

Relationship of concentration and hand steadiness among lawn tennis players

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■ ABSTRACT

The purpose of this study was to determine the relationship between concentration and hand steadiness among lawn tennis players. Ten male subjects whose age ranged between 20-25 years were purposively selected from lawn tennis game. Concentration was measured with the help of electrical mirror drawing apparatus in seconds and hand steadiness was measured with the help of steadiness tester apparatus in seconds. To find out the relationship between concentration and hand steadiness, Pearson product moment correlation was used. Result showed that there was a significant relationship between concentration and hand steadiness (0.749) at .05 level of significant. So, it can be concluded that concentration and hand steadiness played a vital role among lawn tennis players.

■ **Key Words** : Lawn tennis, Concentration, Hand steadiness

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For centuries, man has found recreational pleasure in games that involves hitting a ball with a bat. There appears to be something innately pleasurable in the ability to make a ball fly through the air and, in so doing, defeating an opponent. The key is probably in that last phrase-“defeating an opponent”. Many ball games developed because they provided exercise for warriors and gave them skills that were necessary in battle (Fitz Gibbon II *et al.*, 1979).

Concentration refers to the intensity in which a player focuses his attention in terms of a width (broad-narrow) and depth (internal- external). Concentration is a term used in everyday language. In post-event interviews with high-profile athletes, a failure to concentrate is a commonly cited explanation for poor performance. Not surprisingly therefore, concentration is a concept the layperson feels that he understands immediately. However, improving concentration skills is not simply a case of trying harder to concentrate. It is a case of knowing what to concentrate on and focusing attention on these factors. Concentration is defined as ‘the process by which all thoughts and senses are focused totally

upon a selected object or activity to the exclusion of everything else. It is worth emphasizing here that concentration is a process that changes over time and that maintaining the intensity and focus of concentration requires effort. Recognizing this factor is important because it means that concentration can vary in both intensity and focus. We can be focusing on the key parts of performance at one moment, but be distracted the next. Racket sport requires high-level concentration. The ability to control attention is crucial for success in racket sports. Concentration or selective attention is also involved in racket sports because it is psychological factor such as fatigue, state of situation, balance and functioning of the central nervous system which is important at time of playing the shots in racket sports.

In this study an effort was made to look into one such human performance factor, the Arm-hand steadiness. Steadiness is an important component of skills that require aiming and general immobility such as shooting, pistol marksmanship, archery and racket sports. Arm-hand steadiness is the ability to hold one’s arm and hand in a specific

position for a relatively short period of time. This is a psychomotor phenomenon. It depends upon the combination of psychological processes as well as the motor events of the body. It determines the success in sports events like archery and shooting. Being a psychomotor process, it depends upon not only the muscular caliber of an individual but also on the mental ability to concentrate on the target (Clark, 1986).

■ METHODOLOGY

Selections of subjects:

Ten male subjects living in Lakshmibai National University of Physical Education, Gwalior (M.P.) were selected purposively from lawn tennis. All subjects participated in Inter-University championship with age range between 20 to 25 years.

Selection of variable:

On the basis of various literature on psychological variables, finding out the related research study and keeping in mind the specific purpose of the study to find out the relationship between concentration and hand steadiness among lawn tennis players. So, concentration and hand steadiness two variables were selected for this study.

Procedure for administration of the test:

After selecting the subjects, they were estimated for their performance. Concentration and hand steadiness were measured in seconds by electrical mirror drawing apparatus and steadiness tester apparatus.

Test administration (Concentration):

The concentration ability of the subject was measured in sports psychology laboratory of Lakshmibai National University of Physical Education, Gwalior. A calm and quite atmosphere, as required to conduct this test, was provided. Each subject was instructed to sit comfortably in the sports psychology laboratory and they were also requested for their whole-hearted co-operation in this study. The subject was asked to sit in front of the mirror drawing apparatus. The rubber pin was placed at the starting point in the star. The wooden plate was adjusted horizontally at adequate height above the hand of the subject so that star task was not directly visible to the subject. The subject was told to move the pin in such a manner that it does not touch the outer parts of the smaller and bigger star and subject was also instructed to concentration into the mirror while performing star task total time taken to complete each trial total was recorded and in similar way they were given ten trials and the average of total time and errors for each individual was calculated.

Before collecting the final data, each subject was given three trials in order to make familiar with the apparatus. Then the reliable scores were obtained.

