CHAPTER III
CHAPTER-III

METHOD AND PROCEDURE

In this chapter the selection of subjects, variables, tools, administration of various tests, method of scoring, the statistical design and the procedure to be followed for the present study are being discussed.

(1) SAMPLE:

The sample for the present study was drawn from the colleges affiliated to the various Universities situated in Haryana State, namely Maharishi Dayanand University, Rohtak, Kurukshetra University, Kurukshetra and Haryana Agriculture University, Hissar. The College were selected randomly for this purpose. Further the sample which constitutes of five hundred (500) male and female volleyball players with age group of 17 to 24 years were also drawn randomly from the selected colleges.

The classification of the total sample was based on:

(a) Sex and performance.
(b) Area and performance.
Breakup of this classification is as given:

(a) Classification of total sample on sex and performance:

**Total Sample N=500**

- **Male N=325**
  - College Players (N=271)
  - University Players (N=54)
- **Female N=175**
  - College Players (N=136)
  - University Players (N=39)

(b) Classification of total sample on area and performance:

**Total Sample = 500**

- **Rural N=311**
  - College Players (N=253)
  - University Players (N=58)
- **Urban N=189**
  - College Players (N=154)
  - University Players (N=35)
(2) **SELECTION OF VARIABLES**:

Keeping in view the significance of the variables and from the point of view of performance primarily the variables belong to three basic areas: Anxiety, Adjustment and Self-concept. The list of variables used in the present study is as follows:

1. Trait Anxiety
2. State Anxiety
3. Home Adjustment
4. Health Adjustment
5. Social Adjustment
6. Emotional Adjustment
7. Educational Adjustment
8. Total Adjustment
9. Physical Self-Concept
10. Social Self-Concept
11. Temperamental Self-Concept
12. Educational Self-Concept
13. Moral Self-Concept
14. Intellectual Self-Concept
15. Total Self-Concept
(3) TOOLS USED:

Keeping in view the research criteria of availability, suitability, reliability and validity, the following tools were used to collect the data:

State-Trait Anxiety Inventory.

Constructed and Standardized by Dr. Roma Pal and Dr. Govind Tiwari (1984) was used to measure the State-Trait Anxiety of the subjects.

ii) Self-Concept Questionnaire (SCQ).

Adult form constructed by Saraswat (1984) was used to measure the physical, social, temperamental educational, moral and intellectual aspects of self-concept of the subjects.

iii) Adjustment Inventory for college students of Sinha and Singh (1980), was used to measure all dimensions of adjustment (Home, Health; Social, Emotional and Educational and total adjustment) of the subjects.

TESTS DESCRIPTION

I. STATE-TRAIT ANXIETY INVENTORY: (Roma Pal & Govind Tiwari 1984):

For the construction of the present test, the items were collected from the STAS constructed by Speilberger, Gorsuch and Lushene (1970), rewritten in a manner that would permit each item to be used as a measure of both the state and the trait anxiety. While selecting the items, it was assumed that items with a demonstrated relationship to other measures of anxiety would be most
useful here. Hence, a number of items embodying content of proven relationship to the most widely used anxiety scales were written in a manner that would permit each item to be used as a measure of state or trait anxiety.

For concurrent validity of the present test, the English version of State Anxiety and Trait Inventory, Cattell & Scieries (1963) IPAT Anxiety Scale & Taylor (1953) Manifest Anxiety Scale were administered to a sample of 200 college students (100 Males & 100 females). The Correlation-Coefficients are given in the following table:

**CORRELATIONS BETWEEN THE STATE TRAIT ANXIETY (ST)**

**IPAT & TMAS**

<table>
<thead>
<tr>
<th>Anxiety Scales.</th>
<th>College Males No. 100 STA</th>
<th>College Females No. 100 STA</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPAT</td>
<td>.75</td>
<td>.73</td>
</tr>
<tr>
<td>TMAS</td>
<td>.81</td>
<td>.83</td>
</tr>
</tbody>
</table>

The above table clearly shows that present test is a valid tool for the measurement of state trait anxiety.

II. SELF-CONCEPT QUESTIONNAIRE:

The self-concept inventory provides six separate dimensions of self-concept, viz. physical, social, intellectual, moral, educational and temperamental self concepts. It also gives a total self-concept score. The operational definitions of the self concept measured are:
i) **Physical:** Individuals view of their body health, physical appearance and strength.

ii) **Social:** Individuals sense of worth in social interactions.

iii) **Temperamental:** Individuals view of their prevailing emotional state or predominance of a particular kind of emotional reaction.

iv) **Educational:** Individuals view of themselves in relation to the school, teachers and extra-curricular activities.

v) **Moral:** Individuals estimation of their moral worth; right and wrong activities.

vi) **Intellectual:** Individuals awareness of their intelligence and capacity of problem solving and judgements.

