CHAPTER 3

Methodology
CHAPTER - III

METHODOLOGY

This chapter explains the research methodology involved in this study. It explains the means and methods used in the selection of subjects, sample size, selection of variables, pilot study, collection of data, tools used and statistical procedure has been explained.

3.1 SELECTION OF THE SUBJECTS

To achieve the purpose of the present study, the researcher selected 192 Volleyball and Basketball players studying in various Institutes of University of Mysore. In Basketball game the total inter-collegiate players were around 200 players, Out of 200 players, 99 players were selected randomly during inter-collegiate tournament. Similarly in Volleyball the total numbers of players were around 300 players. This is more than total Basketball players. Out of 300 Volleyball players, 93 players were selected randomly. The age of subjects was between 18 to 25 years these students should have at least participated at Inter-collegiate level and obtained recognition.

3.2 SAMPLE SIZE OF THE STUDY

The sample for the present study consists of students playing Basketball and Volleyball game. Following tables shows the sample size selected for the present study.

<table>
<thead>
<tr>
<th>Game</th>
<th>No. of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volleyball</td>
<td>93</td>
</tr>
<tr>
<td>Basketball</td>
<td>99</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
</tr>
</tbody>
</table>
3.3 SELECTION OF VARIABLES FOR THE STUDY

After a thorough review of literature in books, journals, periodicals and research articles besides detailed discussion with the experts and keeping in view of the feasibility of the study in terms of availability of Questionnaires and the relevance of the variables to the present study, the following variables were selected.

The details of the tools employed in the present study are as follows

1. **Emotional intelligence developed by Hyde, Pethe & Dhar (2002)**

Factors of Emotional Intelligence: The scale was administered on 200 samples and the scores obtained were subjected to factor analysis and ten factors were identified. These factors are as shown in the below.

   a) Self-Awareness
   b) Empathy
   c) Self-Motivation
   d) Emotional Stability
   e) Managing Relations
   f) Integrity
   g) Self-Development
   h) Value Orientation
   i) Commitment
   j) Altruistic Behaviour.

   ➢ A. **Self-awareness** is being aware of oneself it is measured by, questions " I can continue to do what I believe in even under severe criticism, " I have my priorities clear, " I believe in myself, and " I have built rapport and made and maintained personal friendships with work associates. " This factor is the strongest and explains 26.8 percent variance and has a total factor load of 2.77. The correlation of this factor with total score is 0.66.
B. **Empathy** is feeling and understanding the other person and is measured by," I pay attention to the worries and concerns of others, " I can listen to someone without the urge to say something, " I try to see the other person's point of view, " I can stay focused under pressure, and " I am able to handle multiple demands. " This factor explains 7.3 percent variance with a total factor load of 3.11. The correlation of the factor with total score is 0.70.

C. **Self-motivation** is being motivated internally, measured by " People tell me that I am an inspiration for them, " I am able to make intelligent decisions using a healthy balance of emotions and reason, " I am able to assess the situation and then behave, " I can concentrate on the task at hand inspite of disturbances, " I think feelings should be managed, and " I believe that happiness is an attitude." This factor accounts for 6.3 percent variance and a total factor load of is 3.28. Its correlation with total score is 0.77.

D. **Emotional stability** is measured by," I do not mix unnecessary emotions with issues at hand, “I am able to stay composed in both good and bad situations, “I am comfortable and open to novel ideas and new information, and " I am persistent in pursuing goals despite obstacles and setbacks.” This factor explains 6.0 percent variance with a total factor load of 2.51. The correlation of this factor with total score is 0.75.

E. **Managing relations** is measured by, The statements that measure this factor are " I can encourage others to work even when things are not favourable, " I do not depend on others' encouragement to do my work well, " I am perceived as friendly and outgoing, and " I can see the brighter side of any situation", This factor explains 5.3 percent variance with a total factor load of 2.38, The correlation of this factor with total score is 0.67.

