

COMPARISON OF PSYCHO-PHYSIOLOGICAL VARIABLES AMONG BADMINTON, TABLE-TENNIS AND TENNIS PLAYERS

Khairuzzaman Mallick*

ABSTRACT

The purpose of the present study was to investigate the significant difference in selected Psycho-Physiological variables among the players of Badminton, Table-tennis and Tennis of S.G.B. Amravati University. For the purpose of the study 10 Players from each selected game were purposively selected, the age of the subjects were ranged between 18 and 28 years. The data pertaining to this study were collected by administering Nelson's hand and foot reaction test for co-ordination, modified bass balance test for dynamic balance, and 50 yard Dash for speed of movement. To determine the significant difference among the players of three selected games one way analysis of variance and LSD post hoc test were employed. The result showed significant difference among the three groups in foot reaction time ($F=8.163$), eye-hand co-ordination ($F=11.285$) and speed of movement ($F=7.731$). The result also showed that the Badminton players' foot reaction time and eye-hand co-ordination are significantly better than the Table-Tennis and Tennis players, where as in speed of movement Tennis players exhibited better than the Badminton and Table-Tennis players.

* Lecturer, A.P.C. College, New Barrackpore, Kolkata, (W.B.)

INTRODUCTION

Sports are a highly specialized activity, the participation in sports warrants a fundamental desire to compete and surpass others in performance, and since any sports activity involves competition. However, winning in a competition surely depends on performance. Better the performance, greater the chance of winning. Nevertheless, the quality of performance displayed by the athletes in competitive events is determined by the several aspects.

Table tennis competitors play one of the fastest ball games in the world and their performance is the result of a complex myriad of factors. Changes in the rules, techniques and table tennis equipment have seen ball spin and speed increase substantially compared to the past, shortening point rallies, Badminton is very popular in south east Asia and Indonesia. Which have produce many top players. Fitness has become increasing important past of Badminton both physical and mental fitness are required in Badminton players required arm and shoulder strength of maintain the smash and overhead clear for Badminton. Tennis is a racket sport in which two players or teams of two players, send a ball over a net in such a way that it is difficult to return legally. Modern tennis has its roots in the old French game of pause, for which the rules were written in Paris in 1592. Tennis was part of the first Olympic Games of the modern ear, in 1896; it was withdrawn from the Olympic after 1924 and reinstated in 1988.

Reaction times is the intermission between the onset of a stimulus and the commencement of a movement response. Reaction time can be further broken down into three parts. The first part is perception time the-time for the application and perception of the stimulus and giving the essential reaction to it. The second part is decision time, which signifies the time for giving a suitable response to the stimulus. The third part is motor time, which is the time for compliance to the order received.

In the same year Johnson and Leach (1968) modified the Bass test of Dynamic balance which has been commonly used to measure one's ability to land accurately and to balance while in various unstable, less stable and other precarious positions.

Co- ordination is the ability to integrate muscles movement into efficient patterns of movement" co-ordination make the difference between good performance and poor performance. The efficiency of skill patterns depends upon the interrelation of speed, agility, balance and muscle movements to be performed and see the relationship of each movement to the total pattern. Development of kinesthetic perception usually allows movement's to become rhythmical and efficient.

The purpose of this study was to find out the differences in Psycho-Physiological variables among the Badminton, Table-Tennis and Tennis Players.

METHODOLOGY

Selection of the Subjects:

Thirty male Inter-collegiate players from Badminton, Table-Tennis and Tennis Sports of S.G.B. Amravati University were selected as the subjects for the purpose of the study. The age of the subjects was ranged between 18 to 28 years. Ten players were selected in each sport.

Sampling Procedure:

Purposive sampling technique was adopted for the selection of subjects for the present study.

Selection of Tests and Criterion Measures:

The criterion measures chosen to test the hypothesis were : 1. Reaction time was measured by using Nelson's hand reaction time test and Nelson's foot reaction time test. 2. Dynamic Balance was measured by using Modified Bass Test. 3. Co- ordination was measured by using Eye-Hand Co-ordination Test (Ball Transfer) and Eye-Foot Co-ordination Test. 4. Speed of movement was measured by using 50 Yard Dash.

Collection of Data:

The data pertaining to the study were collected on the selected subjects by administering the aforesaid tests. Before collection of data, the scholars explained the purpose of the study to the subjects, so as to they could put their best.

Statistical Treatment:

One way Analysis of Variance statistical technique (F-Ratio) and LSD post-hoc test were employed to determine the difference among the players of selected games for each variable independently.

RESULTS AND DISCUSSION

The data collected on 10 subjects from each of sport on reaction time, co-ordination, balance and speed of movement were computed by using one-way Analysis of Variance (F-ratio) statistical technique. The result pertaining to the data have been presented in the following Tables:

TABLE 1
ANOVA ON SELECTED PSYCHO-PHYSIOLOGICAL VARIABLES FOR
BADMINTON, TABLE-TENNIS AND TENNIS PLAYERS

Variables	Source of Variance	d. f.	Sum of Square	Mean Squares	F- ratio
Hand Reaction Time	Between .Groups	2	0.0001231	0.0000615	0.752
	Within Groups	27	0.002211	0.0000818	
Foot Reaction Time	Between .Groups	2	0.00124347	0.00062173	8.163*
	Within Groups	27	0.0020564	0.000076163	
Eye-hand Co-ordination	Between .Groups	2	34.06001	17.03	11.285*
	Within Groups	27	40.74594	1.509109	
Eye foot Coordination	Between .Groups	2	2.29542	1.14771	0.861
	Within Groups	27	35.9777	1.332507	
Balance	Between .Groups	2	27.8	13.9	0.291
	Within Groups	27	1290.2	47.785185	
Speed of Movement	Between .Groups	2	3.404007	1.702003	7.731*
	Within Groups	27	5.94349	0.220129	

The findings of Table 1 reveals that foot reaction time ($F = 8.163$), eye-hand co-ordination ($F = 11.285$) and speed of movement ($F = 7.731$) showed significant

difference among the Badminton, Table-Tennis and Tennis players, whereas insignificant differences were found in hand reaction time ($F = 0.752$), eye-foot coordination ($F = 0.861$) and balance ($F = 0.291$) among the above mention selected sports players.

TABLE 2
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF
FOOT REACTION TIME AMONG BADMINTON, TABLE-TENNIS
AND TENNIS PLAYERS

Mean			Mean Difference	Critical Difference
Badminton	Table-Tennis	Tennis		
0.1846	0.1904		0.0058	0.008
0.1846		0.2002	0.0156*	0.008
	0.1904	0.2002	0.0098*	0.008

*Significant at 0.05 level.

It is evident from the above table 2 that there was significant difference in Foot reaction time between Badminton - Tennis players ($MD = 0.0156 > 0.008$) and between Table-Tennis- Tennis players ($MD = 0.0098 > 0.008$). The table also revealed that the mean of Foot reaction time did not differ significantly in between Badminton - Table-Tennis players ($MD = 0.0058 < 0.008$). The mean differences have been depicted in Figure 1.

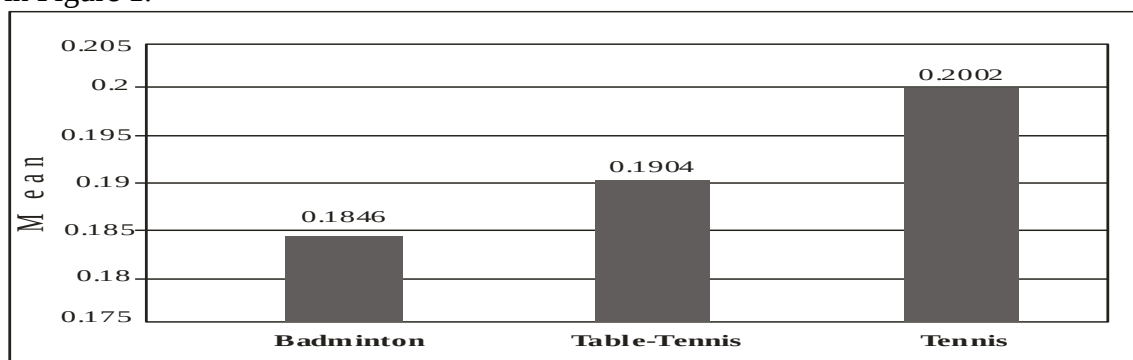


Figure 1
Difference of Means of Foot Reaction Time among the Badminton,
Table-Tennis and Tennis Player.

TABLE 3
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF
EYE-HAND CO-ORDINATION AMONG BADMINTON, TABLE-TENNIS
AND TENNIS PLAYERS

Mean			Mean Difference	Critical Difference
Badminton	Table-Tennis	Tennis		
15.391	16.207		0.816	1.13
15.391		17.946	2.555*	1.13
	16.207	17.946	1.739*	1.13

*Significant at 0.05 level.

Table 3 indicates that there is significant difference in Foot reaction time between Badminton and Tennis players ($MD=2.555 > 1.13$) and Table-Tennis and Tennis players ($MD = 1.739 > 1.13$) whereas in between Badminton and Table-Tennis players ($MD=0.816 < 1.13$) does not show significant difference. The mean differences have been depicted in Figure 2.

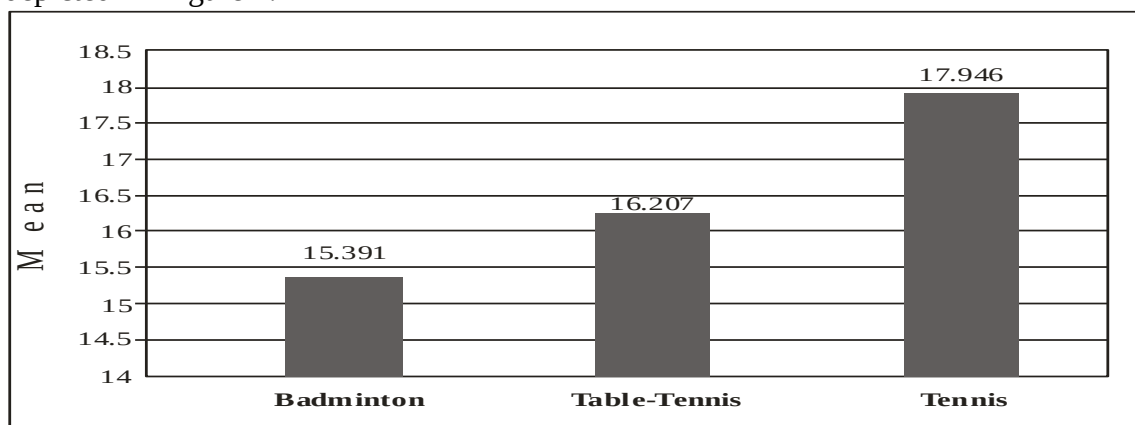


Figure 2
Mean Difference of Eye-Hand Co-ordination Among the Players of Badminton, Table-Tennis and Tennis.

TABLE 4
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF SPEED OF MOVEMENT AMONG BADMINTON, TABLE-TENNIS AND TENNIS PLAYERS

Mean			Mean Difference	Critical Difference
Badminton	Table-Tennis	Tennis		
7.204	7.193		0.011	0.43
7.204		6.484	0.72*	0.43
	7.193	6.484	0.709*	0.43

* Significant at 0.05 level.

Table 4 shows that there is significant difference in Foot reaction time between Badminton - Tennis players ($MD=0.72 > 0.43$) and between Table-Tennis - Tennis players ($MD=0.70 > 0.43$), whereas Badminton and Table-Tennis players ($MD=0.011 > 0.43$) did not shown he significant difference.

