International Journal of Physical Education and Sports Sciences

Vol. V, Issue No. I, April-2013, ISSN 2231-3745

A STUDY ON ANALYSIS OF SELECTED BIO MOTOR PHYSIOLOGICAL AND PSYCHOLOGICAL PARAMETERS OF SPORTS HOSTEL PLAYERS

AN INTERNATIONALLY INDEXED PEER REVIEWED & REFEREED JOURNAL

www.ignited.in

International Journal of Physical Education and Sports Sciences
Vol. V, Issue No. I, April-2013, ISSN 2231-3745

A Study on Analysis of Selected Bio Motor Physiological and Psychological Parameters of Sports Hostel Players

Manoj Kumar

Abstract – Sports in the present day have become extremely competitive, previous records are being broken whenever there is competition. It is not mere participation or few days practice that brings an individual victory, but the continuous hard work of training right from childhood, a strong anthropometry variables may influenced.

Today's sportsperson faces some unique challenges. The standard is higher, the competition is tougher and the stakes are greater attention in these days. Coaches, physical educationists and sports scientists have always expressed a great need to know more about the performance related variables which are helpful in improving the motor skills of the players.

----------♦----------

INTRODUCTION:-

Today's world is a competition, the rivalry to reach top and excel each other is so much. Every aspect that contributes for the excellence is carefully looked in and one of such aspects is the selection of the right person for the right event in sports and games, during witch normally a choice of selection is given to that the player or the athlete. The players without knowing their inherent potential make wrong selection suiting to the individual concern and are not able to reach the top of the ladder of sports arena.

Man by nature, is highly competitive and in pursuit of performance he has always been striving to jump higher and farther, to run faster and to demonstrate greater strength and skill. Physical fitness places emphasis on more and more activity.

The preparation of an athlete today for achievement is a complex dynamic matter, characterized by a high level of physical and physiological efficiency and the degree of perfection of necessary skills, knowledge and proper teaching and tactics. An athlete arrives at this state only as a result of corresponding training sports activity directed at steadily enhancing the preparation of an athlete and grooming him for a higher level achievement.

The physique and body composition, including the size, shape and form are playing significant role to enhance sports performance. The performance of sportsman in any game or event is also dependent on his suppleness, skill training, motivation and various physiological and bio-mechanical nature. Age, sex and physical growth have also been noticed to influence a person's capacity for physical activity.

Games and sports as a part of human education have always existed in the human society. Before the dawn of civilization and culture, physical exercise was very important aspect of human existence. In the primitive society, the "necessity for survival" motivated man to keep himself more physically fit and strong enough in comparison with stronger forces for nature (Kamlesh, 1981).

Sports is as old as the human society and it has achieved an universal recognition in the modern times. It now enjoys a popularity which outstrips any other form of social activity. It has become an integral part of educational process. Millions of fans follow different sports events all over the world with enthusiasm and devotion. Man participates in activities for the fun of it, for health, strength and fitness. It faces the shape of a profession to some sportsman with high skills and ample financial benefits linked with high degree of popularity **(Sergio, 1976)**.

The field of physical education and sports are international discipline. They develop international understanding and universal brotherhood amidst the present politically conflicting lives. Sports movements are considered one of the major adhesive forces for developing world peace. It is identified as one of effective means of strengthening national integration and developing national identity. Sports have become the media of international relationship among the countries.

Motor ability is one of the important aspects for physical activities. A totally fit individual must have the motor ability. The components of motor ability are speed, endurance, explosive power, agility, co-ordination (Reaction time, Movement time, Flexibility), strength (Grip strength, Leg Strength, Shoulder Strength) etc., Motor ability reflects an individual's present ability to perform motor skills.

Sports activity beaing a physical activity which is not possible without these motor qualities.

Motor ability has been defined as, "The present acquired innate ability to perform motor skills of general or fundamental nature exclusive of highly specialized sports or gymnastic techniques" (**Harold, 1977)**.

Scott and French are of the opinion that "a motor ability test has value in estimating an individual's expected level of ability in a new activity" **(Robert, 1976)**. It is felt that when someone does better in a given sport than indicated on the motor ability test and it is because of extreme efforts, motivation and the like. Normally a person is born with certain genetic features and ability that can be improved through learning.

Motor ability reflects an individual present ability. The immediate state of the individual to perform in a wild range of motor skills. Motor ability is a general quality that can facilitate more specific performances.

Almost all physical activities incorporate one or more of the elements of force, quickness, duration, and the range of motion. When a given exercise is required to overcome resistance it is called a strength exercise. When quickness and high frequency is maximized it is referred to as a speed exercise. If distance, duration or the numbers of repetitions are high, an endurance exercise is performed. On the other hand, if the range of motion is maximized a flexibility movement is being performed. And finally, when in a given exercise a high degree of complexity is required this is known as a co-ordination exercise.

