The purpose of the study was to analyse the differences, if any, in the psychological characteristics among Kabaddi, Football and Basketball players. The manner of handling the various details of experiment is extremely important to the success of research. Research methodology involves the systematic procedures by which the researcher starts from the initial identification of the problem to its final conclusion.

This chapter describes the procedures followed in the selection of subjects, Selection of variables, selection of tools (Questionnaires), validity of the questionnaire, reliability of the questionnaire, procedure of scoring, administration of questionnaire, the research design and the method adopted for Statistical treatment of data.

3.1. Selection of Subjects

The purpose of the study was to analyse and compare the selected psychological factors such as team effectiveness, self concept, aggression and achievement motivation among south zone interuniversity Kabaddi, Football and Basketball players of men in different states such as Tamilnadu, Kerala, Karnataka and Andhra Pradesh in India. To achieve the purpose of the study, 360 subjects (30 players from each game and south zone university in each state) were selected randomly as subjects. The age of the subjects ranged from 18 to 25 years.
### 3.2. Selection of Variables

In any sport, a player’s success or failure results from a combination of physical and mental abilities. Training of an athlete is incomplete without psychological training of the player. At present the psychological aspects have been emphasized and become increasingly vital in the study of psychological characteristics that limit the performance of an individual in a game situation at high level of competition.

Different psychic abilities play decisive role in achieving high level performance in track and field athletics. Many psychological factors have direct relation with competitions whether the result may be a success or failure. But each and every factor has different characteristics at the time of competition at any level of sports.

The investigator revived the available scientific literature pertaining to the problem under study from books, Journals, magazines, research papers and on the basis of the experience oriented observation, a number of factors affecting sports performance were identified. Considering the need of the study and the feasibility criteria, the following psychological variables

<table>
<thead>
<tr>
<th>Groups</th>
<th>Per State</th>
<th>Four States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabaddi</td>
<td>n=30</td>
<td>n=120</td>
</tr>
<tr>
<td>Football</td>
<td>n=30</td>
<td>n=120</td>
</tr>
<tr>
<td>Basketball</td>
<td>n=30</td>
<td>n=120</td>
</tr>
</tbody>
</table>
were selected as dependent and independent variables for this study.

### 3.3. Dependent Variables

1) Team Effectiveness
   a. Dependability
   b. Cooperation
   c. Sharing
2) Self Concept
3) Aggression
4) Achievement Motivation

### 3.4. Independent Variables

1. Games
   a. Kabaddi
   b. Football
   c. Basketball
2. States
   a. Tamilnadu
   b. Kerala
   c. Karnataka
   d. Andhra Pradesh

### 3.5. Selection of Tools

Questionnaire was used as a tool to collect data on psychological variables for this investigation.

1. Team effectiveness of the players was assessed by using the questionnaire developed by Dr.Santhosh Dhar and Dr.Upinder Dhar.
2. Self-Concept was assessed by the inventory questionnaire developed by Piers Harris.

3. Aggression was assessed by using the scale developed by Smith.

4. Achievement motivation was measured by using the questionnaire developed by Dr. M.L. Kamlesh.

The above questionnaires used in the study are standard tools.

**3.6. Validity of the Questionnaires**

Many researchers have conducted survey research using these questionnaires for research. The questionnaires used by them were Team Effectiveness Scale, Self-concept scale, aggression and Sports Achievement Motivation Test. There can be no better evidence to prove the validity of the questionnaire than this.

**3.7. Reliability of the Questionnaires**

A trial run of the inventory was made to ensure the reliability of the inventory and also to establish time-limit so that the respondents give their feeling without too much brooding. Subjects were given Team Effectiveness Scale, Self-concept scale, Aggression and Sports Achievement Motivation Test to assess their psychological factors. The reliability of the test was established by test and retest with a gap period of 10 days and the results have been presented in table I. Reliability of the questionnaire was also established by internal consistency method.
TABLE I
INTRACLASS CORRELATION COEFFICIENT OF TEST AND RETEST SCORES ON SELECTED VARIABLES

<table>
<thead>
<tr>
<th>S.No</th>
<th>Criterion variables</th>
<th>R-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dependability</td>
<td>0.93*</td>
</tr>
<tr>
<td>2.</td>
<td>Cooperation</td>
<td>0.90*</td>
</tr>
<tr>
<td>3.</td>
<td>Sharing</td>
<td>0.97*</td>
</tr>
<tr>
<td>4.</td>
<td>Self-concept</td>
<td>0.95*</td>
</tr>
<tr>
<td>5.</td>
<td>Aggression</td>
<td>0.92*</td>
</tr>
<tr>
<td>6.</td>
<td>Achievement Motivation</td>
<td>0.92*</td>
</tr>
</tbody>
</table>

3.8. Procedure of Scoring

3.8.1 Team Effectiveness

Tools Used

Dr. Upinder Dhar and Dr. Santhosh Dhar questionnaire was used

Procedure

The standardized team effectiveness scale (TES) was used to measure the co-operation, sharing and dependability. The test consisted of five responses always, often, sometimes, seldom and never, the respondents made a cross mark (X) on any one of the responses that fitted to them. The research scholar revalidated the scale by administrating it on forty players. The inventory in its original form was used in this investigation.