DISCUSSION

The analysis of data using to determine the significant difference among the players of three selected games one way analysis of variance and LSD post hoc test were employed. The result showed significant difference among the three groups in reaction time ($F=8.163$), eye-hand co-ordination ($F=11.285$) and speed of movement ($F=7.731$). An analysis of the above mentioned Table revealed that the Badminton players' foot reaction time and eye-hand co-ordination are significantly better than the Table-Tennis and Tennis players,

whereas in speed of movement Tennis players exhibited better than the Badminton and Table-Tennis players.

CONCLUSIONS

Within the limitations of the present study and on the basis of findings, the following conclusions are drawn.

1. The findings of the study revealed that there were significant differences in foot reaction time, eye-hand co-ordination and speed of movement among the Badminton, Table-Tennis and Tennis players.
2. There was no significant mean difference in hand reaction time, eye-foot coordination and dynamic balance among the Badminton, Table-Tennis and Tennis players.
3. Best performance in foot reaction time was shown by the Badminton players followed by Table-Tennis players and least performance was shown by the Tennis players.
4. Best performance in eye-hand co-ordination was shown by the Badminton players followed by Table-Tennis players and least performance was shown by the Tennis players.
5. Tennis players' speed of movement recorded best performance followed by Table-Tennis players whereas Badminton players' speed of movement performance recorded higher timing compared to Table-Tennis and Tennis players.

REFERENCES

- Annarino, A. Antomy.** Developmental conditioning for physical Education and Athletics. (Saint Louis : The C.V. Mosby company, 1972), P. 2
- Bucher, C.A** Foundation of Physical Education and Sports, (Toronto : The C.V. Mosby co., 1983), P.7
- Felshin, Jan.** More than Movement – An Introduction of Physical Education, (New Delhi : D.V.S Publication, 1996), P. 249
- Kansal, D.K.** Test and Measurement in Sports and Physical Education, (New Delhi: D.V.S. Publication, 1996), p. 249
- Singh, Hardyal.** Science of Sports Training (D.V.S. Publication, New Delhi, 1993).
- Tomas, A.P.** “Comparative Study of Speed, Balance and Co-ordination of Football, Basketball, Hockey and Handball Players,” (Unpublished Master's Dissertation, Jiwaji University).
- Tong, Sun.** “A comparative Analysis of Elite swimmer Reaction Time between the Grab and Track starts of the Beijing Olympic Games” *Journal of Sports sciences Researches*, 14 : 3, Sep-2010. .
- Uppal, A.K; Kumar, U; Lawrence, Gray; Pande, M.M.** Bio-Mechanics in Physical Education and Exercise, (New Delhi, Friends publication, 2004), P- 14.
- Zhi, E-L, Wang, Y. B, & Sun, D. P.** “Comparative Study on the Selective Reaction Time of Visual Sense of Student in Middle and Primary Schools in Changchun City,” C-Journal of She yang Institute of Physical Education, vol.23, Issue 3 (Jan 2004)
- http : // www.answers.com/topic/reaction** time # Measurement. wikipedia, the free encyclopedia. (Psychology and Aging, 2006), P. 21, 62-73.

EFFECT OF EXTRINSIC MOTIVATION ON FOOTBALL PERFORMANCE

Supriya Shaw *

ABSTRACT

The purpose of this study was to determine the effects of Extrinsic Motivation on Football performance of Adolescent age group. Sixty male students of Boys Secondary School Peth Makhama (West Bengal) were randomly selected as subjects of the present investigation. The age of the students ranged from 13 to 19 years. The subjects were randomly assigned using random sampling procedure in to three equal groups, i.e. two experimental and one control group. The experiment groups were given Extrinsic Motivation. Group 'A' was given reward, group 'B' was given punishment and group 'C' served as control group which was not given any motivation. All subjects were participating in the normal, programme of the school. Each subject of the experimental groups and control group were tested at the beginning and at the conclusion of an experimental period of two month to obtain pre test and post test scores. The significant of mean of difference, between the pre test and cost test was analyzed by applying t-ratio and among the group for final means by applying analysis of covariance. Results of the study revealed that significant difference was observed between the initial test and final test means of reward group. But the significant difference was not found between the initial test and final test of punishment group and control Group. Paired Mean difference between the reward group and control group was found statistically significant. But there was no significant between the reward group and punishment group and between the punishment group and control group performance.

Keywords: Punishment, Reward, Motivation, physical Fitness, Performance.

* M.Phil. Scholar, Department of Physical Education, Dr. C. V. Raman University, Kargi Road, Kota, Bilaspur (C.G.)

INTRODUCTION

One of the central issues in modern sports psychology is motivation. An insight into how to construct motivation in sports and physical activity is an important area of interest to sports psychologist and also has practical relevance for coaches, teacher and parents. Motivation is a process by which an individual is guided to do some activity. It is a psycho-physiological condition of organism which causes to work or strive to fulfill its need. Thus motivation is the study of some activity of an individual and his persistence in that activity until the goal is reached. This clearly indicates that motivation is purposive.

Motivation is process by which an individual is inspired to undertake a task. It is psycho physiological condition of the organism which causes it to work or strive to fulfill its needs thus motivation is a study of some activity of an individual and is persistence in that activity until the goal is reached. This clearly indicated that motivation is purposive.

The concept of motivation is used in explaining the causes as to why some individuals have greater desire to compete and win than others. This is clearly reflected in fact that between two equally skillful individuals, who are challenged by a difficult task. One is more capable of achieving success than the others.

Motivation is a reality but the most difficult problem at hand is how to deal with it, how to instill it, how it is necessary to do so in the interest of life itself. The purpose of this study was to determine the effects of Extrinsic Motivation on Football performance. It was also hypothesized that the reward method would be better in comparison to punishment method in improving the performance.

Chamblee tried to study the influence of reward in the form if verbal argument feedback condition on the acquisition of closed irons physical skill by beginners. The sample consisted of 60 female college voluntaries. The participants were randomly assigned to one of the three feedback groups. Rushall and Fattinger studied the effect of various reinforcers used as motivators in swimming where three kinds of reward were constasted as to their effect upon swimming work volume significantly over the coaches attention and control conditions were affected differently by age.

METHODOLOGY

Selection of Subjects:

Sixty male students of adolescent age group age ranging between 15 to 19 years and studying in boys higher secondary school, Madhyam Gram, Kolkata, West Bengal, were randomly selected as subjects of the study. All subjects were randomly assigned to two experimental group (A & B) and one control group (C). Each group consisted o of 20 subjects. The experimental treatment was also assigned to the group at random. The group A and B were treated as experimental group and were given motivation i.e. Reward and punishment respectively. The group C served as a control group and was not given any motivation. All subjects were participating in the normal programme of the school.

Criterion Measures:

To find out the effect of extrinsic motivation on performance physical fitness components of West Bengal region students, "AAPHER" youth physical fitness test was selected and their scores from following test were considered as criterion measures for this study.

Experimental Design:

Random group design was adopted for this study as all the subjects were selected randomly and randomly divided into three groups. Further the experiment treatments were assigned at random to the experimental groups and the third group serves, as control group. The experimental groups were motivated by two motivational techniques i.e. Reward and punishment respectively.

Collection of Data:

The data was collected for each variable administering their respective tests i.e. 600 m run/walk, Sit-ups, Pull-ups, 50 m dash, 4x10 m shuttle run and Standing broad jump. The tests were administered at play ground of boys Baidyabati higher secondary school, Madhyam Gram, Kolkata, West Bengal. To ensure that the data was reliable each subject was given sufficient number of trials to perform the respective test for each variable. The data was collected before the starting of experimental treatment (pre-test) and at the end of training period (post-test). The test was explained to the subjects prior to their administration. The subjects were given chance to practice the tests and made them familiar with

Statistical Technique:

In order to study the effect of Extrinsic motivation on performance of physical fitness components of West Bengal region students, Mean, standard deviation and 't'-test was applied and further to find out variance in performance of physical fitness component due to Extrinsic motivation techniques, analysis of covariance was applied to .05 level of significance.

RESULTS AND DISCUSSION

In order to determine the significance of differences if any, made by two experimental groups and a control group between pretest and post-test, mean and t-test for composite score of "AAPHER" youth physical fitness test were computed and data pertaining to this have been presented in Table 1.

TABLE 1
SIGNIFICANCE OF DIFFERENCE BETWEEN THE PRE-TEST AND POST-TEST MEANS
OF THE EXPERIMENTAL AND ONE CONTROL GROUP ON COMPOSITE SCORES
OF "AAPHER" YOUTH PHYSICAL FITNESS TEST PERFORMANCE.

Groups	Pre- Test	Post-Test	MD	SE	t-ratio
Reward	299.48	332.22	32.74	9.58	3.40*
Punishment	325.08	329.80	4.72	9.05	.52
Control	293.72	278.68	15.04	12.08	1.24

*Significant at .05 level, $t_{0.5(19)} = 2.09$

It is evident from Table 1 that the significant difference was found between the pre - test and post -test of reward group, as the obtained t-value of 3.40 was higher than the required value of $t_{0.5(19)} = 2.09$. Significant difference was not observed among the other groups as the values obtained t- values of 0.52 and 1.24 were lesser than the required value to be significant.

In order to find out the significance of difference among the groups on composite scores of "AAPHER" youth fitness test performance, ANOVA was applied. The results pertaining to this are given in Table 2.

TABLE 2
ANALYSIS OF COVARIANCE OF THE MEANS OF TWO EXPERIMENTAL AND ONE
CONTROL GROUP COMPOSITE SCORES OF AAPHER
YOUTH FITNESS TEST PERFORMANCE

	Groups Reward Punishment Control			Source of Variance	Sum of Square	df	Mean Squares	F-value
Pre-test mean	299.48	325.08	293.72	B W	10076.98	2 57	5038.49 12741.75	.39
Post-test mean	332.22	329.80	278.68	B W	36477	2 57	238 11052.98	1.65
Adjusted mean	335.27	313.28	288.18	B W	22804.64	2 56	402.32 1760.81	6.47*

*Significant at .05 level, $F_{.05}(2, 57) = 3.15$

It is evident from Table 2 that the significant difference was not found between pre-test mean and post-test mean where as significant difference was found between the as the obtained F-value is 6.47 was higher than the required $F_{.05}(2, 57) = 3.15$.

As the significant difference was found between the adjusted mean and post-test mean, Scheffe's Test of Post-hoc Comparison was applied and data pertaining to this have been presented in Table 3.

TABLE 3
PAIRED ADJUSTED FINAL MEANS AND DIFFERENCE BETWEEN MEANS FOR TWO
EXPERIMENTAL AND ONE CONTROL GROUP ON COMPOSITE OF
"AAPHER" YOUTH FITNESS TEST PERFORMANCE

Reward Group	Mean Punishment Group	Control	Difference Between mean	Critical difference for Adjusted Mean
335.27	313.28		21.99	27.72
335.27		288.18	47.09*	27.72
	313.28	288.18	25.10	27.72

*Significant at .05 level

It is evident from the table 3, that the mean difference between the reward and control group was found significant at .05 levels and significant difference was not found between the rest of the groups.

DISCUSSION

It is evident from the findings that motivational techniques namely reward proved to be significantly effective techniques to improve the performance on composite scores of "AAPHER" youth fitness test in comparison to punishment and control group performance. Punishment group and control group could not prove to be significantly effective in improving the performance of the subjects.