Some athletes are more capable than others of performing such exercises. They are said to have "talent" for that type of activity. But this talent is largely genetic, it is rather inherited from one's family. Strength, speed, and endurance are inherited abilities which play the most important role in one's chances of reaching high levels of performance. Therefore they are called dominant motor or bio-motor abilities. The term "motor" refers to movement, whereas the prefix "bio" is added to illustrate the biological importance of these three abilities **(Bompa, 1999)**.

The development of a bio-motor ability has to be specific and very methodical. When a dominant ability is developed (e.g., strength), it has a direct or an indirect effect upon the other abilities (speed and endurances). Such an effect depends strictly on the degree of resemblance between the methods employed and the specifics of the sport. Thus, the development of a dominant bio-motor ability may have a positive or in rare occasions, a negative transfer. When an athlete attempts to develop strength there may be a positive transfer to speed, and to a certain degree even to endurance.

REVIEW OF LITERATURE:

Morrow et al., (1980) conducted a comparative study on women inter collegiate basketball players volley ball players and non-athletes. They took 330 women college students as the subject for this study. The subjects were 110 women from each of the above listed groups. Various anthropometric and performance characteristics were obtained on each subject's fat, weight, lean weight, height, sitting height, arm length,10 yards sprint time, upper and lower body isokinetic strength were measured. Athletes were found to differ significantly from non-athletes on all variables. It was indicated that basket ball players had lower sprint time and greater upper and lower body strength than volley ball players.

Grant (2001) compared these characteristics in three groups of females: Group 1 comprised 10 elite climbers aged 31.3 +/- 5.0 years (mean +/- s) who had led to a standard of 'hard very severe'; Group 2 consisted of 10 recreational climbers aged 24.1 +/- 4.0 years who had led to a standard of 'severe'; and Group 3 comprised 10 physically active individuals aged 28.5 +/- 5.0 years who had not previously rock-climbed. The tests included finger strength (grip strength, finger strength measured on climbing-specific apparatus), flexibility, bent arm hang and pull-ups. Regression procedures (analysis of covariance) were used to examine the influence of body mass, leg length, height and age.

Narayanan (2001) the findings of the study indicate that basketball players have better cardio-vascular endurance than volleyball players. Being basketball is strenuous game it needs endurance. Basketball players have to run all along the court. Basketball players showed better speed than volleyball players. Basketball is the fast game.

Then they are having better agility also but the explosive power is same for basketball and volleyball players. Both games needs these two (agility and explosive power) motor components as there play a predominant role in the execution of skills.

Joseph (1983) determined the relationship of power, agility shoulder flexibility, arm length and leg length to volleyball playing ability. Thirty male volleyball players of Lakshmibai National College of Physical Education (LNCPE), Gwalior, were selected as subjects. Power was measured by sergeant jump, agility by 40 mts.

shuttle run, shoulder flexibility by graded stick and arm length and leg length by steel tape.

Sridhar (1984) studied to determine the relationship of power agility, flexibility, muscular endurance and circulo-respiratory endurance to playing ability in volleyball. Thirty volleyball players of the Lakshmibai National College of Physical Education (LNCPE), Gwalior, acted as subjects.

Power was measured by sergeant jump and agility by side step test; flexibility by trunk flexion test, muscular endurance by pull ups and bent knee sit ups and circulo respiratory endurance by one minute lateral jump test. The playing ability was the subjective judgment of a panel of three experts for each subject. Product moment correlation was used to statistically analyse the data.

Meera (1984) conducted a study to compare the selected general motor ability components i.e. speed, agility, flexibility, muscular endurance, balance leg strength, arm and shoulder strength and co-ordination of women basketball and volleyball players. The subjects chosen were women basketball and volleyball players of Lakshmibai National College of Physical Education, Gwalior. Fifteen players in each game were selected and the components were tested on the players. The data collected in all the tests were statistically compared by using 't' ratio at .05 level of significance. The analysis showed that the women basketball players were comparatively superior to volleyball players in arm and shoulder strength. But there were no significant differences between the two groups in speed, agility, trunk flexion, abdominal endurance, balance, leg strength and hand-eye co-ordination.

RESEARCH METHODOLOGY:

The purpose of the present study was to analyze the selected bio-motor, physiological and psychological parameters between state government (SDAT) and central government (SAI) sponsored sports hostel players of different disciplines. To achieve the purpose of the study, thirty basketball (N=30), football (N=30) and volleyball (N=30) players were selected randomly from each state government sponsored sports hostels (SDAT) and central government sponsored sports hostels (SAI) with a total of 180 players.

The present study was undertaken primarily to determine the selected bio-motor, physiological and psychological parameters between state government sponsored sports hostel players and central government sponsored sports hostel players of different disciplines. As per the available literature, the following standardized tests were used to collect relevant data on the selected dependent variables and they were presented in the Table.

