Chapter-III

METHODOLOGY

3.0.0 INTRODUCTION

In the preceding chapters, the researcher has presented introduction and the review of literature and review of related literature which is supporting and substantiating the present research study.

In the present chapter, the discussion on the methodology of the research is presented. This chapter focuses on the design of the study, sample considered, tools used, the methods followed for data collection and the statistical techniques adopted.

The present study envisages the importance of specific psychomotor skills and psychological factors of the field game players in exhibiting their performance in psychological areas. The present investigation was a pioneering attempt made by the investigation to attribute psychomotor skills and psychological factors in their related fields.

The study under report focuses the psychological basis of team game players and their performance, which is the order of the day in everlasting sports scenario.
3.1.0 DESIGN OF THE STUDY

The diagrammatic presentation was presented hereunder.
3.2.0 SAMPLE OF THE STUDY

The study was formulated based on the simple random sampling. The samples were collected from the 200 football players and 200 hockey players in the age group of 18-22 years from 4 universities. The data was collected separately for football players and hockey players at the time of inter college tournament held at different Universities playgrounds and also at different college grounds under the Telangana Universities.

Table 3.2.1
Showing the Sample of the study

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name of the Universities</th>
<th>Number of Football players</th>
<th>Number of Hockey players</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Osmania University</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Kakatiya University</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Telangana University</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>Mahatma Gandhi University</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>5.</td>
<td>Total</td>
<td>200</td>
<td>200</td>
<td>400</td>
</tr>
</tbody>
</table>
3.3.0 TOOLS USED

Psychomotor Skills

- Reaction time – electronic reaction timer or chronometer.
- Movement time – nelson speed of movement.
- Eye-hand coordination – Lafayette electrical operator (two arm tracing apparatus).

Psychological Factors

- Anxiety - Sport Competition Anxiety Test (SCAT) that was developed by Martens, Vealey, and Burton.

3.4.0 TEST ADMINISTRATION OF PSYCHOMOTOR SKILLS

3.4.1 Reaction Time Test

**Purpose of the test:** To measure the reaction time (visual and auditory) of the players.

**Apparatus required:**

1) Electronic reaction timer of chronometer.
2) Table
3) Two chairs
4) Power supply
Test administration: the experimental was site in a chair and the subject asked to sit on a chair facing to him. The vernire chronometer reaction timer is placed on the table in between item. The electric power is supplied in the apparatus.

At the experimenter side the apparatus was had two ordinary switches Red and Green switches and one press button switch among there two ordinary switches, one is the main switch which was meant for presenting the stimuli (either visual or auditory )by operating the switch the stimulus could be presented either through light or sound (buzzer).

The press button switch called “EXPERIMENTORS SWITCH” was meant for presenting the stimulus and simultaneously the reaction timer or chronometer to start. The electronic timer is also placed in the front side of the equipment and it could be able to show the readings in mille seconds.

The apparatus had two press button switches on the subject side. The subject was press one of the buttons with his index finger for a stimulus. The other button was be used to sestet. The red light was meant for the visual reaction time and the green for getting ready.

The tester demonstrates the lest to the subject and explains clearly how two respond on the command “READY” the subject was be ready with pressing the button. Them the tester presses the experimenter switch at the same time electronic timer starts to run. After seeing the red light the subject was take put his finger out quickly. Then the electronic time was stop automatically.
The time taken for seeing the red light and removal of the considered as the visual reaction time of that particular.

The same test might be conducted for right and left finger of the subject Reset the apparatus for the next experiment.

For auditory reaction time the same procedure was adopted but here the subject was responded by hearing the buzzer instead of seen the light.

The time taken from hearing the second was shown in the electronic timer in mille seconds. The reading was considered to be auditory reaction time of that subject.

**Scoring:** Best of three trails was be recorded in each experiment that is visual reaction time and auditory reaction time.

### 3.4.2 Movement time test:

**Name of the test:** Nelson speed of movement time.

**Purpose of the test:** To measure the speed of movement of the players.

**Equipment required:**

1. One yard scale
2. Table
3. Two chairs
Test administration:- Nelson’s test is an incent to measure the combined reaction and speed of movement of the hands and arms. The subject should be seated on a chair facing the table with his hands resting over the edge of the table. The palms were to be kept facing each other with inside boarder of the little finger resting along two lines which were marked on the edge of the table 12 inches apart. The experimental should bold the one yard scale near the top so that it hangs midway between the subject’s palms with the BASE LINE! Of the scale position even with the upper edge of the subject’s index fingers and the subject concentrating on the limited zone. After preparatory command “READY was be given”. The command “GO was be given simulate only and the scale was be dropped and the subject should stop the falling scale quickly as possible as be could an inward and horizontal movement of the arms.

