PROCEDURE

This chapter contains brief description of the selection of subjects, design of the study, selection of variables, reliability of data, administration of the questionnaires, collection of data and the statistical procedure used for analyzing the data.

Selection of Subjects

The present study was conducted on 300 women cricket players of India. Keeping in view the objectives, the players were categorized into three main groups: inter collegiate (100), north zone intervarsity (100), and all India intervarsity (100) man football players. The sample representing the inter collegiate women cricket players who participated in the intercollegiate women cricket championship, 2011 held at N.C. Law Mahavidhiyala, Nanded from 23/09/2008 to 24/09/2011. The sample representing the west zone intervarsity women cricket players who participated in the west zone intervarsity women cricket championship, 2001 held at Banasthali University, Rajasthan from 27/12/2011 to 06/01/2012. And all India intervarsity man football championship, 2011 held at Banasthali University, Rajasthan from 08/01/2012 to 14/01/2012.

Design of the Study

For the purpose of this study, both the samples were considered the true representative of the entire male football population of Indian at the time their assessment of the psychological variables was done.

The present study is a status study, which did not require the investigator basically to manipulate any of the variables included in it. Rather the collection of data became instrumental in providing correct insight into the sports competition anxiety, which cannot otherwise be assessed. It was
not intended to study the interaction among various variables. In all there were three samples and three variables to be investigated.

**Selection of Variables**

Out of myriads of psychological variables associated with outstanding athletic performance, it was really a Herculean task to identify the most crucial ones. The cultural milieu in which a player is born and brought up is a great influencing force, which moulds his psyche. No doubt numerous psychological variables have crystallized as very critical to athletic performance through research studies yet the choice of variables for such type of effort is not guided by extraneous considerations.

Secondly, availability of reliable and valid instruments is also an important consideration in directing one’s ingenuity for the choice of variables. Many psychological instruments i.e. tests and inventories are relevant more often than not to the population on which they have been standardized and for which they have been constructed. Therefore, based on literary evidence, and discussion with the sports psychologists, it was decided to focus attention on the following variables:-

1. Sport Achievement Motivation
2. Sport Aggression.
3. Mental Toughness.

**Administration of the Questionnaires and Collection of Data**

As explained in the foregoing pages, the tests were administered to the three sample groups inter collegiate, west zone intervarsity, and all India intervarsity women cricket players.
The managers of all the teams were contacted personally and requested to permit their respective team members to serve as subjects for this study. Subjects were contacted personally when they were not busy and their sincere co-operation was solicited.

Necessary instructions were given to the subjects before the administration of each test. At the same time research scholar motivated the respondents by promising to send a separate abstract of the conclusions of her study to each of them. It was clearly explained to the subjects that overall purpose of the study was to allow each subject to acquire deeper insight into her psychological functioning. Confidentiality of responses was guaranteed so that the subjects would not camouflage their real feelings. The three tests were administered to the subjects in the following order:-

1. Sports Achievement Motivation (SAMT)
2. Sport Aggression Test (SAT)
3. Mental Toughness Questionnaire (MTQ)

Care was taken that no boredom set in. after each test a short session of pep talk of ten minutes followed in order to rejuvenate the players for the next “ordeal”. No time limit for filling in questionnaires was set. However, the subjects were made to respond as quickly as possible without brooding over any question/statement once the instructions were understood clearly.

**Achievement Motivation**

Achievement motivation was assessed by Sports Achievement Motivation Test (SAMT) developed by Dr. M.L. Kamlesh.

Achievement motivation is an athlete’s pre-disposition to approach or avoid a competitive situation. Achievement tests attempt to measure what an individual has learned – his or her present level of performance. Sports achievement tests are particularly helpful in
determining individual or group status in sports settings. Achievement test scores are used in placing, advancing or retaining students at particular grade levels. They are used in diagnosing strength and as a basis for awarding prizes, scholarship or degrees.