This may be attributed to the fact that every person has a strong desire that he should be recognized and wishes that others should praise him for his work or performance and people should accept him as a superior person. Every child wants that everyone should praise that entire he does. There are many honours hi society and all wish to get them and want to be mentioned in the honour list of the school, selecting for various competition etc. give great pleasure and increase the expected quality hi the performance.

It is evident from the findings that there is significant difference between the rewards group and control group. Whereas there is no significant difference between the reward group and punishment group also no significant difference between the punishment and control group.

This may be attributed to the fact that the performance of an individual in any field need some amount of motivation in order to quality oneself in terms of excellence. This is not only applicable I the routine social interaction but also in that field of sports where lot of competition is involved.

CONCLUSIONS

On the basis of the results obtained from the present study, the following conclusions are drawn:

1. Significant difference was observed between the initial test mean and final test mean of reward group.
2. No significant difference was found between the initial test and final test of punishment group.
3. No significant difference was found between the initial test and final test mean of control group.
4. Paired Mean difference between the reward group and control group was found statistically significant.
5. There was no significant between the reward group and punishment group.
6. There was no significant difference between the punishment group and control group performance.

REFERENCES

- Atkinson, J.W.** An Introduction to Motivation, New York: Strand Reinhold company, 1964.
- Grow, Lester D. and Crow, Alice,** Child Development and Adjustment. New York : Macmillan Component., 1963.
- Garrett, Henry E.** Statistics in Psychology and Education. Bombay: Vakils Jeffer and Simmons Pvt. Ltd., 1969.
- Johnson, Barry and Nelson, Jack J.** Practical Measurement for Evaluation in Physical Education. 3rd Ed. Delhi: Surjeet Publication, 1969.
- Kamlesh, M.L.** Psychology of Physical Education and Sports. New Delhi: Metropolitan Book Co. Pvt. Ltd., 1988.
- Marten, Rainer,** Coaches guide to sports psychology, Iliionis: Human Kinetics Publishers Inc., 1980.
- Mangal, S.K.** Educational Psychology, Ludhiana: Prakash Brothers Educational Publishers, 1988.

Pemberton, Cynthial L., Robert, Glyn C.: and Spink, Kelkin S. Learning Experience in Sports Psychology. Illinois: Human Kinetics Publishers Inc., 1986.

Ross, J.S. Human Growth and Development. New Delhi: H.M Vyas Publishing House., 1976.

Singh, Hardayal. Science of Sports Training. New Delhi: D.V.S. Publications., 1991.

EFFECT OF PHYSICAL FITNESS VARIABLES ON URBAN AND RURAL SCHOOL LEVEL CRICKET PLAYERS

SK. Rasid Mahammad*

ABSTRACT

The purpose of the study was to investigate the effect of physical fitness variables on urban and rural school level cricket players. Forty (20 urban school & 20 rural school) male cricket players of Paschim Midinipur district (W.B.) were selected by purposive random sampling method for the investigation. All subjects were randomly assigned experimental group (A) and control group (B). Each group consisted of 20 subjects. The six week cricket training program was assigned to the experimental group. The group B served as a control group and was not given any type of training. To assess the physical fitness components of male cricket players belong to urban and rural area schools, means and standard deviations were computed. To find out the significant difference between pre-test and post means of experimental group and control group of male cricket players belong to urban and rural area schools, t-ratios were computed on six components of physical fitness for investigated subjects. The results of the investigation revealed that 1. Male cricket Players of both the groups were homogeneous with respect to muscular strength and endurance of arm and shoulder at pre-test point. But there is a effect of treatment on the pull-ups post-test performance. 2. Similarity was found among male cricket players of both the groups in their muscular strength and endurance of abdominal muscle at pre-test and post test point. But there was no effect of treatment on the sit-ups test performance of male cricket players of school level belong to urban and rural area. 3. Significant effect was not observed on the shuttle run test and standing broad jump performance of Male Cricket players of school level belong to urban and rural area. 4. Significant effect exhibited by male cricket players of school level belong to urban and rural area on the 50 yard dash and 600 yard test performance.

* M.Phil. Scholar, Department of Physical Education, Dr. C. V. Raman University, Kargi Road, Kota, Bilaspur (C.G.)

INTRODUCTION

The poor performance of Indian sports persons at the international and national competition has been of a great concern. Efforts have to be made to develop proper means and methods so that stagnating factors might be eliminated for higher level performance. Since it is difficult for the teachers and coaches to impart systematic and technical training in all component of physical performance and to determine their degree of influence in connection with the performance, they can be best, expose their trainee, to a programme of physical fitness development which might enhance their performance in games and sports in general (Uppal, 1984).

There are numerous factors which are responsible for the performance of sportsmen. The physique and body composition including the size, shape and form are known to play a significant role in this regard (Sodhi and Grewal, 1984).

The performance of a sportsman in any games or event also depends on speed, strength, endurance, agility, flexibility and co-ordination. Along with these physical variables, physiological and psychological components, also play an important role in the execution of the performance.

Games and sports had become an integral part of human beings; it rose to its greatest height in Greece, which is called "Golden Era" in the history of games and sports. Through the development of various motor fitness components such as agility, power, balance, flexibility, local muscle endurance, cardio vascular endurance, coordination of these entire components one is able to develop the various skills accurately & efficiently. These components can be achieved through scientific and systematically i.e. step wise step. General motor skills are developed from the childhood onwards when the children starts running, jumping, playing, walking etc. Motor ability refers to the level to which one has developed his innate capacity to learn motor skills.

Human life is based upon the body he keeps. All the activities of life are done with the help of body. Nature has created humans to perform various activities efficiently. Today modernization has made human life more easy, as most of the work is performed by the machines. The sedentary life style of man has reduced the efficiency of humans. The less working capacity of humans has caused many problems like weakness, illness, chronic diseases, etc. In past our ancestors were quite healthy and fit. The big reason was that, they had to perform a lot of hard physical activity, like running, walking, jumping etc. The environment in past was less polluted. Moreover, they had less stresses in their life. Today it is all opposite, i.e., physical activity is less, environment is polluted, unhygienic conditions exist all around, life is full of stresses, unbalanced diet etc. All these factors have reduced the efficiency of humans. Today, we desperately require physical fitness not only to improve our abilities but also to improve our health and wellness. This will also help to develop healthy environment around us along with community health, thus nation will be benefited. By die physical fitness programs, we can improve our fitness, wellness and health (Kundra, 2009).

Physical fitness is one of the main factors for an athlete's success. It has been shown that a high level of the elements of physical fitness such as cardiovascular endurance, muscular strength and endurance, flexibility and speed is useful and effective in achieving success in different sports. Nowadays, before being sent to competitions, teams are given a test for the evaluation of the physical status of their members (Zarl et. al., 2008).

Physical Fitness is the ability to perform daily tasks vigorously and alertly, with energy left over for enjoying leisure-time activities and meeting emergency demands (Singh et.al., 2008).

Research suggests that individuals who have increased fitness knowledge via health education are more likely to be physically active and fit. In addition, an individual's health literacy is suggested to play a substantial role towards the acquisition of health knowledge. However, literature delineating the relationship between health knowledge, health literacy, and the components of health-related physical fitness is scarce and inconsistent (Faktor, 2009).

According to expert Hebbellneck (1984) "Physical fitness is a combination of muscular strength, endurance, speed, agility, indoor skills, flexibility and co-ordination. These have been growing realization of physical fitness enhancing human health and performance. The term physical fitness implies fitness of the body and mind and due to body and mind relationship, the new concept of physical fitness includes mental, emotional, social as well as physical aspect.

According to Barrow (1972) It is not a stage for young but for all ages". Physical fitness and motor fitness are often used as a inter changeable terms.

According to Clarke (1971) "Physical fitness has three basic components i.e. muscular endurance, muscular strength and circular-respiratory endurance, where as motor fitness includes four additional components i.e. muscular power, agility, flexibility and speed". The human values conquest in the field of sports holds a unique place. It is success, victory, triumph and domination of some over other team mates and friends because sports is comradeship and friendship.

In football training special and multifaceted motor abilities have direct impact on the special fitness of the football players. Depending on the needs, they can be helpful as a selection criterion and useful for the evaluation of the progress in the player abilities (Cicirko, 2007).

The researcher was the student of physical education. The researcher knows very well that physical fitness is essential for the human life. It has a great role in life, but to maintain physical fitness and Functions of Internal Organs daily exercise is must. The researcher has seen people of deferent School Level Students doing different kind of exercises for example –swimming, running, walking, calisthenics and yoga exercises etc. But which exercise has high and low influence on physical fitness and health status, so the researcher was interested to investigate the effect of physical fitness variables on urban and rural school level cricket players. It was also hypothesized that there may be significant difference in pre-test and post means of Experimental and Control Groups of male cricket players on six components of AAHPERD youth physical fitness tests.

METHODOLOGY

Selection of Subjects:

Forty (20 urban school & 20 rural school) male cricket players of Paschim Midinipur district (W.B.) were selected by purposive random sampling method for the investigation. All subjects were randomly assigned experimental group (A) and control group (B). Each group consisted of 20 subjects. The six week cricket training program was assigned to the

experimental group. The group B served as a control group and was not given any type of training. The mean age and SD of the male cricket players were 17.96 ± 1.67 respectively.

The subject were explained about the purpose of study in the presence of their physical education teacher and principal of schools to elicit active cooperation from the subject.

Sampling Technique:

Sampling is an important process in research work, especially where the researcher has to collect the data from limited or particular population. The present study was comparative. The sample was selected through purposive sampling technique. The data was collected from the women players of team and individual and games.

Criterion Measure:

Measurement for various variables were taken at the beginning (pre- test) and at the end of experimental period, after six weeks (post-test). The data was collected before and after six weeks of experimental period by using standard tests. Time was recorded to the nearest second the hanging position held (Flex-arm hang); Maximum number of correctly executed pull-ups performed ; Number of correctly executed sit-ups performed in one minute ups; time taken to run a distance of 40 meter (Girls) and 60 meters (Boys) as fast as possible recorded in 1/10 of second,, maximum horizontal distance jumped from ground level and reach at same ground level(standing broad jump) and recorded in to nearest centimeter; time taken to run a distance of 50 yard as fast as possible recorded in 1/10 of second; and time taken to run a distance of 600 yard as fast as possible recorded in minutes and seconds were recorded.

Description and Administration of Tool:

The AAHPER Youth Fitness Test was administered to the subjects at their respective ground. Tester got help from Physical education teacher, Coaches and permission of the head of the concerned institution. The subjects were explained about the tests and demonstration of all the test items were given to them.

They were allowed to warm up on their own, for 5 to 10 minutes before the actual test were administered. A gap of rest was given before the administrations of each test in remaining test item were not influenced by the previous item. Measuring tape, stopwatch, whistle, pen, paper, wooden blocks were used as instruments for the tests to collect the data. AAHPER Fitness Test is given in Appendix at the end of references.

Statistical Analysis:

To assess the physical fitness components of male cricket players belong to urban and rural area schools, means and standard deviations were computed. To find out the significant difference between pre-test and post means of experimental group and control group of male cricket players belong to urban and rural area schools, t-ratios were computed on six components of physical fitness for investigated subjects. The level of significant was set at .05 level.