Scoring: Twenty trails should be given for each subject and the distance covered through the hands before it stopped every time is to be recorded. The average of the middle 10 trails after the slowest and fastest five trails shall be eliminated. That means first and lost five trails were not be taken into consideration. The formula for calculating the movement time is.

\[
\text{Formula: } \text{Time} = \sqrt{\frac{2 \times \text{distance of a scale falls}}{\text{acceleration of gravity}}}
\]

3.4.3 Eye-Hand Coordination

Name of the test: Electronic Laffayte eye-hand coordination

Purpose of the test: The ability to relate vision with moment of the body or parts of the body.
Appartus required:

(1) Electronic laffayte two-arm tracing apparatus
(2) One table
(3) Two chairs
(4) Power supply
(5) Stop watch

Test administration: Laffayte two-hand eye coordination is to measure the related vision with movements of the body or the parts of the body. The two-arm tracing apparatus provides a psychomotor tasks which involves coordinating ability of both arms with respect to the research area. The subject will be seated on a chair facing both his two hands holding the handle. The handle must make a move on the star contained. The time taken and errors was counted.

Scoring: Three trails will be given for each subject and the time and errors will be counted. The average of the three trails will be taken into consideration. The formula for calculating the eye-hand coordination is

\[ \sqrt{2 \times \text{average of three trails} \times \text{errors}} / \text{Acceleration due to gravity} \] .

3.5.0 Test Administration of Psychological factors

3.5.1 Sport Competition Anxiety Test (SCAT)

By analyzing an athlete's responses to a series of statements about how he feels in a competitive situation it is possible to determine their level of anxiety. A test that provides such functionality is the Sport Competition Anxiety Test (SCAT) that was developed by Martens, Vealey, and Burton in 1990.
A test measuring the tendency of an athlete to experience anxiety when competing in sports. It is used to measure competitive trait anxiety. Test scoring is based on 15 questions that ask individuals how they feel when competing in sports and games. Each item is answered on a three-point scale (Important, Somewhat important and Not at all important) is computed for each respondent.

3.5.2 Aggression

**Buss, A. H., & Perry, M. P. (1992).** was adopted for opinionnaire which consists of 28 (twenty eight) statements used to measure motivation, it includes both Intrinsic motivation and Extrinsic motivation statements. The statement consists of five responses. The subjects were asked to put a tick (✓) mark against on one of the responses that was found most suitable and is computed for each respondent.

3.5.3 Motivation

The Sports Motivation Scale, Luc G. Pelletier, Michelle Fortier, Robert J. Vallerand, Nathalie M. Brière, Kim M. Tuson and Marc R. Blais, 1995, Journal of Sport & Exercise Psychology, 17, 35-5, was adopted for opinionnaire which consists of 28 (twenty eight) statements used to measure motivation, it includes both Intrinsic motivation and Extrinsic motivation statements. The statement consists of five responses. The subjects were asked to put a tick (✓) mark against on one of the responses that was found most suitable and is computed for each respondent.
### 3.6.0 DATA COLLECTION PROCEDURE

The subjects of the study were in the age group between 18 to 22 years from two groups i.e., football players and hockey players. The football players consisting 200 men and the hockey players consisting of 200 men of Telangana Universities i.e. Warangal, Hyderabad, Nalgonda and Nizamabad districts.

The researcher has collected the data separately for football players and hockey players at the time of inter college tournament held at different Universities playgrounds and also at different college grounds under the Telangana Universities. The subjects were measured with three categories of psychomotor skills namely, (i) reaction time, (ii) movement time, (iii) eye-hand coordination, and the subjects were taken their opinion with three categories of psychological factors namely, (i) Anxiety, (ii) Aggression, (iii) Motivation.

Hence, the data was collected honestly and accurately for the total sample selected. The data collection procedure was completed in six months time.

### 3.7.0 STATISTICAL TECHNIQUES APPLIED

The investigation under report will study the difference between the psychomotor skills and psychological factors of football players and hockey players in Telangana Universities. The collected data were analyzed by using mean, standard deviation and t-test. To know the significance difference between the variables on usage of computers in secondary schools, mean and standard deviation, t-test, Correlation and Anova has been calculated. Based on mean and standard deviation, t-Test was paired sample T-test calculated whenever two groups are
involved in a variable t-test was applied. The analysis was done by using the software package SPSS-17.0.

3.8.0 SUMMING UP

In the third chapter the researcher has presented the methodology of the research topic entitled Analytical study on specific psychomotor skills and psychological factors of football players & hockey players in Telangana Universities. Design of the study, sample of the study, tools used, data collection procedure, statistical techniques applied are defined.