The sports achievement motivation test is a self evaluation questionnaire of twenty statements responses value of which extend from 0-40 in total. Each statement carries a maximum score of two and minimum zero. When the subjects ticked the high pole part, he/she was given two points and when touched to low pole, he/she earned zero.

After constructing further studies by using SAMT the author has given the following classification criteria based on percent and points.

<table>
<thead>
<tr>
<th>Raw/mean score</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 24</td>
<td>Low</td>
</tr>
<tr>
<td>24 - 30</td>
<td>Moderate</td>
</tr>
<tr>
<td>Above-30</td>
<td>High</td>
</tr>
</tbody>
</table>

Scoring:

The SAMT carrying a test retest reliability as 0.70, in a test of twenty statements the response value of which range between 0 – 40. The validity SAMT with the actual performance of the athletes had bee n worked out to be 0.55 which is marked. On the basis of percentile point norms suggested in the said test, subjects scoring below 24 could be characterized ‘low in sports achievement motivation’, those scoring below 30 but above 24 as moderate and those scoring above 30 as highly motivated.
**Aggression**

Aggression was assessed by Sports Aggression Inventory constructed and standardized by Prof. Anand Kumar Shrivastava & Prem Shankar Shukla.

Sports Aggression inventory consists of 25 questions, in which 13 items are keyed "yes" that are 1, 4, 5, 6, 9, 12, 14, 16, 18, 21, 22, 24, & 25 and the statements which are keyed “No” that are 2, 3, 7, 8, 10, 11, 13, 15, 17, 19, 20 & 23.

Score of 12-13 is considered as average on aggression and those scores higher than 12-13 will be considered as high on aggression and those scores lower than 12-13 will be considered as low on aggression.

**Scoring:**

For each item score was either “1” or zero. The maximum score may be 25 and minimum score may be “0”.

**Mental Toughness Questionnaire**

**Purpose:**

The mental toughness questionnaire (Appendix-C) was used to asse the level of mental toughness of the players. The test retest reliability of the questionnaire was reported to be 0.79.

**Procedure:**

The questionnaire on mental toughness (Appendix-C) prepared by Alan Goldberg (1995) has sixty items, which has four categories namely: handling pressure (20 questions), concentration (17 questions), mental rebounding (14 questions), and winning attitude (9
questions). A sample statement under handling pressure category read “I think about my opponent’s size, previous performance or reputation before I play a match”.

The subjects were instructed to respond to each item according to how they generally felt in competitive sport situations.

Every statement has two possible responses i.e. True or False.

There was no time limit for the completion of the questionnaire but the subjects were instructed not to ponder too long over any statement and respond to all the statements in the questionnaire independently.

**Scoring:**

Responses obtained from the subjects on each statement of mental toughness questionnaire were recorded for analysis of data.

A total score of 60 was possible on this questionnaire. The classification criterion given by Alan Goldberg is as follows.

<table>
<thead>
<tr>
<th>Raw/Mean Score</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 – 60</td>
<td>Mentally – Tough</td>
</tr>
<tr>
<td>48 – 54</td>
<td>Pretty Solid Mentally</td>
</tr>
<tr>
<td>40 – 47</td>
<td>Average Mental Toughness</td>
</tr>
<tr>
<td>Below 40</td>
<td>Need Mental Toughness Exercise</td>
</tr>
</tbody>
</table>

The responses of the players in each of the four categories i.e. handling pressure, concentration, mental rebound and winning attitude were recorded for statistical treatment.

**Statistical Procedure**
Mean score and standard deviation of inter collegiate (N=100), west zone intervarsity (N=100), and all India intervarsity (N=100) and the sample (N=300) were calculated in all the three variables i.e. sports achievement motivation, aggression and mental toughness (consisting of four categories handling pressure, concentration, mental rebound and winning attitude).

One-way analysis of variance was applied to find out the significance of mean difference among all India intervarsity (N=100), West Zone intervarsity (N=100) and Inter Collegiate (N=100) players in each of the variable. This was followed by Least Significance Difference Test (L.S.D.) of Post-hoc comparison to determine the significance of difference between ordered paired means at 0.05 level.