F. **Integrity** is measured by," I can stand up for my beliefs.” I pursue goals beyond what is required of me, and “I am aware of my weaknesses “are the statements that measure this factor. This factor explains 4.6 percent variance with a total factor load of 1.88.
➤ **G. Self-development** is measured by, “I am able to identify and separate my emotions and " I feel that I must develop myself even when my job does not demand it” and explains 4.1 percent variance with a total load of 1.37.

➤ **H. Value orientation** the statements are” I am able to maintain the standards of honesty and integrity, and “I am able to confront unethical actions in others" and explains 4.1 percent variance with a total factor load of 1.29.

➤ **I. Commitment** statements are. “I am able to meet commitments and keep promises, and “I am organized and careful in my work- "measure this factor. This factor accounts for 3.6 percent variance with a total factor load of 1.39.

➤ **J. Altruistic behaviour** is measured by items” I am able to encourage people to take initiative, and “I can handle conflicts around me." It explains 3.0 percent variance with a total factor load of 1.3.

**Psychometric properties of the scale**

**Reliability:** The reliability of the scale was determined by calculating reliability coefficient on a sample of 200 subjects. The split-half reliability coefficient was found to be 0.88.

**Validity:** Besides face validity, as all items were related to the variable under focus, the scale has high content validity. It is evident from the assessment of judges/experts that items of the scale are directly related to the concept of Emotional Intelligence. In order to find out the validity from the coefficient of reliability (Garrett, 1981), the reliability index was calculated, which indicated high validity on account of being 0.93.
2. Social Intelligence scale

Social intelligence scale is developed by Chadda and Ganesan (2004) having five parts with varied type of questions. Several dimensions of social intelligence is being measured by the scale. Following is a final list of 8 dimensions which was selected and retained for final inclusion in the scale. They are operationally defined as;

a) Patience-Calm endurance under stressful situations.

b) Co-cooperativeness - Ability to interact with others in a pleasant way to be able to view matters from all angles.

c) Confidence Level — Firm trust in oneself and ones chances.

d) Sensitivity - To be acutely aware of and responsive to human behaviour.

e) Recognition of Social Environment- Ability to perceive the nature and atmosphere of the existing situation.

f) Tactfulness-Delicate perception of the right thing to say or do.

g) Sense of Humour - Capacity to feel and cause amusement; to be able to see the lighter side of life.

h) Memory- Ability to remember all relevant issues; names and faces of people.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Number of Items Retained</th>
<th>Split half reliability</th>
<th>Test retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Patience</td>
<td>8</td>
<td>.93</td>
<td>.94</td>
</tr>
<tr>
<td>B. Cooperativeness</td>
<td>11</td>
<td>.91</td>
<td>.91</td>
</tr>
<tr>
<td>C. Confidence</td>
<td>8</td>
<td>.89</td>
<td>.90</td>
</tr>
<tr>
<td>D. Sensitivity</td>
<td>9</td>
<td>.90</td>
<td>.93</td>
</tr>
<tr>
<td>E. Recognition of Social Environment</td>
<td>3</td>
<td>.95</td>
<td>.95</td>
</tr>
<tr>
<td>F. Tactfulness</td>
<td>7</td>
<td>.91</td>
<td>.84</td>
</tr>
<tr>
<td>G. Sense of Humour</td>
<td>8</td>
<td>.90</td>
<td>.92</td>
</tr>
<tr>
<td>H. Memory</td>
<td>12</td>
<td>.96</td>
<td>.97</td>
</tr>
</tbody>
</table>

**Psychometric Properties**

**RELIABILITY**

In the present scale test, retest and split half techniques were employed to find the reliability co-efficient. For finding, the split-half reliability a sample of 150 (75 males and 75 females) was taken. The following coefficients were obtained:

**VALIDITY**

The techniques of validity used to validate this scale were (1) Empirical Validity and (2) Cross Validation. To test the empirical validity a sample of 50 individuals was taken. The external criterion used was the 'Social Intelligence Test' by F. A. Moss, T Hunt, KM. Omwaka and L.G. Woodward (1949), George Washington University series. The present scale and the Social Intelligence Test by Moss and Hunt were administered and scored accordingly. The data obtained were subjected to ‘Pearson Product Moment Correlation’ for testing the validity.

