CHAPTER - III

METHOD AND PROCEDURE
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In this chapter, experimental design, sample, selection of variables, tests, description of tests, administration of tests, method of scoring and the statistical analysis employed to analyse the data have been presented.

EXPERIMENTAL DESIGN

This is a survey type of study focussed on athletes from selected disciplines of sports. The dependent variables of self-concept, sports performance motivation and team-cohesion in relation to gender and performance of the team athletes has been studied. The systematic sampling design was used. The statistical measure used in this study was 2x2 ANOVA, Mean and SD were also computed.

SAMPLE

Subjects for data collection were drawn from the inter-college competition and from coaching camps of the Punjab University, Chandigarh, Punjabi University, Patiala and Guru Nanak Dev University, Amritsar. The sample consisted of 320 athletes with the age group of seventeen to twenty three years representing the team sports at the college and university levels of performance from the games of volleyball, basketball, hockey and kabaddi held in the session of 1998-99. The break-up of the sample was as follows:-

160 subjects were taken from the inter college level of performance

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- 49 -
performance and 160 from the university level of performance. One hundred sixty subjects (80 Males and 80 Females) were taken from the college level, while one hundred sixty subjects (80 males and 80 females) were selected from the university level. The sample was based on the principle of systematic random sampling. Subjects were systematically selected from two different levels of performance from four different sports disciplines. From each sports discipline 40 subjects were drawn.

**Sample description is presented in the following table:**

<table>
<thead>
<tr>
<th>Sports Discipline</th>
<th>Performance Level</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volley Ball</td>
<td>College Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>University Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Basketball</td>
<td>College Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>University Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Hockey</td>
<td>College Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>University Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Kabaddi</td>
<td>College Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>University Level</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>320</td>
</tr>
</tbody>
</table>

**SELECTION OF VARIABLES**

Keeping in view their significance for athletic performance and development of the individual the following psychological variables

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were selected. Primarily these variables belong to three basic areas Sports performance motivation, Team Cohesion and Self concept. The list of variables used is given below:

1. **SPORTS PERFORMANCE MOTIVATION VARIABLES**
   
i) Ability and Effort

   ii) Material Award

   iii) Media and Public Respect

   iv) Expectation of Others

   v) Knowledge of Performance

   vi) Skill

   vii) Social Support

2. **TEAM COHESION VARIABLES**
   
i) Individual Attraction to Group-Task

   ii) Individual Attraction to Group-Social

   iii) Group Integration-Task

   iv) Group Integration-Social

3. **SELF CONCEPT VARIABLES**
   
i) Physical Self Concept
ii) Social Self Concept

iii) Temperamental Self Concept

iv) Educational Self Concept

v) Moral Self Concept

vi) Intellectual Self Concept

Performance and gender were taken as independent variables which were studied in relation to the depended variables mentioned above.

SELECTION OF TESTS

With a view to measure the selected variables the following tests were administered to the subjects:

i) Motivation scale for sports performance (Dr. Jagdish Kaur –1994) to measure the sports performance Motivation.

ii) Team cohesion variables were measured by using the (Widmeyer et.al. 1985) Scale.

iii) Self concept questionnaire (Dr. Raj Kumar Sarswati – 1984) was used to study self-concept variables.

DESCRIPTION OF TESTS

Motivation Scale for Sports Performance

Motivation scale for sports performance by Dr. Jagdish Kaur
(1994) was used to measure motivation for sports performance of the subjects. The scale consisted of 16 items in the form of questionnaire which were to be answered by keeping in view the situation. While answering, the subject was to mark a circle on a five point scale corresponding to his response to indicate the level of agreement with each of the statement. Subjects were made to read the instructions and instructed to understand the questionnaire well before attempting. The scores of the responses reflected in the five point scale of each question responded by each subject were summed up and analyzed statistically.

Reliability and Validity

The test retest reliability of motivation scale for sports performance was found to be .77 and split-half was .71 and validity of the scale was found to be .65.

Method of Scoring

The scale consists of 16 items in the form of questionnaire. Corresponding to the items, a five point scale is provided which anchored at the two extremes by “Strongly Agree” and “Strongly disagree” to indicate the level of agreement / disagreement with each statement. The responses in terms of scores reflected in the five point scale of each question item are calculated. These are summed up and analysed statistically.

Self Concept Questionnaire

The self concept inventory provides six separate dimensions of self concept. Viz, physical, social, intellectual, moral, educational
and temperamental self concept. It also gives a total self concept score, the operational definitions of self concept measures are:

1. Physical (Individual’s) view of his body, health, physical appearance and strength).

2. Social (Individual’s sense of work in social interaction).

3. Temperamental (Individual’s view of his providing emotional state or predominance of a particular kind of emotional reaction).

4. Educational (Individual’s view about himself in relation to the School, teachers and extra curricular activities).

5. Moral (individual’s view of his 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 coefficients of its various dimensions varies from .67 to .88. The following table shows the test-reliability of each dimension. Test-retest reliability of the self concept inventory is presented in the following table:
<table>
<thead>
<tr>
<th>CODE</th>
<th>SELF CONCEPT</th>
<th>NO. OF ITEMS</th>
<th>RELIABILITY OF 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 dimensions along with their item numbers are presented in the following table:

<table>
<thead>
<tr>
<th>SELF CONCEPT DIMENSION</th>
<th>CODE</th>
<th>NO.</th>
<th>ITEM NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>A</td>
<td>2, 3, 9, 20, 22, 27, 29, 31</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>B</td>
<td>1, 8, 21, 37, 40, 43, 46, 48</td>
<td></td>
</tr>
<tr>
<td>Temperamental</td>
<td>C</td>
<td>4, 10, 14, 16, 19, 23, 24, 28</td>
<td></td>
</tr>
<tr>
<td>Educational</td>
<td>D</td>
<td>5, 13, 15, 17, 25, 26, 30, 32</td>
<td></td>
</tr>
<tr>
<td>Moral</td>
<td>E</td>
<td>6, 34, 35, 41, 42, 44, 45, 47</td>
<td></td>
</tr>
</tbody>
</table>
Method of Scoring

The respondent is provided with five alternatives to give his/her responses ranging from the most acceptable to least acceptable description of his/her self-concept.