RESULTS AND DISCUSSION

In order to find out the significance of differences among male cricket players of urban and rural area secondary schools belong to Paschim Midnapur district (west Bengal), means, standard deviations, and t-ratios were computed for obtained data by using AAPHER Youth Physical Fitness Test. To check the obtained t-ratio, the

level of significance was set at .05 level and data pertaining to this have been presented in Table 1 to 7 .

TABELE 1
DESCRIPTIVE STATISTICS OF PHYSICAL FITNESS COMPONENTS OF MALE
CRICKET PLAYERS OF EXPERIMENTAL AND CONTROL
GROUPS ON PRE-TEST AND POST-TEST

Test Variables	Treatment	Experimental Group (N=20)		Control Group (N=20)	
		Mean	SD	Mean	SD
Pull-Ups	Pre-test	06.15	1.76	06.85	1.46
	Post-test	08.85	1.53	07.60	1.50
Sit-ups	Pre-test	26.90	2.02	27.85	4.65
	Post-test	29.05	1.79	27.85	4.64
Shuttle Run	Pre-test	16.20	1.51	11.66	0.32
	Post-test	11.62	0.53	11.65	0.31
Standing Broad Jump	Pre-test	194.70	14.07	176.15	12.95
	Post-test	170.40	13.77	176.15	12.94
50 Yards Run	Pre-test	08.99	0.66	09.21	0.82
	Post-test	10.28	0.82	09.21	0.84
600 Yards Run	Pre-test	2.19	0.38	02.69	0.22
	Post-test	2.09	0.26	02.06	0.23

The mean scores of various components of physical fitness on pre-test and post-test of experimental and control group of male cricket players have been depicted in figures 1 to 6.

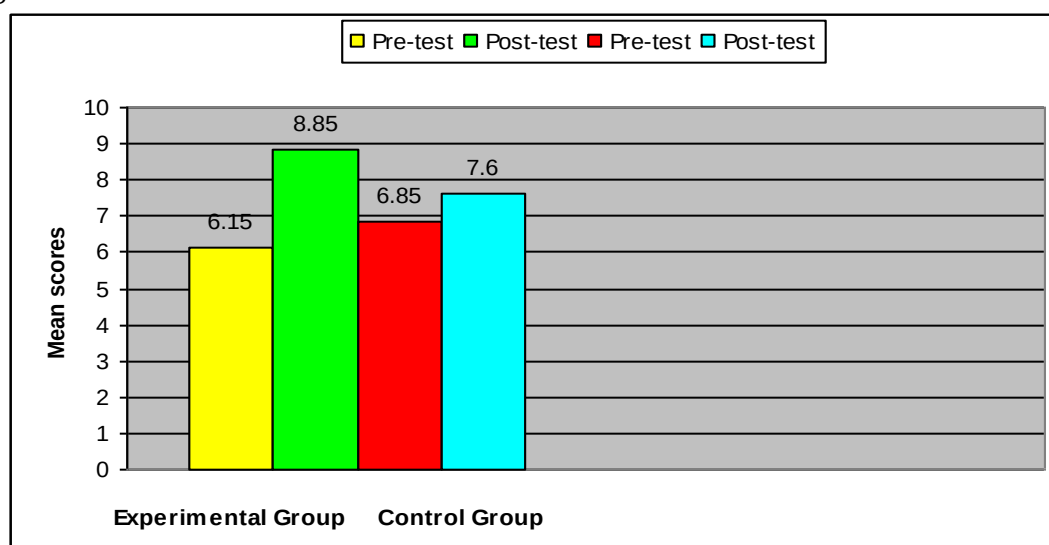


Figure-1: Mean Scores of Pull-Ups on Pretest and Post-test of Experimental and Control Group of Male Cricket Players

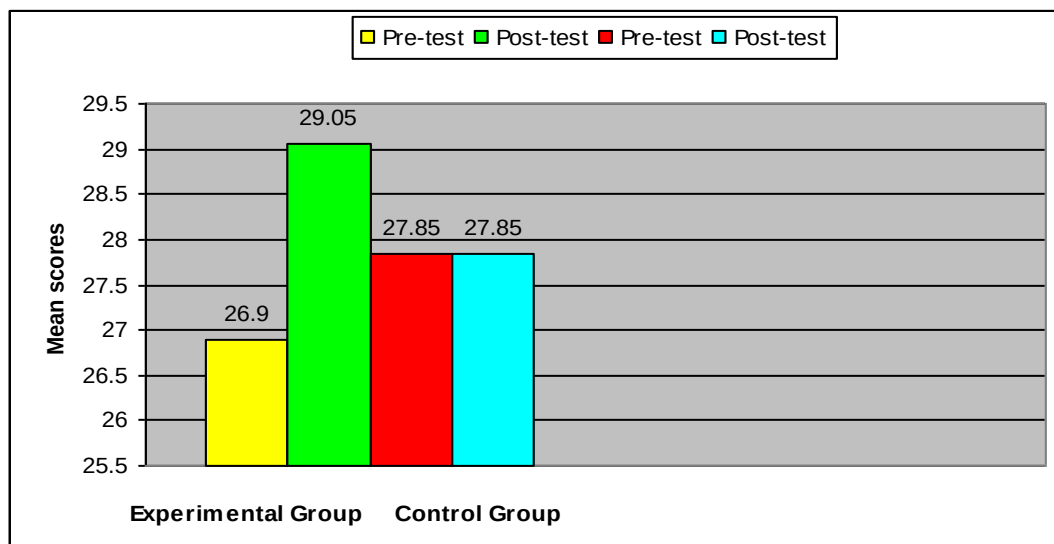


Figure-2: Mean Scores of Sit-Ups on Pretest and Post-test of Experimental and Control Group of Male Cricket Players

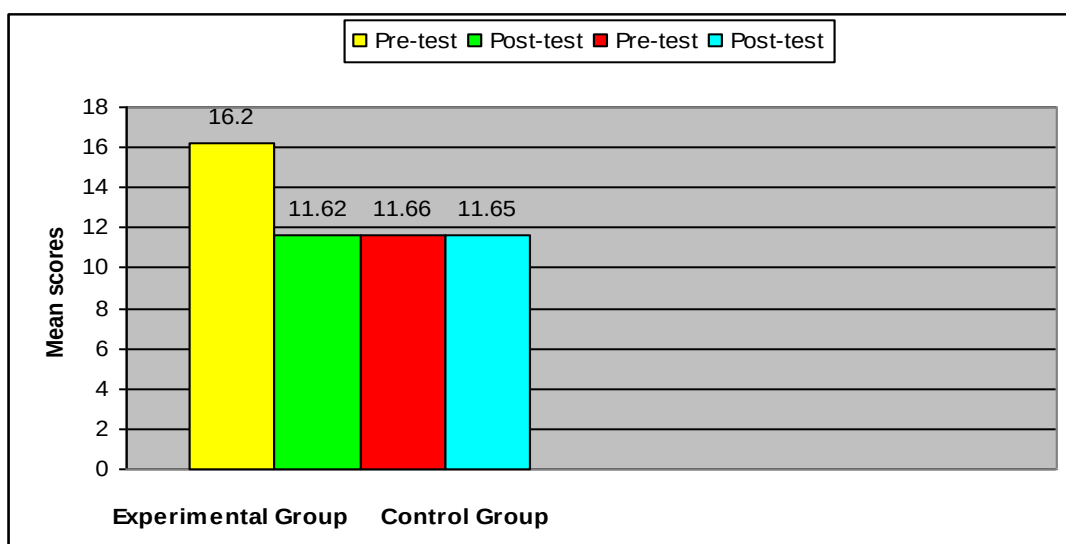


Figure-3: Mean Scores of Shuttle Run on Pretest and Post-test of Experimental and Control Group of Male Cricket Players.

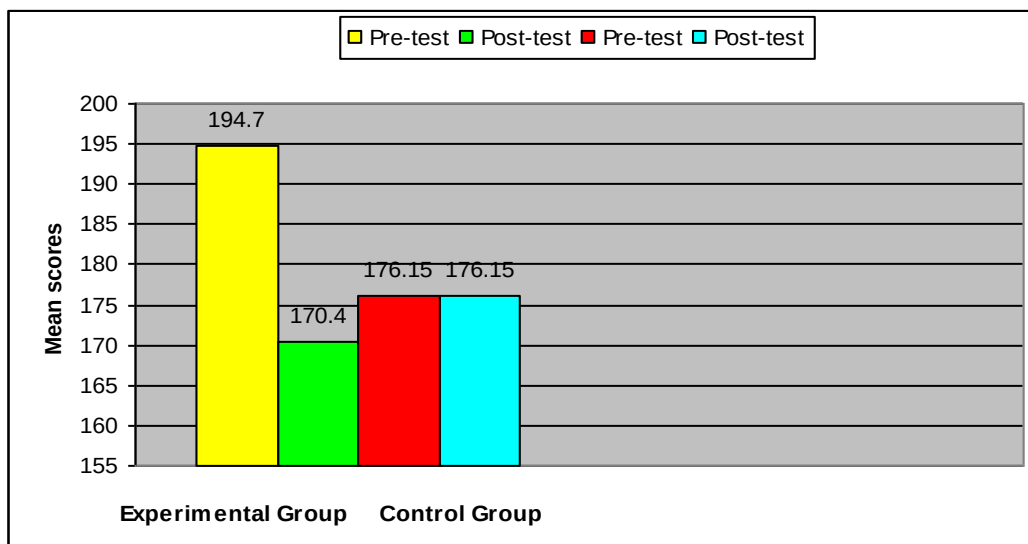


Figure-4: Mean Scores of Standing Broad Jump on Pretest and Post-test of Experimental and Control Group of Male Cricket Players.

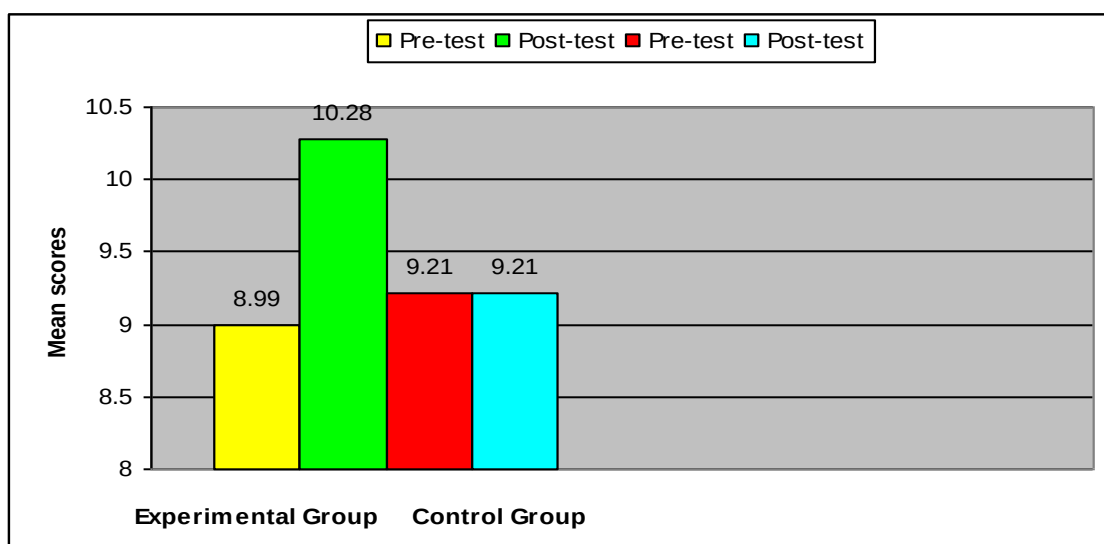


Figure-5: Mean Scores of 50 Yard Dash on Pretest and Post-test of Experimental and Control Group of Male Cricket Players.