TABLE

TESTS SELECTION Sl. No	Criterion Variables	Test items/Instruments	Unit of Measurement
1	Cardio Respiratory Endurance	12 minutes Run/ Walk	In metres
2	Muscular Endurance	Bent Knee Sit-ups	In numbers
3	Flexibility	Sit and Reach	In centimeters
4	Speed	50 Mts. Run	In seconds
5.	Explosive Power	Vertical Jump	In centimeters
6.	Resting Pulse Rate	Radial Pulse Method	In numbers
7.	Breath Holding Time	Stop Watch	In seconds
8.	Respiratory Rate	Expirograph	In numbers
9.	Achievement Motivation	SAMT Questionnaire	In numbers
10	Sports Competition Anxiety	SCAT Questionnaire	In numbers
11	Aggression	Smith's Aggressive Questionnaire	In numbers

Many researchers have used these questionnaires for research. The questionnaire used by them was Sports Achievement Motivation Test (SMAT), Sports Competition Anxiety Test (SCAT) and Smith's Aggressive Questionnaire. There can be no better evidence to prove the validity of the questionnaire than this.

The investigator administered the questionnaire and other tests to measure the criterion variables to 180 male subjects. The investigator collected the data from the subjects before their matches during their rest time. The purpose of the study was clearly explained. The investigator explained the subjects about the uses of the question and meaning of each questions and how to fill the questionnaire. Care was taken to see that the subjects answered the entire questions. The filled up questionnaires from respondents were collected after checking whether all the items were responded.

ANALYSIS:

To achieve the purpose of the study, thirty players each from basketball (N1=30), football (N2=30) and volleyball (N3=30) were selected randomly from the state government sponsored sports hostels (SDAT) and central government sponsored sports hostels (SAI) with a total of 180 players.

The criterion variables selected for this study were cardio respiratory endurance, muscular endurance, flexibility, speed, explosive power, resting pulse rate, breath holding time, respiratory rate, achievement motivation, sports competition anxiety and aggression.

The data collected were statistically analyzed by using two way (2x3) factorial ANOVA. According to **Thomas and Jack (2001),** whenever the main purpose is lies in the interaction, it is sufficient to discuss the interaction effect only. Thus the interaction effect was only discussed for all the selected criterion variables and the main effects were not discussed. Hence, whenever the obtained F-ratio for interaction effect was found to be significant, the simple effect test was used as a follow up test. Since, two hostels and three different games were compared, whenever the obtained 'F' ratio value for the simple effect test was significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases .05 level of significance was fixed and considered to be appropriate in view of the fact that very highly sophisticated equipments were not used for more stringent level of significance.

CONCLUSION:

The following conclusions were drawn from the present study.

1. There was significant difference found between state government (SDAT) and central government (SAI) sponsored sports hostel players irrespective of the games on selected bio-motor variables.

2. The central government (SAI) sponsored sports hostel players showed better performance in selected bio-motor variables when compared to the state government (SDAT) sponsored sports hostel players.

3. There was significant difference found among basketball, football and volleyball players irrespective of the sports hostel players on selected bio-motor variables.

4. The football players showed greater performance in cardio respiratory endurance, muscular endurance, flexibility and speed when compared to basketball and volleyball players.

5. The volleyball players showed higher performance in explosive power when compared to the basketball and football players.

6. There was significant difference found between state government (SDAT) and central government (SAI) sponsored sports hostel players irrespective of the games on selected physiological variables.

REFERENCES:

- Ajit Singh, Sports Psychology. Delhi: Friends publication, 1992.
- Andrew Ted A. Bamgartner S. Jackson, Measurement for Evaluation in Physical Education. Dubaque Lowa, W.Mc. Brown Company Publishers, 1982.
- Anne Marrie Bird and Bernette K. Cripe, Psychology and Sports Behaviour. 1991.Bevery Miller Dugs. Comprehensive Approach to Nursing. Philadelphia: W.B. Saunders Company, 1983. Bill Jeffery, Soccer. New York: Corner Stone Library, 1970.
- Bompa Tudor O., Periodisation of Strength Training. Veritas Publishing Inc, 1996.
- Clarke H. Harrison., Application of Measurement to Health and Physical Education. Englewood Cliffs, New Jersey: Prentice – Hall, Inc, 1976.
- Clay rec, Jenson and Golden W.Schultz, Applied Kinisiology. New York: Mc Grew Hill Co., 1968.
- Clevne R. Jenson and Gordoa W. Shulty, Applied Kinesiology. Newyork: Mc Craw Hill Book Company, 1970.
- Charles A. Bucher, Foundation of physical Education. Saint Louis: The C.V. Mosby Company, 1968.
- Eva Lurie Weinreb, Anatomy and Physiology. London: Addison Wesley Publishing Company, 1984.
- Franks B. Don and Helga Deutsch, Evaluating Performance in Physical Education. London: Academic Press, Inc., 1973.
- Helina Grace, Kho-Kho: Teaching Methodology. Chennai: YMCA Publishers, 1999.
- Horn Thelma S., Advances in Sports Psychology. Champaign: Human Kinetic Publishers, 1992.