The responses are arranged in such a way that the scoring system from all right items remains the same i.e. 5, 4, 3, 2, 1 whether the items are positive or negative. The summed up score of the forty eight items provides the total self-concept of an individual. A high score on the inventory indicates higher self-concept.

Team Cohesion

The Group Environment Questionnaire consisted of four sub-scales which included

i) Individual Attraction to Group Task (ATG-T)

ii) Individual Attraction to Group-Social (ATG-S)

iii) Group Integration – Task (GT-T)

iv) Group Integration – Social (GT-S).

The construct Individual Attraction to Group-Task reflects individual team member’s feeling about his/her personal involvement with the group-task productivity, the goals and the objectives, the construct, Individual Attraction to Group-Social, represents the individual team member’s feelings about his/her personal involvement, acceptance and social interaction with the group, the construct Group Integration-
Social represents a member's feelings about his/her personal involvement, acceptance and social interaction with the group. The construct Group Integration-Task is based on the individual team member's feelings about the similarly closeness and bonding within the team as a whole, around the group as a social unit.

Insofar as the social vs task distinction is concerned, the former is reflected in a general orientation or motivation towards developing and maintaining social relationships within the group. The latter is reflected in a general orientation or motivation towards achieving the organization's goals and objectives.

The value for Cronbach's Alpha with regard to individual attraction to Group Task individual attraction to Group-Social, 'Group Integration-Task' and Group integration-social were .74, .58, .78 and .61 respectively. The internal consistency comparison with regard to study -1 and 2 were as under:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Scales</th>
<th>Study-1</th>
<th>Cronbach’s Alpha Study- II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Individual Attraction to</td>
<td>.74</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Group - Task (ATG-T)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Individual Attraction to</td>
<td>.58</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>Group - Social (ATG-S)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Group Integration - Task (GI-T)</td>
<td>.78</td>
<td>.71</td>
</tr>
<tr>
<td>4.</td>
<td>Group Integration – Social (GI-S)</td>
<td>.61</td>
<td>.72</td>
</tr>
</tbody>
</table>

To establish the construct validity of G.E.Q., it had to under

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go different versions. The overall objective was to achieve internal consistency. The final results were version 3 of the G.E.Q. and items questionnaire. For ATG-T, ATG-S, GI-T and GI-S, the Cronbach’s Alpha were .75, similar to those of the 24 item GEQ and thus version 3 of the GEQ continued to have good internal consistency after elimination of problem items observed in the previous 24 items version.

The G.E.Q. comprises 18 items. Four items relate to the ‘Individual Attractions to Group-Task’ Scale, five items to the ‘Individual Attraction to Group Social’ scale, five items to the ‘Group Integration Task’ scale and four items to ‘Group Integration Social’ Scale. Some of these items contain positive statements about the team whereas others are negative statements, each team member is required to respond to these 18 items on ‘9’ point continuum, two extremes being ‘ strongly agree’ and strongly disagree’. The score for an individual on any particular scale are computed by summing the relevant item values to obtain the total scale score. The G.E.Q. is equipped with a key which was used while computing the scores.

**Method of Scoring**

The Group Environment Questionnaire was provided with a key which was used for scoring. This ‘9 point scale’ had two extremes, ‘strongly agree’ and ‘strongly disagree’. In the sub-scale ‘Individual Attraction to the Group-Task’, item 2,4,6 and 8 were scored from ‘strongly disagree’ = 9 to ‘strongly agree’ = 1. In the sub-scale ‘Individual Attraction to Group-Social’, items 5 and 9 were scored from ‘strongly disagree’ =1 to ‘strongly agree’ = 9 and items 1,3,7 were scored from ‘strongly disagree’ = 9 to ‘strongly agree’ = 1.
agree' = 1. The sub scale ‘Group Integration-Task’ included the items 10, 12 and 16, which were scored from ‘strongly disagree’ = 1 to ‘strongly agree’ = 9 and items 14 and 18 were scored from ‘strongly disagree’ = 9 to ‘strongly agree’ = 1. The item 15 of the construct ‘Group Integration-Social’ was scored from ‘strongly disagree’ = 1 to ‘strongly agree’ = 9 and items 11, 13 and 17 were scored from ‘strongly disagree’ = 9 to ‘strongly agree’ = 1.

SEQUENCE OF ADMINISTRATION OF TESTS

Uniformity was maintained throughout data collection phase with reference to sequence of administering the tests, the following sequence was followed:
1. Motivation scale for sports performance (Dr. Jagdish Kaur – 1994)
2. Group environment questionnaire (Widmeyer et.al. – 1985)
3. Self concept questionnaire (Dr. Raj Kumar Saraswat, 1984)

The uniformity of testing conditions and sequence of testing was ensured. However, environment distractions were guarded against. Five minutes of break was given between each questionnaire.

STATISTICAL DESIGN

In this study psychological variables related to Self Concept, Sports Performance Motivation and Team Cohesion were studied at two different performance level and gender of athletes. The statistical measure used was 2x2 ANOVA. Mean and SD values were computed to know the direction of difference between groups and intragroup variability.

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