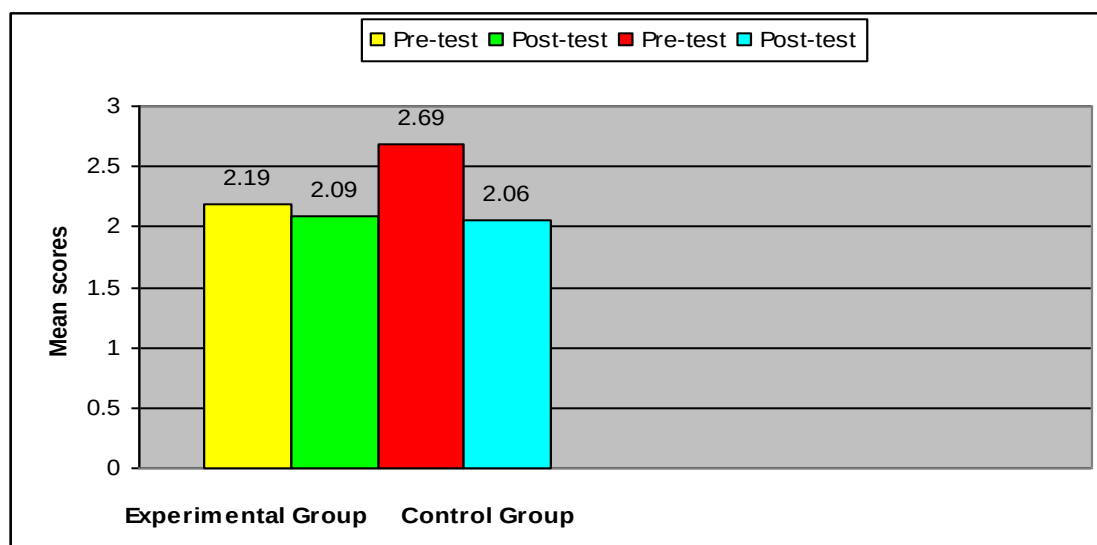


Figure-6: Mean Scores of 600 Yard Run on Pretest and Post-test of Experimental and Control Group of Male Cricket Players.

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST MEAN SCORES OF PULL-UPS OF EXPERIMENTAL AND CONTROL GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	6.15	0.70	0.51	1.37
	Control Group	6.85			
Post-test	Experimental group	8.85	1.25	0.47	2.60*
	Control Group	7.60			

*Significant level at 0.05

$t_{0.05(38)} = 2.00$

It is evident from Table 2 that statistically significant difference was not found between the pre-test means of experimental group and control group in pull-ups of male cricket players, as the obtained t-value of 1.37 was less than the required value of $t_{0.05(38)} = 2.00$. This implies that both the groups are homogeneous with respect to muscular strength and endurance of arm and shoulder at pre-test point. But the significant difference was found between the post-test means of experimental group and control group in pull-ups of male cricket players, as the obtained t-value of 2.60 was higher than the required value to be significant. This suggests that there is a effect of treatment on the pull-ups test performance.

TABLE 3
SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST
MEAN SCORES OF SIT-UPS OF EXPERIMENTAL AND CONTROL
GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	26.90	.095	1.13	0.83
	Control Group	27.85			
Post-test	Experimental group	29.05	1.20	1.11	1.07
	Control Group	27.85			

Insignificant level at 0.05

t.05 (38) = 2.00

It is evident from Table 3 that statistically significant difference was not found between the pre-test and post-test means of experimental group and control group in sit-ups of male cricket players, as the obtained t-values of 0.83 and 1.07 were less than the required value of t.05(38)=2.00. This implies that both the groups are homogeneous with respect to muscular strength and endurance of abdominal muscle at pre-test and post test point. This suggests that there is no effect of treatment on the sit-ups test performance.

TABLE 4

SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST
MEAN SCORES OF SHUTTLE RUN OF EXPERIMENTAL AND
CONTROL GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	16.20	.454	0.34	13.17*
	Control Group	11.65			
Post-test	Experimental group	11.62	0.03	0.13	0.28
	Control Group	11.65			

*Significant level at 0.05

t.05 (38) = 2.00

It is evident from Table 4 that statistically significant difference was found between the pre-test means of experimental group and control group in shuttle run performance of male cricket players, as the obtained t-value of 13.17 was higher than the required value of t.05(38)=2.00. This implies that both the groups are heterogeneous with respect to agility at pre-test point. But the significant difference was not found between the post-test means of experimental group and control group in pull-ups of male cricket players, as the obtained t-value of 0.28 was much less than the required value to be significant. This suggests that there is no effect of treatment on the shuttle run test performance.

TABLE 5
SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST
MEAN SCORES OF STANDING BROAD JUMP OF EXPERIMENTAL
AND CONTROL GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	194.70	.	4.28	4.33*
	Control Group	176.15	18.55		
Post-test	Experimental group	170.40	5.75	4.22	1.36
	Control Group	176.15			

*Significant level at 0.05

t.05 (38) = 2.00

It is evident from Table 5 that statistically significant difference was found between the pre-test means of experimental group and control group in standing broad jump performance of male cricket players, as the obtained t-value of 4.33 was higher than the required value of t.05(38)=2.00. This implies that both the groups are heterogeneous with respect to explosive strength of legs at pre-test point. But the significant difference was not found between the post-test means of experimental group and control group in standing broad jump performance of male cricket players, as the obtained t-value of 1.36 was less than the required value to be significant. This suggests that there is no effect of treatment on the standing broad jump test performance.

TABLE 6
SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST
MEAN SCORES OF 50 YARD DASH OF EXPERIMENTAL AND
CONTROL GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	8.99	.	0.23	0.90
	Control Group	9.21	0.21		
Post-test	Experimental group	10.27	1.06	0.26	4.06*
	Control Group	9.21			

*Significant level at 0.05

t.05 (38) = 2.00

It is evident from Table 6 that statistically significant difference was not found between the pre-test means of experimental group and control group in 50 yard dash of male cricket players, as the obtained t-value of 0.90 was less than the required value of t.05(38)=2.00. This implies that both the groups are homogeneous with respect to speed and explosive strength performance at pre-test point. But the significant difference was found

between the post-test means of experimental group and control group in 50 yard dash of male cricket players, as the obtained t-value of 4.06 was higher than the required value to be significant. This suggests that there is a effect of treatment on the 50 yard dash test performance.

TABLE 7
SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST-TEST
MEAN SCORES OF 600 YARD RUN OF EXPERIMENTAL AND
CONTROL GROUP OF MALE CRICKET PLAYERS

Test	Groups	Mean	M.D.	σ DM.	t-value
Pre-test	Experimental group	2.18	0.22	0.09	2.44*
	Control Group	2.40			
Post-test	Experimental group	2.89	0.44	0.21	2.09*
	Control Group	2.45			

*Significant level at 0.05

t.05 (38) = 2.00

It is evident from Table 7 that statistically significant difference was found between the pre-test and post-test means of experimental group and control group in 600 yard run of male cricket players, as the obtained t-values of 2.44 and 2.09 were higher than the required value of t.05(38)=2.00. This suggests that there is a effect of treatment on the 600 yard test performance in both groups male cricket players.

DISCUSSION

The primary finding of this investigation was that regular participation in a cricket training program produced greater magnitudes of improvement in muscular strength and endurance of arms and shoulders, speed and explosive power of legs, and cardio-vascular endurance of experimental group than control group after short-term training. No injuries occurred as a result of training throughout the study period. The present observations suggest that incorporating training into the cricket coaching and training may be a safe and valid means to promote physical fitness in school level cricket players. These findings have important practical relevance for designing training program for school level cricket players since muscular fitness is an important health related fitness component that contributes to tasks of daily life, participation in sports activities, and reduction of disease (National Association for Sport and Physical Education, 2004).

The present study confirmed the positive effects on muscular strength and endurance of arms and shoulders, speed and explosive power of legs, and cardio-vascular endurance of school level male cricket players over six weeks. Male cricket players engaged in cricket training program of six weeks demonstrated the development in muscular strength and endurance of arms and shoulders, speed and explosive power of legs, and cardio-vascular endurance. The results of the present study was partially supported by Hopkin (1999) & Sharma (2011).

In the present study, students who participated in the cricket training program made significantly greater gains on the muscular strength and endurance of arms and shoulders, speed and explosive power of legs, and cardio-vascular endurance than changes in the control group. These results show that school level cricket players respond to cricket training by increasing their ability to perform selected strength endurance and explosive power.

It was hypothesized that there may be significant difference in pre-test and post means of Experimental and Control Groups of male cricket players on six components of AAHPERD youth physical fitness tests i. e. Pull-Ups, Sit-ups, Shuttle Run, Standing Broad Jump, 50 yards Run and 600 meter Run is partially accepted, as the positive effects were found on muscular strength and endurance of arms and shoulders, speed and explosive power of legs, and cardio-vascular endurance parameters of physical fitness over six weeks school children engaged in cricket training program.

CONCLUSIONS

1. Male cricket Players of both the groups were homogeneous with respect to muscular strength and endurance of arm and shoulder at pre-test point. But there is an effect of treatment on the pull-ups post-test performance.
2. Similarity was found among male cricket players of both the groups in their muscular strength and endurance of abdominal muscle at pre-test and post test point. But there was no effect of treatment on the sit-ups test performance of male cricket players of school level belong to urban and rural area.
3. Significant effect was not observed on the shuttle run test and standing broad jump performance of Male Cricket players of school level belong to urban and rural area.
4. Significant effect exhibited by male cricket players of school level belong to urban and rural area on the 50 yard dash and 600 yard test performance.

REFERENCES

- Barrow, H.M.** Man and Movement : Principles of Physical Education. Philadelphia: W.S. Saunder & Co, 1972.
- Clarke, Harrison H.** Application of Measurement to health and Physical Education. New.Jersey: Englewood Cliff, 1971.
- Cicirko, L. et.al.** "General and special physical fitness levels in young football players" *Journal of Sports Science and Medicine* (2007) Suppl. 10, p. 187. <http://www.jssm.org>
- Faktor, Marc D.** "Health-Related Physical Fitness, Knowledge, and Administration of the Canadian Physical Activity, Fitness, and Lifestyle Approach". Unpublished M. S. thesis, University of British Columbia, 2009.
- Hebbellneck, M.** "The concept of health related to physical fitness". International Journal of Physical Education, 21:1(1984) : 9-18.
- Kundra, Sanjay**, *Physical Education*, (New Delhi: Evergreen Publications, Third Edition, 2009), p. 1.
- Singh, Ajmer et. al.**, Essentials Of Physical Education, (New Delhi : Kalyani Publishers, Third Edition, 2008). p. 277.

- Sodhi, L.S. & Grewal, R.** “Effect of Hard Training on Cardio-vascular System of Indian Women Hockey Players”. Journal of Sports Medicine & Physical Fitness. 24 : 1(1984) : 34-40.
- Uppal, A.K.** “Effect of 4 -weeks intensive training in badminton of women players”. SNIPES Journal, 5 : 2 (1984):51.
- Zar1, A. et. al.** “A Survey of the Physical Fitness if the Male Taekwondo Athletes of the Iranian National Team ” Facta Univertatis: Physical Education and Sport 6 : 1(2008) 21 – 29.

