the study was to compare and investigate the psychological skills

among male players belong to individual, team and combat games.

METHODOLOGY

Selection of Subjects:

The sample consisted of one hundred and fifty (Male=75, Female=75) players. In which, fifty players from Individual game (Males=25 and Females = 25), fifty from team game (Males=25 and Females = 25), and fifty from combat game, who volunteer to participate in this study. were selected to serve as subjects for this study. All the selected male and female players from different category of sports were taken part at inter-university level competition in their respective games. The mean and SD of age in case of male and female for total sample was 19.56 ± 3.35 and 23.45 ± 3.02 years.

Description of Measure:

The ACSI-28 -Athlete Coping Scale Inventory-28 (Smith et al. 1995) was used to measure the psychological characteristics of athletes on seven subscales; coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry,

confidence and achievement motivation, and coach-ability. The ACSI-28 has demonstrated test-retest reliability (.47 to .87) and internal consistency for the subscales were accepted (from .64 to .81).

Administration of Measure:

For collection of data, the subjects were contacted personally at the site of their play ground and their sincere cooperation may solicited. Respondents will be called to a common place, when they were busy and have enough time to spare for testing. Necessary instructions were provided to the subject before the administration of each test, Confidentiality of the responses was guaranteed so that the subjects may not camouflage their real feelings.

RESULTS AND DISCUSSION

To assess the psychological characteristics on seven factors for individual, team and combat game's players, means and standard deviations and F-ratio were computed and data pertaining to this, has been presented in Table 1 to 3.

TABLE 1
DESCRIPTIVE STATISTICS OF SEVEN DIMENSIONS OF PSYCHOLOGICAL CHARACTERISTICS OF MALE AND FEMALE JUDO PLAYERS AT DIFFERENT LEVELS OF THEIR PARTICIPATION

Psychological Characteristics		Individual Game (N=25)	Team Game (N=25)	Combat Game (N=25)
Coping with adversity	M	7.20	7.56	7.91
	SD	1.87	2.52	2.64
Coach-ability	M	7.44	7.12	7.00
	SD	1.80	2.22	2.38
Concentration	M	6.40	6.20	8.44
	SD	1.84	2.48	2.56
Confidence and achievement motivation	M	7.88	8.40	8.96
	SD	2.15	2.67	2.56
Goal setting and mental preparation	M	7.48	8.24	8.32
	SD	1.50	2.50	2.59
Peaking under pressure	M	6.92	6.40	8.52
	SD	2.53	2.29	2.52
Freedom from worry	M	4.88	5.72	4.40
	SD	2.22	2.46	2.63

The mean scores of seven dimensions of psychological characteristics of male and female player of individual, team and combat games have been presented in Table 1.

TABLE 2
UNIVARIATE ANALYSIS OF VARIANCE ON PSYCHOLOGICAL CHARACTERISTICS OF MALE PLAYERS BELONG TO DIFFERENT TYPE OF GAMES

S. NO.	Psychological Characteristics	Source of Variance	df	Sum of Squares	Mean Square	F-value
1.	Coping with adversity	Between Groups Within Groups	2 72	8.48 404.00	3.24 5.61	0.57
2.	Coach-ability	Between Groups Within Groups	2 72	2.59 332.80	1.29 4.62	0.28
3.	Concentration	Between Groups Within Groups	2 72	76.83 330.16	38.41 4.58	8.37*
4.	Confidence and achievement motivation	Between Groups Within Groups	2 72	14.58 439.60	7.29 6.10	1.19
5.	Goal setting and mental preparation	Between Groups Within Groups	2 72	10.75 366.24	5.37 5.09	1.06
6.	Peaking under pressure	Between Groups Within Groups	2 72	61.04 432.08	30.52 8.00	5.09*
7.	Freedom from worry	Between Groups Within Groups	2 72	22.32 429.68	11.16 5.96	1.87

Insignificant at .05 level

$F_{.05} (2, 72) = 3.11$

It is clearly evident from Table-2, that statistically significant differences were found among male players belong to different type of games in their concentration and peaking under pressure factors of psychological skills, as the obtained F-value of 8.37 and 5.09 were higher than the required value of $F_{.05} (2, 72) = 3.11$. But they did not differ significantly in their coping with adversity, coach-ability, confidence and achievement motivation, and freedom from worry factors of psychological skills, as the obtained F-

values of 0.57, 0.29, 1.19, 1.06 and 1.87 respectively were lesser than the required value of $F_{.05} (2, 72) = 3.11$.

As the F-ratio on concentration and peaking under pressure dimensions of psychological characteristics of individual, team and combat game's players were found to be significant, the Scheffe's Test of Post-hoc Comparison was applied to find out the significance of difference between ordered paired means of different type of game's players and data pertaining to this, has been presented in table 3.

