

## CHAPTER III

### METHODOLOGY

In this chapter, the selection of subjects, selection of variables, orientation of subjects, reliability of instruments, competency of tester, reliability of data, test administration, collection of data and the statistical procedure used have been explained.

**3.1 SELECTION OF SUBJECTS** To facilitate the study 90 school level men hockey players, consisting of 30 defenders, 30 midfielders and 30 attackers, who represented their school in inter school competitions were selected. They were randomly selected. Their age was between 15 and 17 years.

The requirements for the collection of data through administration of questionnaires were explained to the subjects so as to avoid any ambiguity of the effort required on their part and prior to the administration of the questionnaire. All the subjects participated in this study voluntarily responded to the questionnaire without bias.

**3.2 SELECTION OF VARIABLES** The research scholar reviewed the various scientific literatures pertaining to the selected psychological variables from books, journals, periodicals, magazines and research papers. Taking into

consideration of the feasibility criteria, availability of instruments and the relevance of the variables of the present study, the following variables were selected.

### **3.2.1 Dependent Variables**

#### **3.2.1.1 Psychological Variables**

1. Anxiety
2. Aggression
3. Team Cohesion
  - a. Attraction Task
  - b. Attraction Social
  - c. Group Integration Task
  - d. Group Integration Social
4. Personality Traits
  - a. Extroversion / Introversion
  - b. Neuroticism / Stable

**3.2.1.2 Rationale for the selection of the study** The investigator himself a good Hockey player, having represented in various levels and played in different positions in the game, felt the need of psychological traits of players in different positions in Hockey. A professional teacher in physical education in a city school and instructing Hockey skills to school boys at various levels as a coach in the game was much interested in doing this study

hence, he had selected a study on the selected psychological characteristics of players in different positional play in Hockey.

### **3.3 RESEARCH DESIGN**

Independent randomized research design was used for this study, as the subjects were selected randomly from three independent groups inter school hockey players of attackers, defenders and middle fielders, who had represented their schools at inter school competitions. Standard questionnaire were administered to ascertain the groups' anxiety, aggression, team cohesion, and personality traits. The collected questionnaire were converted into standard scores as described by the authors. The collected data were subjected to statistical treatment to find out any differences between the groups in the dependent variables selected using Analysis of Variance.

### **3.4 CRITERION MEASURES**

By glancing through the literature, and in consultation with professional experts, the following variables were selected as the criterion measures in this study.

1. Anxiety was measured through standard questionnaire. This questionnaire was developed by Spielberger.(1976)
2. Chauhan and Tiwari's Aggression Scale was used to measure the aggression of the subjects.

3. Team cohesion was measured by administering the Group Environment Questionnaire (Carron, Brawley, and Widmeyer, 1985)
4. Eysenck personality Questionnaire - revised was used to measure the personality traits, extroversion / introversion and neuroticism / stable of the subjects.

### **3.5 RELIABILITY OF DATA**

The reliability of data was ensured by establishing the questionnaire reliability, tester's competency and subject reliability

#### **3.5.1 Questionnaire Reliability**

The questionnaires administered were used in assessing the selected psychological factors for years together by various psychologists. Apart from this, the authors developed the questionnaire, found the reliability and validity of the tests and the key for scoring the responses. These were taken as correct and thus the reliability of the questionnaire found by the authors were accepted for the purposes of this study.

#### **3.5.2 Tester's Competency**

The investigator himself read out the questionnaire to the subjects and obtained the responses personally. They were asked to respond to each and

every questions asked in the inventory and responded within the time prescribed for this purpose. Since the investigator was qualified enough to administer the questionnaire, the repeated measurement of individuals on the same test was done and the testers competency was proved.

### **3.6 PILOT STUDY**

A pilot study was conducted (i) to select suitable questionnaires for measuring selected psychological variables and (ii) to establish reliability and validity of these questionnaires.

### **3.7 MEASUREMENT OF PSYCHOLOGICAL VARIABLES**

#### **3.7.1 ANXIETY**

Anxiety was measured through the anxiety questionnaire. The anxiety questionnaire was designed to measure the degree of anxiety experience prior to the competition.

It was developed by Spielberger.(1979). Spielbergers Trait Anxiety questionnaire was given to all subjects. Twenty items were adopted from Spielbergers Trait Anxiety questionnaire for this investigation. The complete questionnaire scores as follows:

| S.No | Response      | Score of Positive statements | Score of Negative statements |
|------|---------------|------------------------------|------------------------------|
| 1    | Not at all    | 1                            | 4                            |
| 2    | Some what     | 2                            | 3                            |
| 3    | Moderately so | 3                            | 2                            |
| 4    | Very much     | 4                            | 1                            |

|                            |                           |
|----------------------------|---------------------------|
| <u>Positive Statements</u> | 1,2,5,8,10,11,15,16,19,20 |
| <u>Negative Statements</u> | 3,4,6,7,9,12,13,14,17,18  |

### 3.7.2 AGGRESSION

#### Questionnaire

Chauhan and Tiwari's Aggression Scale was to assess the level of aggression among hockey and soccer players.