OVERVIEW ON SPORTS PSYCHOLOGY

Dr. Rajkumar Sharma*

ABSTRACT

The sport psychology is the modern branch of psychology. It is more advanced in western country like G.D.R. This sport psychology is essential teaching to every national team. The modern psychology is the study of internal and external behavior of a man in the field of sports is called psychology in sports (By wanton). The external behavior is the expression of thinking and movement. But the internal behavior is the expression of feeling. This behavior are also called respectively as overt behavior and co-overt Behavior.

It is entirely being recognized that accomplishments in sports is only depend on health, physical education training practice, schedule, genetic factors, quality experience but also psychological factor. The training and physical preparation of bodies have been emphasized for a long time but new mental preparation and right attitude of athlete are as know ledged at strong underlying components for success. The psychological theory which are highly relevant to human performance in physical activities may not justify the situation in top level sportsmen/ sport, competitive sports. So it became very much necessary to understand more about sports and psychology of sport/sportsman. So stimulus associated with right response. This theory is very useful to a coach that how the condition of stimulus (effect of exciting or feedback) and how they will give to the play to change into right response.

* Grade- I Gymnastic Coach, Sports Authority of India, Department of Sport and Youth Welfare, Bilaspur (Chhattisgarh)

INTRODUCTION

The term psychology is the combination of two Greek word i.e. 'Psyche' and 'Logos' which mean 'mind' and 'study' respectively hence psychology can be regarded as the study of mind however it was difficult to study mind because it was an abstract concept which could neither be touched nor seen by the people. The later development which took place in psychological area of science indicated that since the activities of mind are reflected in our behavior, they can be observed and studied scientifically. The mind can be read through the behavioral ministrations of the individuals. So with the passage of time psychology become "science of Behavior". The behavior which is both internal and external as a whole. The inner subjective feelings and various psychophysical changes form the part of internal behaviors whereas the overt bodily actions, gestures, postures, vocal expressions etc, constitute the external behavior of the individuals. There are three components of behaviors of the individuals. There are three components of behaviors namely cognition (knowing) Conation (doing) and Affect (feeling). All these components of behaviors can be studied with the help of various psychological method, Questioning method, Experimental method, Testing method Introspection method.

If the study of behaviors is restricted to general populations only it remains general psychology but when it covers a particular group or situation and utilizes the general psychological concepts for practical purposes in some specific field of activity then it becomes practical or applied psychology. As is the case of sports. Then we apply various psychological principles laws and concepts in sports situations then it becomes-sports Psychology. To be more comprehensive we can define sports psychology as a "Science of Behaviors of those involved in the field of sports" which means that in sports psychology we study not only the sport man and women but also those people who are directly or indirectly involved in sports situations. These people may be coaches mentors, planners, organizer of game, audiences and so on.

Psychology can be defined as the study of soul in Greek word. The psychology can be divide into (soul) and logos (Study). The Psychology is the study of mind, consciousness and should.

The psychology deals with knowledge of behavior and it is psychological means psychology is necessary for a coach. The psychology tells us about the old knowledge mental condition of a player coach and judge. The coach can judge that player is the fit for which game.

Sport

Sports All physical activity which we can face, is called sport. It may mentally or physically. Sports is also related with the evolution of man and other motor quality, related to sports. Through the sport we can develop the personality of a man.

Sport Psychology

The origin of sports psychology as a scientific field can be traced back to the year 1965 when a Roman psychiatrist Prof Ferocious founded the international society of sports psychology in Italy. There after the sports psychology has grown a great deal and spread in various countries of the world. However lot remains to be done to establish sports psychology as a separate scientific discipline like other well established branches of applied psychology.

With the advent of various sports Sciences as helping measures for athletes to attain peak level performance in competitions, sports psychology is gaining increasing importance amongst all because in modern competitive sports the competitions at some points highly depend on the psychological capacities of the athletes.

Though sports psychology as a science is in its infancy yet it has already made its marks which are being further taken ahead by the sports conscious countries in the world.

The sports psychology can offer many important helps to coaches and athletes for psychological preparation of high level competitions it can help during training also where the training schedules can be made according to the individual psychological make up of the athletes. It can help in reducing presumptive tensions through the psycho regulatory procedures. It can suggest the ways and means for motivating athletes for giving maximum performance. Various psychological tests can assist the selectors in selecting the probable of right temperament, intelligence, confidence and other desirable psychological qualities of proposing athletes.

The knowledge which applied in the field of sports, is called sport psychology. The sport is a psychological activity. In modern society takes more interest is psychology of sports. When a sport man try to win a competition, there are some right type of attitude and motivation is required. The psychological optical plays an important role in good performance in sports.

The sport psychology is the modern branch of psychology. It is more advanced in western country like G.D.R. This sport psychology is essential teaching to every national team. The modern psychology is the study of internal and external behavior of a man in the field of sports is called psychology in sports (By wanton). The external behavior is the expression of thinking and movement. But the internal behavior is the expression of feeling. This behavior are also called respectively as overt behavior and co-overt Behavior. Other psychologist have given the different definition about sport psychology, are given below as –

The role or psychology in sports has given has given to a new branch of psychology is called a sports psychology. Sport psychology is a recent researched branch of modern science of sports according to.

According to John's Lather - Sports psychology is an area which attempt to apply psychological fact and principal of training, performance and associate with human behavior in whole field of sports.

Robert N. Singer says that sport psychology explains ones behavior in athletes.

Dr. Ghose defines sports psychology as “the science of athlete is mind and its faculties.

Krishna Moorthy & Pham Shan arm : Sport psychology deals with psychology of athletes both at rest and in action.

Sleet(1973) :The discipline of psychology of sports is by no means limited to study of athlete or behavior in athlete competition. Sport psychology research is also interested in acquiring knowledge regarding, crowd behavior, rehabilitation and therapy though physical activity, motor skill, acquisition. Play group dynamics, readiness, prop reception, motor deductibility, body image, personality and physical ability and phenomena of movement.

The definition of sports psychology as given by American sport psychologists like john D. Leather and Robert N. Singer explains the definition pull forward by steel indicate

that sports psychology is not limited to study the behavior of athlete and to motor learning. It covers the many things in psychology of sports.

Herbert Hag : A well expert in sports pedagogy states that sports psychology has two part.

1. Psychology of motor learning.
2. Psychology of sports.

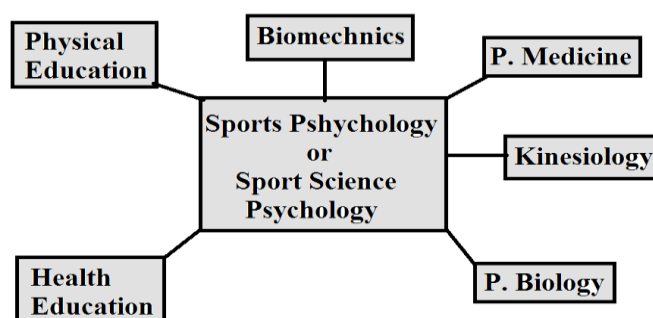
According to him psychology of motor learning will cover the study of the psychology in term of which skill, knowledge and attitude regarding sports, are acquired and retained or learned yet mote specially. It considers the neurological conception of this process, developmental, perceptional and motor behavior. As kinesthetic and performance, general method of instruction and law, and principal of learning appreciate to psycho motor skill. On the other hand, the psychology of sports examines the psychological variables of personality. Motivation, intelligence and emotional status as they effect or are effected by sporting activity i. e. It consider the relationship of such variables to participation success pattern in sports.

We may also consider the similar opinion expressed by Dr. H. T. A. Whiting in 1972 who status that sport psychologist might approach his study of behavior in sport situation in different whys, dependent upon the training interest, facilities and in elevations. Two main area suggested by him.

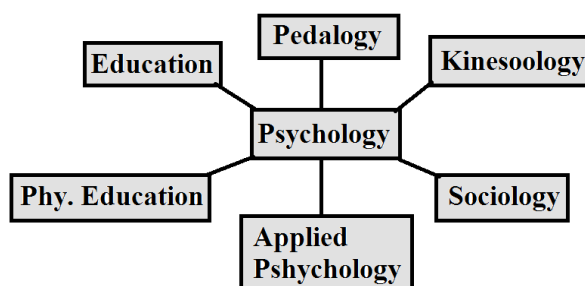
1. Skill learning and performance.
2. Competition.

He also states that sports psychology is not only interested in high level performance but he is primary concern with some behavior in competitive situation also. Thus the psychology of sport competition represent frame work into which much of what has been said, might be fitted. Although these may be genetic predispositions which effect the development of such behavior. It is primary out come of learning occupations a central position within psychology and competitive behavior. As a learned phenomena is legitimate area of study for psychologist in general and sports also.

To conclude, it can be said that sports psychology has become an important branch in the field of sports science. The sport science has been used into a great extent from the last few years. Sports science is a recognized as an independent science in European Science department. And the expert in European country consider the sports psychology as one of the sport science like sport medicine, sport Biology kinesiology, Biomechanics, physical education and health Education. The different branch of science have been shown as systematic diagram below-



Sports psychology is a independent branch of sport science has occupied a position of importance in these days and research work has started in this field of sports. The research in the different area of sports psychology has drawn strength from diversifies view points conversed by many discipline like as psychiatry, applied psychology, Education and pedagogy, physical Education, sociology and kinesiology.



Sport psychology is one of the sport science which deals with motor learning and psychology of competition or sp. Psychology is theoretical field of sport science that deals with the possibilities and boundaries of psychology through sports.

SCOPE OF PSYCHOLOGY IN SPORTS

It recent year, psychologist have been working on many diverse problems in the various folds. The knowledge of psychology is being used in the military organization, not only for the requirement purpose. Bur for modern warfare technique and teach is. In industries, it is role being emphasized for the effective organization as well as for more productivity. Similarly in field of sports, its importance can never be over estimate not only for preparing the athlete / player for appetitive sports, but its very essential for becoming a good coach.

In sports, we finds many problems which are fascine by our playas/athletes which are of psychological in nature, e.g. problem related with –

1. Education reconditioning.
2. Motivation technique for learning new skill in playing field.
3. Psychological preparation for a contest and hazards evolved in it.
4. Teaching and coaching method.
5. Motivation for peak performance.
6. Perceptonal development and the learning of movement pattern.
7. Relationship or personality traits to athletes progress.

To obtain the scientific information containing these problems of motivation motor learning emotional evolvemnts, perceptonal development and theory of personality. We have to look after forward to the knowledge of psychology. We have to study need and drives feeling and emption. Reflexes and reactive time, anxiety, and aggress ness, sensation and perceptions, principles of transfer of learning and many other psychological phenomena in the field of sports.

Sports being a psychosocial activity leaded with competition and co-operative spirits gives rise to psychological stress and strain. Exoterically when a athletes has to face an unexpected defect. The coach with the help of psychological knowledge would train the

athlete to handle such a situation in a true sportsman spirit. The training should induce in the player the skill of adaptability to the psychological stress and strain emotional problem can be handled. So that the players can face situation in realistic manner and proper spirit.

A coach has to plan and arrange his training activities in accordance with same established psychological principle. Any good coach has to apply the psychological principles –

1. To understand, accept and help each player.
2. To state their goal, targets and expectations.
3. To adopt the training method and practice period according to individual players needs interest and ability.
4. For establishing rapport with athlete and player.
5. To Give each Player a sense of fitness, both physically and mentally.