TABLE 3
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF MALE
PLAYERS OF DIFFERENT TYPE OF GAMES ON CONCENTRATION AND
PEAKING UNDER PRESSURE DIMENSIONS OF PSYCHOLOGICAL
CHARACTERISTICS

Psychological Characteristics	Individual Game	Team Game	Combat Game	Paired mean difference	C.I.
Concentration	6.40	6.20	-	0.20	1.52
	6.40	-	8.44	2.04*	
	-	6.20	8.44	2.24*	
Peaking under Pressure	6.92	6.40	-	0.52	1.99
	6.92	-	8.52	1.60	
		6.40	8.52	2.12*	

*Significant at .05 level

It is quite obvious from table3, that there were significant differences on concentration factor of psychological characteristics between the ordered paired means of individual game - combat game and between team game- combat game male players. as the obtained mean differences of 2.04 and 2.44 respectively were higher than the confidence interval of 1.52. In case of peaking under pressure factor of psychological characteristics, significant difference was found between ordered paired means of team game and combat game male players. as the obtained mean difference of 2.12 was high than the confidence interval of 1.99.

DISCUSSION

F-ratio for seven factors of psychological characteristics of male players of three different type of games were taken separately, resulted in insignificant F- ratio in coping with adversity (0.57), coach-ability (.28), confidence and achievement motivation (1.19), Goal setting and mental preparation (1.06), and freedom from worry (1.87) factors of psychological characteristics. The difference in concentration (8.37), peaking under pressure (5.09) factors of psychological characteristics were significant, as the

F-ratios obtained for these factors were high than required value to be significant. It clearly indicates that the male players of different type of games had significant differences in their concentration and peaking under pressure factors of psychological characteristics. This may be attributed to the heterogeneity of the sample in terms of available training and competitive opportunity, socio -cultural and socio-economic environment. But they did not differ significantly in their coping with adversity, coach-ability, confidence and achievement motivation, and freedom from worry factors of psychological skills. This similarity of psychological characteristics at top level of competition may be attributed to the possible similar attitude , style and competitive orientation.

The application of Scheffe's Test of Post-hoc Comparisons indicated that male players of combat game were found to have more of concentration (8.44) than individual game (6.40) followed by team game (6.20). Further, male players of combat game were found to have more of peaking under pressure (8.52) than individual game (6.92) followed by team game (6.40).It indicates that male players of combat game were found to have greater concentration and peaking under

pressure than individual game players followed by team game players.

CONCLUSIONS

1. Male players of three different type of games exhibited different psychological ability for concentration and pressure.
2. Male players of three different type of games had similarity in adversity, coach-ability, confidence, goal setting and worry factors of psychological characteristics.
3. Male players of combat game had greater concentration ability and pressure ability than their counter parts.

BIBLIOGRAPHY

Jacques, H. A. and Van, Rossum, "Psychological Characteristics of Elite Athletes According to Top Level Coaches" High Ability Studies 7:1 (1996) : 15-23.

Vernacchia. et.al. "Psychosocial Characteristics of Olympic Track and Field Athletes". International Journal of Sport Psychology 31 : 1 (2000) : 5-23

Vernacchia. et.al. "Psychosocial Characteristics of Olympic Track and Field Athletes". International Journal of Sport Psychology 31 : 1 (2000) : 5-23

Kimbrough, Sandy., DeBolt, Louisa and Balkin, Richard S. "Use of the Athletic Coping Skills Inventory for Prediction of Performance in Collegiate Baseball". Sport Journal, 10 :1 (January, 2007) :4

Christiansen, D. S. "Self-efficacy, Cognitive Interference, Sport Anxiety, and Psychological Coping Skills as Predictors of Performance in Inter-collegiate Golf". Unpublished doctoral dissertation, University of Washington, 2000.

Sharma R. K. & Nigam, A. K. "Psychological Characteristics of Male University Athletes". Journal of Physical Education and Sport. 11 : 1 (2011) : 5-17.

Heinrich, Grobbelaar W. & Maryke, E. "Psychological Skills of Provincial Netball Players in Different Playing Positions" South African Journal for Research in Sport, Physical Education and Recreation, 33 :2 (2011): 45-58.

Yadav, S. K., Shukla, Uday Narayan and Yadav, Avinash "Assessment of Specific Psychological Skills of Basketball Players of Different levels of Achievement" International Journal of physical Education, Sports and Yogic Sciences 2:1 (November, 2012) : 38-40

Alkan, Nese and Akis, Tolga. "Psychological Characteristics of Free Diving Athletes: A Comparative Study" International Journal of Humanities and Social Science 3 :15 (August, 2013) : 150

Williams, J. M., & Krane, V. Psychological characteristics of peak performance. In J. M. Williams (Ed.), Applied sport psychology: Personal growth to peak performance. Mountain View, CA: Mayfield, 4th ed, 2001..

Jooste, Julius; Steyn, Barend J. M.; Van Den Berg, Linda. "Psychological skills, playing positions and performance of african youth soccer teams" South African Journal for Research in Sport, Physical Education ; 36 :1 (Jan. 2014) :85

Yadav, A. K. "Assessment specific psychological skills of Indian Judokas [medalist and non-medalist; both male and female] at different levels of achievement" Unpublished Doctoral Thesis, R. D. University, Jabalpur (M.P.), 2014.

Shrivastava, Yuwraj, "Comparative Analysis of Psychological characteristics of Male and Female Judo Players at Different Level of their Participation" Unpublished Doctoral Thesis, Dr. C.V. Raman University, Kota-Bilaspur (Chhattisgarh)-India, 2015.

Smith, R. E. Schutz, R. W and Smoll, F. L. "Development and Validation of a Multidimensional Measure of Sport-specific Psychological Skills: The Athletic Coping Skill Inventory-28". Journal of Sport and Exercise Psychology, 17:4 (1995) : 379-398.