The dimensions of Recognition of Social Environment, Memory and Sense of Humour were common to the present scale and the Social Intelligence Test by Moss and Hunt. The Sense of Humor dimension was similar in both cases; the other two
dimensions mentioned were slightly different in format and manner of administration. Inspite of this the correlation obtained for all these three dimensions.

3. 4 ASSESSMENT OF PERFORMANCE

The performance of Basketball and Volleyball players was assessed by Coaches Rating Scale prepared by experts in the said games.

3.5 BASKETBALL PLAYERS GAME PERFORMANCE RATING SCALE

Game Performance of men Basket Ball players was based on expert ratings, which was one of the major dependent variable.

Criterion Measures

Criterion measure selected for the present study was performance ability among male Basketball players. The performance of the basketball players was evaluated by experts in the field individually by subjective rating during the competition/game situation in the following areas;

A1: Offensive
A2: Defensive

The estimation of performance ability was done on a Five (05) point rating scale for each of the factors mentioned below by Three (03) experts. The rating scale had eight categories of evaluation with each category scored ranging from a minimum of One (1) point to a maximum of Five (05) points. The given criteria performance analysis chart was explained precisely and handed over to the experts to assess the performance of the men Basketball players. The average of three experts was measure criterion for each subject under the study.

Subjects are rated on a scale of 1-5 for a total of 40

5 : Excellent
4 : Good
3 : Intermediate
2 : Poor
1 : Very poor
<table>
<thead>
<tr>
<th>Players Name</th>
<th>Offense</th>
<th>Defense</th>
<th>Total Game performance</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passing</td>
<td>Shooting</td>
<td>Dribble</td>
<td>Assists</td>
</tr>
<tr>
<td>X</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**3.6 VOLLEYBALL PLAYERS GAME PERFORMANCE RATING SCALE**

The evaluation of the game performance of the Volleyball players was done on the rating scale method mentioned below:

A panel of expert/ coaches rated the Volleyball players performance on the following parameters-Basic skills, Execution of skills, Application of Techniques, Tactics, Strategies, Behavior, Emotional Control over the teammates, Level of participation and other criterion measures in the game situations.

**Instructions for the Expert /Coach to evaluate the performance ability**

1. The performance ability of male Volleyball players was examined by the experts/coach in the competitions on a ten (10) point rating scale.

2. The rating scale had ten categories with each category being scored for a minimum of one (1) point to a maximum of ten (10) points.

3. The experts were informed to follow a uniform pattern of game observation, guidelines and performance chart.

4. The Experts/Coaches were informed to encircle the number in each category.

5. The Experts/Coaches were informed to assess each category separately and independently.

6. Points scored by each player in each category was to be added and divided by ten (10) to get the performance rating of each individual player.
The experts /coaches were oriented by the researcher regarding the above procedures, to be taken into consideration during the process of evaluating the game performance ability of the male volleyball players. Thus the performance scores for the men volleyball players were obtained.

**Performance Rating Scale for Assessment of Performance ability of Male Volleyballers.**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variables</th>
<th>Performance</th>
<th>Measures in Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ball passing ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Serving ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Receiving ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Ball setting ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Attacking ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Blocking ability</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Game Tactics</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Overall game performance</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>Past and present Achievements</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>General Behaviour</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>10</td>
</tr>
</tbody>
</table>

Total point scored by player 100

**3.7 PILOT STUDY**

The researcher conducted a pilot study with twenty players who were not subjects of the current research study, so as to determine the methods of rating, evaluate the competency of the researchers testing in the present investigation.
3.8 PROCEDURE OF DATA COLLECTION

With the prior permission of the Director of Physical Education University of Mysore, Mysore, and the Physical Education Directors of affiliated Colleges coming under the jurisdiction of University of Mysore, the researcher collected the data during the inter-collegiate competitions of the games of Basketball and Volleyball respectively.