The field work of sports can greatly benefit from the knowledge gained from the various area of psychology. The coach as well as the others who are interested in improvement of athlete performance have to face such questions.

1. How can highly skilled performance be developed.
2. What factors should be emphasized to enhance the learning situation.
3. What factor of growth and development need to be considered.
4. What is role of personality, Profile or specific traits in contributing to outstanding achievement.
5. What are the main area where experimentation in sports is needed.
6. How the interpersonal and social relationship between the individual players in the same group effect the performance of the team.
7. What type of psychic problem occurs in the field of sports.

To answer these questions, one has to take the help of knowledge of various area of psychology. How sports is related with the various area of psychology is shown through following diagram.

The psychology of learning investigators, learning process and the various factors evolved in it. It is also attempt to provide a basis of learning. Principles such as motivation, retention acquisition, reinforcement and transfer of training. A definite need arise for coach to learn, learn and apply the research and concept because these factors operate the skill performance.

The knowledge of social psychology supply information on the social dimensions of human behavior i.e. How attitude, and value forms the nature of group dynamics and effect of group individual's behavior. The sport situation where people from various social and economic background are involve, is one of the most unusual phenomena of our times. The socio-metric technique help the coach to assess the group structure of his team and to bring the group cohesion. If it is lacking.

The developmental psychologist is interested in the origin of behavior in heredity and environmental factors and its intention. He also studies the behavior of infants, children adolescents, young adult in relation to their physical and mental social, emotional growth and developments. Any coach dealing with a group of athlete and player should aware of the characters that associate with his teams age group. He should provide the training to technique according to their maturational levels.

The clinical psychologist is involved in understanding personality, disorder, intellectual, determination, as well individual difference in behavior. He studied the emotional problem of individual and also diagnosed the mental illness of various type sports evolve situations which are full of emotional hazards. The athletes and players faces situation which are full of frustration, conflicts, disappointments, anxiety, fear and aggression. How to recondition those emotional problem. A coach has to seek the help of clinical psychologist.

The research of these psychologists provide a basis for understanding and predicting behavior of sportsman at various age level. This knowledge help us know about –

1. Psychological conditioning of sportsman.
2. Psychological preparation of athlete or player as motor learning or skill equitation.
3. Psychology of oceanic which effect the performance of sportsman/player.
4. Personality traits of sportsman and their relationship with sport performance.
5. Psychological causes of Peak performance and psychological effect of top performance of the player.
6. Psychological principles applied in the field of sport and physical education.
7. Psychological aspect of sport training.

REFERENCES

- Alderman, R. B.** Psychological Behavior in Sport , Philadelphia : W. B. Saunders Company, 1974.
- Butt, Dorcas Sushan.** The Psychological of Sport : The Behavior, Motivation, Personality and Performance of Athletes, New York : Van Nostrand Reinhold Company, 1987.
- Martens, Rainer.** Coaches Guide to Sport Psychology, Canada: American Publishing Company, 1983.
- Straub, William F.** Sport Psychology : An Analysis of Athlete Behavior, New York : Movement Publication Ithaca, 1980.
- Silva, John M. and Weinberg, Robert S.** Psychological Foundation of Sports, Champaign Illinois : Human Kinetics Publishers, 1984.
- Singer, R. N. Murphy, M. and Tennat, L. Keith.** Handbook of Research on Sport Psychology, New York: Mac Millan Publishing Company, 1993.

SPORT PERFORMANCE, SPORTS SCIENCE & COACHING

Dr. Gulbahar Khan * Devarshi Kumar chaubey**

ABSTRACT

Over the years, sport science has mainly been viewed by coaches as inaccessible, too technical, or in many cases, non-applicable to the actual sport setting. The field of coaching, however, is multidisciplinary and would benefit from the services that sport science has to offer to optimize the athletic environment. With the recent number of athletic deaths being attributed to the competitive environment, and rising concern for player safety, these brief, sport-specific instruments would allow coaches and athletic departments the opportunity to assess accurately an athlete's response to acute physical demands that could be used to monitor the influence and efficacy of various sport programs on subsequent rate and severity of injury. It is the marriage of sports science and coaching that will allow today's athletes to not only excel and compete at much higher levels but also allow the athlete to prevent injury and maintain a much healthier career.

* Assistant Professor, Noida College of Physical education Noida (U.P.)

** Research Scholar, Department of Sports and Physical education, Sarguja University, Ambikapur (CG)

INTRODUCTION

The athletes of today, whether recreational or elite, run and swim faster, throw farther, and jump higher than their competitors from the past. These improvements have been attributed to several factors related to smarter nutrition; a greater understanding of biomechanics of sport movement, better training techniques, advances in psychological support, and improvements in coaching education. Continuing efforts to extend laboratory research into the sport-specific field setting have resulted in the identification of several variables deemed necessary for successful performance in several sports^{1,2}. The adoption of this marriage of 'science and sweat' has been slow for a variety of reasons. Typically, sport performance testing has been expensive and limited to facilities at the elite levels of sport, generally out of the general public's reach and the every day coach's budget. However, because of a greater focus on prevention of injuries and on enhancing performance at the younger levels of play, the opportunity to combine cutting-edge sport science technology with the traditional field and court assessment has never been easier, and is much more readily accessible to today's progressive thinking coach. This article describes and revisits some scientific areas and tools to add to a coach's present arsenal of tests, and discusses the advantages, complexities, and pitfalls to avoid in this continually evolving area of sport science.

Biomechanical analysis

Coaches and athletes have traditionally used video cameras and videocassette recorders (VCR) to scrutinize and improve their performances. Today, computers and high-tech devices are available to retrieve, analyze, replay, edit, and print the desired performance into a three-dimensional (3D) stick figure image that is analyzed from different angles without the need for a VCR. An endless number of athletic movements can be digitally assessed in the indoor, outdoor, or underwater environment. This PC-based program and display gives the coaching staff another way to examine objectively stroke patterns, center of mass, reaction/response time, change of direction, stance, symmetry of gait, and optimal angles and velocity of movement from module systems consisting of multiple cameras, synchronized force platforms, and electromyography (EMG) analysis. As well as enhancing

sports performance, these computer-generated figures can be used to analyze how injuries occur and, most importantly, how sport trauma can be minimized.

The key is the ability to merge both the experience of the coach with the objectivity of the analyzed sport movement to create a plan for athletic enhancement. There are numerous sport skills that have been successfully analyzed. These include the soccer kick, softball and baseball hitting, the football pass, the golf swing, and of course, baseball pitching. With the recent advent of smaller digital cameras, a more accurate evaluation through biomechanical analysis will allow injury prevention to come to the forefront. Not only will the athlete have the advantage of immediate analysis through computerized re-enactment, but will also have printed hard copies that will enhance the diagnostic and prescriptive value of filming for more efficient training.

Sport Performance Testing

Another relationship to performance enhancement is that of sports physiology/exercise performance testing. To be competitive, the key is to select tests that provide information specific to the particular sport, position, or event.³ Coaches should consider important test components including indirect calorimetry, anaerobic testing, body composition assessment, range of motion (ROM) testing, pulmonary function evaluation, nutritional analysis, electrocardiographic work-up, and total blood chemistry as adjuncts to the training regimen and weight room assessment.

Indirect calorimetry involves the athlete running on a treadmill during respiratory and metabolic gas analysis, with results providing information on an athlete's peak aerobic power (VO₂peak), endurance capacity, anaerobic threshold (AT), and ventilatory response. Anaerobic testing provides information on an athlete's peak power (PP), mean power and capacity to maintain a workout load (MP), and the rate of decline in power, also referred to a fatigue index (FI) during a competitive challenge. Since decreased muscular strength and excess body fat has been shown to compromise health, and decrease performance in many sports requiring endurance, quickness, flexibility, and agility,^{4,5,6,7} body composition assessment can provide feedback on lean body mass (LBM) and percent body fat. Range of motion (ROM) testing, typically reserved to injury rehabilitation, is especially useful prior to

the season to obtain information on an athlete's degree of flexibility, to detect any deficiencies in bilateral symmetry, and to identify musculoskeletal restrictions that could lead to injury.

Services that are readily attracting coaches are the evaluation of pulmonary function, nutritional analysis, electrocardiographic work-up, and total blood chemistry. Pulmonary function analysis can provide information on the athlete's lung capacity, ventilatory efficiency, and the potential for pulmonary obstruction such as asthma. Computerized nutritional analysis allows the sport scientist to recognize over 2,000 foods grouped into 22 categories that an athlete may consume during any season. A simple 3-day written recall provided by the athlete allow food portions to be entered using an unit of measure, and can succinctly provide feedback on the athlete's caloric intake, quality of the diet, nutritional excesses and deficiencies, and recommended daily allowance (RDA) for vitamins and minerals. A simple, preseason 12-lead electrocardiographic work-up involves checking the activity of the athlete's heart at rest, during a running challenge, and throughout recovery. Results provide information on status of cardiac conduction, assist in identifying cardiac abnormalities, and aid in determining the health risk status of the athlete's heart. Total blood chemistry can detect anemia, electrolyte imbalances or underlying preventable health problems.

By defining these parameters, one can make some predictions regarding performance capabilities, assess an athlete's predisposition to injury, critically review the effect of current training protocols, and provide the coach with additional insight and a competitive edge over those programs relying primarily on subjective criteria.⁸ These tests are supervised by sports medicine physicians, sport physiologists and other sport science personnel, and are generally available from exercise and sport science programs on most university campuses to assist coaches from the collegiate to youth sport levels of competition.

Sport Psychology Assessment

One of the focuses for the future in sport psychology will be the increasing use of athletic personality profiling. Athletes involved at all levels of sport experience unusually high levels of expectations and physical challenges within a short span of time. The

psychological stress is exacerbated with the need to learn play systems quickly, move up on the depth charts, and establish themselves with the coaches and teammates going into the competitive season. Significant life-changes and continual daily stress of this magnitude have been linked to sport injury in both contact and noncontact activities.^{9,10} As the stress mounts during practice, an athlete loses the ability to think clearly. This may result in irrational risk-taking, inadequate attention to coaching, and inattention to fundamental skills required to perform successfully and safely during competition.^{11, 12}

Various psychometric instruments such as the Athletic Coping Skills Inventory (ACSI), the Profile of Mood States (POMS), and the Sports Inventory for Pain (SIP) have been utilized by an increasing number of sport scientists, medical personnel, and coaches to assess coping skills, motivation, self-esteem, pre-competitive anxiety, and mood relevant to sport. In regards to sport trauma and rehabilitation, coaches and athletes have consistently mentioned a strong relationship between level of pain and physical/psychological dysfunction in several studies. Others have reported that strategies for coping with pain (i.e., diverting attention, ignoring pain) were associated with the ability to function physically and psychologically. Therefore, an athlete's attitude toward pain and the strategies he or she uses while experiencing sport pain may subsequently be reflected in his or her level of athletic performance and adherence to prescribed medical care.¹³ A coach taking a proactive approach through psychological assessment to better understand an athlete's response to injury prior to actual trauma, rather than simply attributing physical trauma to the inherent nature of contact sports, would enhance the opportunity to avoid risk factors to athletes. Although the use and validity of such instruments for use in athletic selection have been questioned in the scientific literature, it appears that a consensus is growing supporting the successful utilization of these instruments under certain conditions to predict athletic performance and avoid injury.¹⁴

Numerous studies have indicated several areas that would benefit both athlete and coach as a result of utilizing sport psychology assessment. These include substantiating an athlete's present mind-set to maintain areas of success and focus on areas to improve, identification of potential overtraining, assessing response to sport injury, and monitoring psychological demands of injury rehabilitation. Other benefits include allowing for more

effective teaching of anxiety management, mental preparation, and other coping skills,^{15,16}

Testing Considerations

In order to utilize effectively the available sport science support, coaches should keep several things in mind. Communicate with the sport science staff and select testing variables that are relevant to your particular sport. The mode of testing, the rate of motion, the physical resistance selected, the specific muscles used, and the range of motion experienced by the athlete should closely imitate the actual sport¹⁷ Tests should be challenging, but not to the point where test termination is effected by excessive body temperature, dehydration, or fuel depletion. Select testing techniques that are valid and reliable, rather than based simply on familiarity or tradition, and insure that tests are conducted in a safe and productive atmosphere to optimize player safety, concentration, and instruction. In addition, both the coach and the sport science staff must ensure that valid and appropriate feedback is provided the athlete is in a timely manner by those he/she trusts. Finally, the human rights of all athletes during testing must be respected.