**RELIABILITY:**

Reliability of the inventory was found by test-retest method and it was found to be .91 for the total self-concept measure reliability co-efficients of its various dimensions varies from .67 to .88. The following table show the test retest reliability of each dimension.
## TEST-RETEST RELIABILITY OF THE SELF-CONCEPT INVENTORY

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Self-Concept Dimension</th>
<th>No. of items</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Physical</td>
<td>8</td>
<td>.77</td>
</tr>
<tr>
<td>B</td>
<td>Social</td>
<td>8</td>
<td>.83</td>
</tr>
<tr>
<td>C</td>
<td>Temperamental</td>
<td>8</td>
<td>.79</td>
</tr>
<tr>
<td>D</td>
<td>Educational</td>
<td>8</td>
<td>.88</td>
</tr>
<tr>
<td>E</td>
<td>Moral</td>
<td>8</td>
<td>.67</td>
</tr>
<tr>
<td>F</td>
<td>Intellectual</td>
<td>8</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>Total Self-Concept</td>
<td>48</td>
<td>.91</td>
</tr>
</tbody>
</table>

## SELF-CONCEPT DIMENSION ALONG WITH THEIR ITEM NUMBERS

<table>
<thead>
<tr>
<th>Self-Concept Dimensions</th>
<th>Code No.</th>
<th>Item Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>A</td>
<td>2,3,9,20,22,27,29,31</td>
</tr>
<tr>
<td>Social</td>
<td>B</td>
<td>1,8,21,37,40,43,46,48</td>
</tr>
<tr>
<td>Temperamental</td>
<td>C</td>
<td>4,10,14,16,19,23,24,28</td>
</tr>
<tr>
<td>Educational</td>
<td>D</td>
<td>5,13,15,17,25,26,30,32</td>
</tr>
<tr>
<td>Moral</td>
<td>E</td>
<td>6,34,35,41,42,44,45,47</td>
</tr>
<tr>
<td>Intellectual</td>
<td>F</td>
<td>7,11,12,18,33,36,38,39</td>
</tr>
</tbody>
</table>
The adjustment inventory used for present study is a well known tool for measuring all the dimensions of adjustment and the total adjustment of college students. The five areas of adjustment covered by this inventory are: Home, Health, Social, Emotional and Educational. The subjects can be classified into five categories. the five categories are: 'a' for excellent, 'b' for good, 'c' for average, 'd' for unsatisfactory and 'e' for very unsatisfactory.

The area wise description of the trend on the basis of raw score is as follows:

(a) **Home Adjustments**: Low scores indicate satisfactory adjustment. Individuals scoring high tend to be unsatisfactorily adjusted towards their home.

(b) **Health Adjustment**: Low scores indicate satisfactory health adjustment and high scores show unsatisfactory adjustment.

(c) **Social Adjustment**: Individuals scoring high are submissive and retiring. Low scores indicate aggressive behaviour.

(d) **Emotional Adjustment**: High scores indicate unstable emotions. Individuals with low scores tend to be emotionally stable.

(e) **Educational Adjustment**: Individuals scoring high are poorly adjusted towards their curricular and co-curricular programmes. Persons with low scores are interested in the educational activities.

The adjustment inventory is equipped with a key which was used by the investigator while calculating the scores.
The reliability & co-efficient of the inventory are presented in the table as under.

**RELIABILITY CO-EFFICIENT OF THE INVENTORY BY USING DIFFERENT METHODS.**

<table>
<thead>
<tr>
<th>Method</th>
<th>Home Health</th>
<th>Social</th>
<th>Emotional</th>
<th>Educational</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Splitscale</td>
<td>0.87</td>
<td>0.83</td>
<td>0.96</td>
<td>0.95</td>
<td>0.97</td>
</tr>
<tr>
<td>Test-Retest</td>
<td>0.85</td>
<td>0.82</td>
<td>0.95</td>
<td>0.94</td>
<td>0.97</td>
</tr>
<tr>
<td>Hoyt's Method</td>
<td>0.86</td>
<td>0.82</td>
<td>0.95</td>
<td>0.95</td>
<td>0.94</td>
</tr>
<tr>
<td>K-R Formula-20</td>
<td>0.84</td>
<td>0.82</td>
<td>0.92</td>
<td>0.94</td>
<td>0.93</td>
</tr>
</tbody>
</table>