The data required for the present study in respect of variables under consideration was collected by administering the Emotional and Social Intelligence scales for each subject. The data in respect of the dependent variable (Game Performance of Male Basketball & Volleyball players) was collected with the help of rating scales for each player, which was evaluated by Experts/coaches concerned with the respective games. The scores in numerical form represented the data for the present study. Stratified Random Technique was employed for the sample selection.

3.9 PROCEDURE FOR ADMINISTRATION

The tests have been administered to the subjects in groups of 10-20 subjects per group. Data collection was done in two sessions, each session lasting for about 30-45 minutes. First, the researcher established the required rapport with the subjects by introducing himself to the participants and informed the subjects the aim of the study and its importance and followed by asking them to introduce themselves to the researcher. The purpose of the study was made very clear to them. After this, the Emotional Intelligence Scale was handed over to the respondents; they were given appropriate instructions for answering and the questions. Whenever they had difficulty in understanding the questions, the researcher made them clear in simple language. They were asked to record their responses in the respective sheets provided to them.

On day two (after a day of administration of Emotional Intelligence test), social intelligence test was administered, the questionnaire had been administered to the subjects in groups of 10-20 subjects per group. The social Intelligence Scale was handed over to the participants and was given appropriate instructions for answering and the questions.
Once, the process of collection of the responses from the respondents was through, they were thanked for their active involvement in helping out the researcher in carrying out his research work.

Once the data collection was over, they were scrutinized for any discrepancies; raw data was scored and tabulated for each player against each activity, subsequently a master data sheet was prepared and fed to the computer. The obtained results were analyzed through SPSS for windows (version 20.0).

3.10 ETHICAL ISSUES

1. Written informed consent was obtained from each subject participating in the study.

2. Confidentiality was assured and maintained.

3. The nature of study was explained to the subjects and they were told that the research was voluntary and they would have the right to opt out at any time.
Fig. 3.1. Volleyball Emotional Intelligence Data Collection Picture
Fig. 3.2. Volleyball Social Intelligence Data Collection Picture
Fig. 3.3. Volleyball Game Performance Rating in Progress Under the Watchful Observation of Experts/Coach’s
Fig. 3.4. Basketball Emotional Intelligence Data Collection Picture
Fig. 3.5. Basketball Social Intelligence Data Collection Picture
Fig. 3.6. Basketball Players Game Performance Rating in Progress Under the Watchful Observation of Experts/Coach’s
3.11 STATISTICAL TECHNIQUE EMPLOYED/USED

After obtaining the raw data the below mentioned statistical technique was used to analyze and to interpret the study.

1. Descriptive statistics
2. Cramer’s V test
3. Product moment co-relation
4. Regression.

Descriptive statistics

The Descriptive procedure displays Univariate summary statistics for several variables in a single table and calculates standardized values (z scores). Variables can be ordered by the size of their means (in ascending or descending order), alphabetically, or by the order in which the researcher specifies. Mean and standard deviations were employed as descriptive statistics in the study.

Cramer’s V test

The Crosstabs procedure forms two-way and multi-way tables and provides a variety of tests and measures of association for two-way tables. The structure of the table and whether categories are ordered determine what test or measure to use. Cramer’s V test was employed in the present study to find out the association between selected rows of variables with selected column of variables. In the present study, Cramer’s V was applied to find out the association between type of game and levels of emotional and social intelligence.

Pearson’s product moment correlation

The Correlations procedure computes Pearson's correlation coefficient with its significance level. Correlations measure how variables or rank orders are related. Two variables can be perfectly related, but if the relationship is not linear, Pearson's correlation coefficient is not an appropriate statistic for measuring their association.
Stepwise multiple regression

Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. In stepwise multiple regressions, attempts are made to find out the major predictors for single dependent variable by several independent variables.