The aggression scale was constructed by Pal and Nagrvi and can be used for the age group of 14-25 years. The scale is based on Chauhan and Tiwari's frustration scale or it can be said that the scale is the extended form of Chauhan and Tiwari's frustration scale in which aggression has been taken as a mode of frustration. The items were related to reactionary attitudes to

irritation, drive for dominance, love for fighting, retaliation, anger behaviour, aggressive tendency against existing rude traditional social customs and rules, preference for fighters and for counter behaviour, appreciation for rebellion and competitiveness.

### **Instructions**

The subjects were given the following instructions before administration of the scale, some statements were given in the booklet related to the personality. The subjects were asked to go through them carefully. There were six alternatives for a single statement. The subjects were asked to tick mark the answer to which he "strongly agree". The subject were asked to put a tick mark (✓) to only one answer of each statement. The subjects were asked to attempt all the answers. The subjects' answers were kept confidential so they were free to give their answers in their own way.

### **Scoring**

The test has six alternatives, very much, much, ordinary, less, very less and not at all. The questionnaire consists of 30 statements. The scores were weighted from 5 for very much to 0 for not at all. Therefore, the obtained score of this scale vary in between 0 to 150.

### **Reliability**

The split half reliability was calculated for 60 player belonging to hockey and soccer players. The test re-test reliability was calculated for 40 subjects and found to be 0.78.

### **3.7.3 TEAM COHESION**

The Group Environment Questionnaire (Carron, Brawley, and Widmeyer, 1985) evaluates four elements regarding how attractive a group is to its individual members. It measures the individual's attraction to the group as well as the group integration within the task and social dimensions in four different subscales:

1. The individual attraction-task score represents the individual's attraction to the group's task. (Sum of scores for items 2, 4, 6, and 8; range = 4-36)
2. The individual attraction-social score represents the individual's attraction to want to be part of the group. (Sum of scores for items 1, 3, 5, 7, and 9; range = 5-45)



3. The group integration-task score represents the direction of the group towards achieving their goal. (Sum of scores for items 10, 12, 14, 16, and 18; range = 5-45)

4. The group integration-social score represents the closeness and bondness of the group as a whole. (Sum of scores for items 11, 13, 15, and 17; range = 4-36)

To determine the final scores, add the numbers circled for the questions in the brackets above. However, items 1; 2, 3, 4, 6, 7, 8, 11, 13, 14, 17, and 18 are reversed scored which means that a 1 is equal to 9 and 9 equal to 1. The higher the score on each subscale, the greater it reflects that dimension (e.g., a score of 31 on the individual attraction-social subscale means the individual is more socially attracted to the group than a score of 15 would indicate). Note that the individual attraction subscales range from a low of 4 to a high of 36, whereas the group integration subscales range from a low of 5 to a high of 45.

### **Scoring**

The overall team cohesion score was for a maximum of 162 and minimum of 18. The higher the scores the subject scored was considered better his team cohesion, vice versa.

### 3.7.4 EYSENCK PERSONALITY QUESTIONNAIRE REVISED (EPQR)

Eysenck personality Questionnaire (EPQ-R) was used to collect the data. This inventory was believed to be apt for this study for the following reasons.

1. Eysenck personality questionnaire measure the dimensions of Extroversion Neurosism, and Lie Score.
2. This is objectivity scoreable test. This also gives the most complete coverage of personality possible in a brief time.
- 3 . This has high validity, objectivity and reliability as its credit.
4. The Eysenck personality Questionnaire is carefully oriented and groomed to basic concepts in human personality structure research.
5. This is specially planned and carefully arranged according to the common interest and attitude of the students or players.
6. This is firmly based on personality sphere, concepts, a design to insure initial coverage for all the behaviour that commonly enters rating and the dictionary description of personality.

## Principles And Mechanics of Scoring

### Instructions

1. Check that each question has only one answer.
2. Place the key on the booklet so that the (\*) marks on the booklet are visible through the circles on this key.
3. The questionnaire consists of 57 statements with 'Yes' or 'No' answers.
4. There are three scores (Extroversion -24, Neuroticism -24 and Lie Score-9) to be obtained. Each answer scores one point.
5. For example, to obtain the score for 'psychoticism' add 1 score for each answer visible through squares, and record the sum in the table on page 1. So, the same for page 2, 3 and 4. Transfer these score on the table at the back page.
6. Repeat this procedure to obtain extroversion, neuroticism and lie-score also.
7. The questionnaire was scored with the help of a scoring key. If the response given by subjects corresponds to the key for a particular

statement a weight of one was given, otherwise, the statement received the weight zero. The summation of all obtained score was the indication of personality traits of the subjects.

8. Only the scores for extroversion/introversion and neuroticism/ stable of the subjects were considered for the purposes of this study.

### **3.7 STATISTICAL TECHNIQUE**

The objective of this study was to make a study on the psychological characteristics of players in different positions in hockey. The collected data on selected psychological characteristics, namely, anxiety, aggression, team cohesion and personality traits were subjected to statistical analysis using descriptive statistics, mean and standard deviation, and the differences between the players in different positions were statistically analysed through Analysis of Variance (ANOVA). The Scheffe's post hoc test was used to find out the paired means of significance difference.(Clarke and Clarke, 1982).

The methodology adopted for this research is presented through a Flow Chart in Figure I.

**Fig I : FLOW CHART SHOWING METHODOLOGY ADOPTED IN THE RESEARCH**