REFERENCES

- Anderson M. B, & Williams J. M.** "A model of stress and athletic injury: prediction and prevention". Journal of Sport and Exercise Psychology 10 (1988) : 294-306.
- Anshel M. H.** "Qualitative validation of a model for coping with acute stress in sport" . Journal of Sport Behavior 2001; 24(3): 223-246.
- Crossman J.** "Psychological rehabilitation from sports injuries". Sports Medicine 1997; 23: 333-339.
- Goreman K.** "The use of talent-predictive factors in the selection of track and field athletes". In Gambetta V (Ed.), *The Athletic Congress's Track and Field Coaching Manual*. pp. 31-36. Champaign, IL: Leisure Press, 1989.
- Hergenroeder A.C. & Klish W. J.** "Body composition in adolescent athletes". Pediatric Clinics of North America 1990; 37: 1057-1083.
- Katch FI, McArdle W.D, Czula R, & Pechar G.S.** "Maximum oxygen intake, endurance running performance, and body composition in college women". Research Quarterly 1973; 44: 301-312.
- Meyers MC, Sterling J.C.** "Physical, hematological, and exercise response of collegiate female equestrian athletes". Journal of Sports Medicine and Physical Fitness 2000; 40: 131-138.
- Muller E, Benko U, Raschner C, Schwameder H.** "Specific fitness training and testing in competitive sports". Medicine and Science in Sports and Exercise 2000; 32(1): 216-220.
- Terry P. C.** "The efficacy of mood state profiling with elite performers: a review and synthesis". The Sport Psychologist 9 (1995) : 309-324

GUIDELINES FOR AUTHOR

The Indian Journal of Physical Education, Sports and Applied Sciences is a quarterly journal publishes scientific research and review articles on sports and sports science disciplines and other such subjects having inter-disciplinary perspective with specific application to sports.

Manuscripts are accepted for publication with the understanding that they have not been published, simultaneously submitted, or already accepted for publication, elsewhere.

Manuscripts deemed suitable are acknowledged and critically reviewed by a qualified, independent, expert evaluator, through a secret evaluation system. The evaluator's comments may be communicated to the principal author along with the comments of the Editor.

All the manuscripts are to be submitted by the principal author to the Editor-in-Chief/Editor, Indian Journal of Physical Education, Sports and Applied Sciences by e-mail as well as on mailing address along with a letter of intent for publication. This covering letter should also contain the following certificate:

"It is certified that this article is my/ our own original research work which has not been published, simultaneously submitted, or already accepted for publication, elsewhere.

"I have the consent of the co-authors for this submission and I/we transfer the ownership of the copyright to the publisher, in the event of publication of this article."

The covering letter should contain a complete mailing address of the principal author. The Editor-in-Chief/Editor may acknowledge the receipt of the same, as well as, handle all future correspondence.

Manuscript Preparation

All parts of the manuscript should be typewritten, double-spaced, with margins of at least 3 cm on all sides. Number manuscript pages consecutively throughout the paper. Each manuscript should include title page, the second title page and text, and may contain up to 20 pages. Authors should also supply a shortened version of the title suitable for the running head, not exceeding 50 characters with spaces. Each article should be summarized in an abstract. Abstracts should be accompanied by three to five keywords that will facilitate indexing and data retrieval purposes.

The title page should contain the title of the study and the names, qualifications, employment status, the employing institution and the place and state, of all the authors. The title being brief, should not contain the words like 'A Study Of' or 'A Probe into' etc.

The second title, the page following the title page should contain the title of the study, abstract and key words. The numbering of pages should begin here. The third page should contain the text including introduction, methodology, results, discussion, conclusion, and references. All these heads are to be typed on the left hand in upper lower type, in case there are no subheads like purpose of the study, review of literature, hypotheses, and limitations of the study and its implications. When there are sub-heads, the heads are to be typed in all capitals and the sub-heads in upper-lower type letters. Abbreviations must be spelt.

Abstract

The abstract should be self-explanatory, of about 150 words; suitable for use by the abstracting journals, without rewording and should state what was aimed, what was done, what was found and what was concluded. For the review article, the abstract should be a concise summary.

Keywords

Following the abstract, the author should list not more than six key words that do not appear in the title, that represent the content of the manuscript.

Introduction.

This describes the present state of knowledge of the subject or the review of the literature, the concise statement of the problem, the aim of the research, and the development of the research hypotheses. It should include the practical and applied questions around which the study was developed.

Methodology

This section should include a complete description of subjects, materials, equipments, procedures and experimental techniques. It should also include the description of the statistical methods used to analyze the data. The methods and the statistical procedures published in detail before hand should be cited. Units of measurement, symbols and abbreviations must conform to the international standards. Metrics system is preferred.

Results

This section should include a concise presentation of the data. Figures, tables and photographs may be used to show the results of the study. Tables and figures should not be used for the presentation of the same

data. The subjects must not be identified by name or any other recognizable label.

Discussion

The discussion part should contain the interpretation of the results with possible comparisons with other relevant studies. The discussion must be rigorous and correspond to the data and the hypothesis. New-hypothesis, if any, may be stated. Recommendations, if any, question of practical application, consistent with the limitations of the study, may be included.

Conclusion

This should briefly state the conclusions drawn from the study. Conclusions should not be drawn without any supporting data.

References

All sources, cited in the text, must be also cited in the reference list. The reference list includes circulated material, i.e., books, journal, proceedings, films, etc.

Tables

Each table should be typed on separate sheets, numbered consecutively in Roman numerals at the top centre, and given collectively after the references. Each table should have a brief but meaningful title which should start next to the Table Number after colon. Explanatory matter and non-standard abbreviations should be given in the footnote, and not below the title. Tables should be referred in the text.

Illustrations

All figures and illustrations should be either artwork in black ink on Art Card or 5" x 7" glossy prints. The photographs should be glossy black and white having good contrast. The letters used in the illustrations and photographs should be of sufficient size to withstand reduction to single column size. Figures should be numbered in Arabic numerals. Captions of photos and illustrations and the legends should be typed on a separate sheet. All

illustrations must be identified on the back by gently writing in ink or pencil, indicating illustration number and the author.

Art work should be done professionally, Art work carried out by the publishers, out of necessity, would be charged to the authors.

The authors must send a CD containing the material meant for publication, to facilitate printing.

**CHECK LIST OF THE DOCUMENTS TO BE SUBMITTED BY THE
INVESTIGATOR**

- 1. Individual Subscription form**
- 2. Hard copy of the original Manuscript**
- 3. Soft copy of the original Manuscript**
- 4. Copyright Transfer Statement**
- 5. Subscription Fees in the form of Demand Draft of Nationalized Bank.**
- 6. Manuscript of the research paper will be typed in M. S. Word 2003**
- 7. Follow the other instructions as given in Guidelines for the author.**

**INDIAN JOURNAL OF PHYSICAL EDUCATION , SPORTS AND
APPLIED SCIENCES**
INDIVIDUAL SUBSCRIPTION FORM

Full Name (in capital letter).....
 Designation.....
 Academic & Professional Qualification.....
 Institute/ organization where employed.....
 Address for correspondence.....
 :.....
 Permanent Address.....
 :.....
 Telephone. No.(O) :..... (R) Mobile.....
 E-mail Address/web site :.....

Kindly subscribe me the Journal,. I hereby enclose DD of Rs.....Number.....Dated.....for subscription. I agree to abide by rules of the Indian Journal of Physical education, Sports and Applied Sciences.

Date.....

Signature

REVISED SUBSCRIPTION RATES

(W.e.f. from January, 2012 to onwards)

Types of Subscription	One Year (Rs.)	Two Years (Rs.)	Three Years (Rs.)	Five Years (Rs.)	Life Time (Rs.)
Individual	1000	1800	2500	4500	10, 000
Institutional	1500	2800	4500	7000	15, 000

Note : Those author' paper published in this Journal, processing fees of Rs. 500 (Rupees Five Hundred) including postage will be charged from main author and co-authors separately.

PAYMENT:All the payment should be made in favour of Rajkumar Sharma in the form of demand draft from any nationalized bank payable at Bilaspur (Chhattisgarh), India. The research paper for publication may please be sent in duplicate alongwith CD in the Name of Dr. Rajkumar sharma Editor-in Chief JPESAS, 284/1, In font of Main I. T. I. Gate, Near-Evergreen Nursary, Centre Koni, Bilaspur (Chhattisgarh) 495009. India.

Dr. Rajkumar Sharma
Editor-in Chief

**INDIAN JOURNAL OF PHYSICAL EDUCATION , SPORTS AND
APPLIED SCIENCES**
INSTITUTIONAL SUBSCRIPTION FORM

Name of Institute/ organization

Address

.....Pin.....

Telephone. No.(O) :.....Mobile.....

E-mail Address/web site:

Subscription for the Purpose of Library/Advertisement of the Institute/
organization.....

Kindly subscribe me the Journal,. I hereby enclose DD of
Rs.....Number.....Dated.....for subscription. I
agree to abide by rules of the Indian Journal of Physical education, Sports and Applied
Sciences.

Date.....

Signature & Seal of Institute/Organization

Place.....

REVISED SUBSCRIPTION RATES

(W.e.f. from January, 2012 to onwards)

Types of Subscription	One Year (Rs.)	Two Years (Rs.)	Three Years (Rs.)	Five Years (Rs.)	Life Time (Rs.)
Individual	1000	1800	2500	4500	10, 000
Institutional	1500	2800	4500	7000	15, 000

ADVERTISEMENT TERIFF

(W.e.f. from January, 2012 to onwards)

Full Page Coloured	Half Page Coloured	Full Page (Black & White)	Half Page Black & White)
Rs. 15000/ (For 4 issue/ Year)	Rs. 10000/ (For 4 issue/ Year)	Rs. 10000/ (For 4 issue/ Year)	Rs. 5000/ (For 4 issue/ Year)

PAYMENT: All the payment should be made in favour of Rajkumar Sharma in the form of demand draft from any nationalized bank payable at Bilaspur (Chhattisgarh), India. The research paper for publication may please be sent in duplicate along with CD in the Name of Dr. Rajkumar sharma Editor-in Chief IJPESAS, 284/1, In font of Main I. T. I. Gate, Near- Evergreen Nursary, Centre Koni, Bilaspur (Chhattisgarh) 495009. India.

Dr. Rajkumar Sharma
Editor-in Chief

COPYRIGHT TRANSFER STATEMENT