**ADMINISTRATION OF TESTS:**

For the collection of data from college and university players, the researcher had to seek co-operation from many quarters. She had to approach the Directors of Sports of various universities to ask for co-operation for collection of data. Information regarding the date, venue and timings of inter-college tournaments and university coaching camps was also obtained well in advance. The Managers and Coaches of the respective college teams as well as the organisers of the tournaments were requested to help in the matter by acquainting them with the purpose of the research study.
The researcher administered the tests during the inter-college volleyball tournament held for the session 1991-92, for universities namely Maharishi Dayanand University, Rohtak; Kurukshetra University, Kurukshetra and the Haryana Agriculture University, Hissar respectively. The inter-college tournaments for boys were held zone-wise. The MDU organised the tournament in two zones i.e. the north-zone, held at the Campus of C.R. College, Rohtak and the venue for the south-zone was at S.K.College, Kanwali (Rewari) and the venue for the tournament for girls was at Govt. College for Girls at Gurgaon. The zonewise tournament for boys of the Kurukshetra University were held at zone `A' University courts at Kurukshetra, Zone `B' G.N.Khalsa College Yamuna Nagar, zone `C' Dayanand College, Hissar & zone `D' Dyal Singh College Karnal respectively. The tournament for the girls in the discipline of volleyball for the Kurukshetra University were held at the Kurukshetra University courts, Kurukshetra.

The data of the players representing their respective universities in the discipline of volleyball for boys and girls were taken separately during their coaching camps before their participation in the All India Inter-Universities Tournaments. The coaching camps for boys and girls was held at Rohtak, Kurukshetra and Hissar respectively.

Separate questionnaire/inventory were administered to all the subjects under the direct supervision of the investigator. The prescribed response sheets were also distributed along with the questionnaire/inventory.

The test instructions were read out to the players and questions, if any from their side were answered. The tests were administered one after the other.
on the same team. Throughout the testings, the same timings were used i.e. 9.30 A.M. to 11.30 forenoon.

**METHOD OF SCORING:** The scoring of obtained data was done as described in the respective test manual.

(1) **STATE-TRAIT ANXIETY INVENTORY**:

The possible range of the scores for the state anxiety and trait anxiety varies from 30 (minimum) to 90 maximum. The subjects respond to each item of both the scales by rating themselves according to the standard instructions on a three point scale - (1) Always, (2) Some times and (3) Never for balancing state and trait scale equal numbers of items have been taken. High rating indicates high anxiety whereas low rating indicate low anxiety for the positive items of each scale. The weightage scores of responses will be marked 3, 2 and 1 respectively whereas reversed items will be marked 1, 2 and 3. The positive and negative items of the state and trait anxiety are given overleaf:

1. **State Anxiety**

Positive item: 1, 2, 4, 5, 6, 7, 10, 11, 15, 16, 19, 20, 22, 24, 25, 26, 27, 28, 29, 30 (scoring should be 3, 2, 1).

Negative items: 3, 8, 9, 12, 13, 14, 17, 18, 21, 23 (scoring should be 1, 2, 3).
2. **Trait Anxiety**

   **Positive items:** 1,2,3,6,7,8,10,11,13,14,15,23,26,27, 28,29,30
   
   (scoring should be 3,2,1).

   **Negative items:** 4,5,9,12,17,18,19,20,21,22,24,25
   
   (scoring should be 1,2,3).

(2) **SELF-CONCEPT** :

   The respondent is provided with five alternatives to give his responses ranging from most acceptable to least acceptable description of his self-concept. The responses are arranged in such a way that the scoring system for all the eight items will remain the same i.e 5,4,3,2,1 whether the items are positive or negative. The summated score of all the forty eight items provided the total self concept score of an individual. A high score on this inventory indicates a higher self-concept, while a low score shows low self-concept. Transfer the score of each item on the front page against that item. Now add all the scores of eight items given in that column, this will give the score for that particular dimension of self concept.

(3) **ADJUSTMENT** :

   The inventory is reusable with answer sheet for responses given by the examinee. It contained 102 items. Each item was provided with two alternatives. `Yes' indicated lack of adjustment and `No' indicated well adjusted. One number was provided for `yes' and `no' was provided with zero. Low scores indicated good adjustment and high score indicated poor adjustment.
The overall scores of the five areas of adjustment (a) Home (b) Health (c) Social (d) Emotional and (e) Educational adjustment helped in the assessment of the total adjustment of the subjects. The scoring key had been explained in the manual of the inventory.

**STATISTICAL DESIGN:**

The data obtained was compiled and tabulated variable wise. The statistical analysis of the data was performed on a computer. At the first stage mean and standard deviations were calculated for all the fifteen Psychological variables. The analysis of variance ANOVA was applied to find out the significance of differences and the interaction of sex (male & female) area (rural & urban) & performance (university & college players) for each variable.

At the second stage t-ratios of all the variables were computed to know the level of significance of the differences among various sports groups on each variable. The results obtained were tabulated in the form of t-matrix for each of the fifteen psychological variables to have comparative analysis.