The total numbers of errors were those when the iron touched with either outer parts of the smaller and bigger star and this was recorded in the meter recording number of errors. The stop watch was started as the command was given to begin and stopped as the subject completed the star task. The total time taken to complete the task was recorded.

The average of ten trials was recorded in order to obtain highly reliable scores as ten trials in each case considered to be sufficient to yield reliable scores. The raw scores were converted into composite scores which were considered as individual score on concentration.

Test administration (Hand steadiness):

The hand steadiness ability of the subject was measured in sports psychology laboratory of Lakshmibai National University of Physical Education, Gwalior. A calm and quite atmosphere, as required to conduct this test, was provided. Each subject was instructed to sit comfortably in the sports psychology laboratory and they were also requested for their whole-hearted co-operation in this study. The subject was asked to sit in front of the apparatus, on a wooden chair with feet resting on a wooden surface. The apparatus was placed on a wooden table whose height could be adjusted so that the top of the apparatus was at shoulder height and its outer edge was in line with the edge of the shoulder of the arm preferred for writing. The session consisted of single trials for the holes, progressing from the largest to the smallest. The subject was told to insert the tip of the probe, upon signal, one by one in all the holes to a depth of about 5 mm as fast he could because the time was also clocked to complete all the holes. The test desired the subject to insert the key in the sequence in which they were given from bigger to smaller. After trial, both the number of contacts and the contact time (in seconds) were noted for holes. Before collecting the final data, each subject was given few trials in order to make familiar with the apparatus.

The total numbers of errors score were those when the tip of the probe touched with inner part of the bigger or smaller holes and this was recorded in the meter recording number of errors. As soon as the player completed, the total error score can be seen on the meter box and that score was recorded. The raw scores were converted into composite scores which were considered as individual score on hand steadiness.

Statistical procedure:

To find out the relationship between concentration and hand steadiness among lawn tennis players Pearson product moment correlation was used. The level of significance was set at 0.05 level.

■ OBSERVATIONS AND DISCUSSION

Results of Table 1 revealed that the mean and standard

Table 1: Descriptive statistics of lawn tennis players on selected neuro-muscular variables of concentration and hand steadiness

Neuro-muscular variables	Mean	S.D.
Concentration	93.78	6.317
Hand steadiness	6.10	1.595

deviation of concentration was 93.78 ± 6.317 and hand steadiness was 6.10 ± 1.595 in relation to lawn tennis players.

Results of Table 2 revealed a significant relationship between concentration and hand steadiness ($r = 0.749$) among inter-university tennis players as the calculated value was greater than the tabulated value of ($r = 0.632$) at 0.05 level of significance with 8 degree of freedom.

After analysis of data, results of this study showed significant relationship between concentration and hand steadiness among lawn tennis players. This might be due to the fact that in racket types of sports, the athlete has to hit the ball correctly, forcefully and efficiently for that hand steadiness is the important variable. Further, when you commit an error on an easy ground ball or miss a shot, it may be that you are distracted by things that are happening around you. Our eyes normally react to anything that happens in our field of vision spectators, other participants or even the wind blowing leaves on an overhanging branch. Concentration is the ability to screen out these distractions and stay focused on the ball. Results and reasons of this study also supported by various study conducted in different places like, Phil (1995) had

Table 2: Correlation matrix of selected neuro-muscular variables of lawn tennis players

Neuro-muscular variables	Concentration (sec.)	Hand steadiness (sec.)
Concentration (sec.)	1.00	0.749*
Hand steadiness (sec.)		1.00

* indicates significance of value at $P = 0.05$

$r_{0.05(08)} = 0.632$

conducted a study on (Minor) motor activity and concentration in listening situation and Kaur *et al.* (2007) had conducted a study on comparison of arm-hand steadiness for shooting perfection in armed forces.

■ REFERENCES

- FitzGibbon II S. Herbert and Bairstow, N. Jeffrey (1979).** *The Racquet sports player.* Simon and Schuster A Division of Gulf and Western Corporation, NEW YORK (U.S.A.). p.15.
- Clark, D.H. (1986).** Sex differences in strength and fatigability. *Research Quarterly for Exercise and Sport*, **57**: 144-149.
- Kaur, Gaganpreet, Shenoy, Shweta Sandhu and Sandhu, Jaspal Singh (2007).** Comparison of arm-hand steadiness for shooting perfection in armed forces and punjab police. *Anthropologist*, **9**(4): 299-304.
- Phil, Lyida Margeret, Imhof (1997).** (Minor) motor activity and concentration in listening situation. *Dissertations Abstract International*, **57** (January, 1997).