The raw scores were subjected to factor analysis and three factors were identified:
Dependability, Cooperation and sharing

The factor of dependability is measured by items question No. 1, 2, 3, 4, 10, 11, 16 and 17

The factor of cooperation is measured by items question No. 5, 6, 7, 8, 9, 13, 14, 15, 18, 19 and 20.

The factor of sharing is measured by item question No. 12

Response Scale to score

<table>
<thead>
<tr>
<th>S/NO</th>
<th>Response</th>
<th>Scores for statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Always</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Often</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Sometimes</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Seldom</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Never</td>
<td>1</td>
</tr>
</tbody>
</table>

3.8.2. Aggression

Tools Used

Smith’s Aggression questionnaire was used.

Procedure

Smith’s Aggression questionnaire consisting of four statements with five level of response scale was administered among Interuniversity players of different states. The respondents were instructed to register their answers by encircling the numbers suited to their attitude.
The questionnaire was scored with the help of the scoring key given below. The range of scores is from 4 to 20. The higher the score the more aggressive the player is.

<table>
<thead>
<tr>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>5</td>
</tr>
</tbody>
</table>

3.8.3. Sports Achievement Motivation

Tools Used

Sports Achievement Motivation questionnaire prepared and standardized by Dr. M. L. Kamlesh was used.

Procedure

In the Sports Achievement Motivation Test questionnaire, there are twenty test items. Among them, for questions 1, 3, 4, 9, 10, 11, 12, 13, 15, 16, 17 and 20, the expected answer is ‘a’. For the questions 2, 5, 6, 7, 14, 18 and 19, the expected answer ‘b’. For correct statement two marks and for incorrect statement zero marks are awarded.

3.8.4. Self Concept

The procedure for scoring Cratty Adaptation of Piers Harris Self Concept Scale is as follows.
Score 1 point for each response expected. Deduct 1 point for each positive expected answer which was circled "No" and deduct 1 point. The score is the number of expected responses given for the 20 items.

1, 2, 3, 4, 6, 8, 12, 13, 16, 17, 18 and 20 - Positive (Yes)
5, 7, 9, 10, 11, 14, 15 and 19 - Negative (No)

3.9. Method of Research

The scholar adopted survey method of research for his investigation. The scholar gathered data in the form of responses to Team Effectiveness (dependability, cooperation and sharing) self-concept, aggression and achievement motivation questionnaires from Inter University Tournaments conducted by South zone universities in association with Association of Indian Universities, New Delhi.

3.10. Administration of Questionnaire

The investigator administered the questionnaires to three hundred and sixty subjects. The investigator collected the data from the subjects before their matches during their rest time. The purpose of the study was clearly mentioned. The investigator explained the subjects about the uses of the questionnaire and meaning of each questions and how to fill the questionnaire. Care was taken to see that the subjects answered the entire questions. The subjects were asked to answer the questions individually. It was assured to the subjects that their responses would be kept confidential and would in no way influence their
performance and therefore they could give their honest responses without any sense of fear or apprehension. The filled up questionnaires from respondents were collected after checking that all the items were responded and using the scoring key the total scores obtained by each subjects were tabulated.

After the reliability and validity of the tests were established, the investigator selected 360 subjects from various universities and their consent was sought to participate in the study. Multiple copies of questionnaire and instructions in the printed format were given to them.

On request by the investigator of the study, the physical directors/coaches who volunteered in assisting the investigator distributed the questionnaire forms to the subjects and collected the filled in forms after allowing sufficient time to the subjects.

i) The managers/coaches of the teams were requested to distribute the questionnaire forms to the subjects and to collect back the filled in forms after allowing sufficient time to the subjects.

ii) The schedule for the distribution of questionnaire was left to the discretion of the team managers which depended on their convenience.

iii) The team manager was instructed not to have verbal interaction with the students while distributing or collecting the filled in forms
iv) They were further instructed not to reveal the nature of the study.

v) They were asked not to furnish any clarification to the subjects with respect to any question in the questionnaire.

vi) The respondents had been assured that their response would be kept confidential and would in no way be disclosed to anybody under any circumstance.

vii) The assurance was given to ensure that they would give honest response without any sense of apprehension or reservation.

viii) The completed questionnaire was received from the subjects after filling in the same in the given time.

3.11. Experimental Design and Statistical Procedure

The static group comparison design was used for this study. All the subjects responded to the questionnaire to assess the psychological variables. The collected data from the two factors, namely, game and state were statistically analysed by using two-way (3x4) factorial Analysis of Variance (ANOVA). 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. Whenever the obtained ‘F’ ratio value in the simple effect test was significant for rows and columns, the Scheffe’s test was applied as post hoc test to determine the paired mean differences, if any. In all the cases, 00.05 level of significance was fixed which was considered to be appropriate.