CHAPTER – III

METHODOLOGY

The procedures adopted for the selection of subjects, selection of variables, criterion measures, reliability of data, collection of data and statistical techniques employed for analyzing the data have been described in this chapter.

Selection of Subjects

This study attempts to analyse the influence of psychological and sociological factors among athletes and non athletes of female students in central Kerala higher secondary schools. To identify, the athletes, the investigator also collected the actual information regarding the athletes such as those who are competing in the state schools athletic meet and non athletes such as those who are studying in the schools randomly selected from central Kerala districts and they were not involved in any sports activities. The details of subjects selected from the four districts of central Kerala are given below for each variable.

Table-3.1

Subjects selected in athletes and non athletes from central Kerala districts

<table>
<thead>
<tr>
<th>Districts</th>
<th>Athletes</th>
<th>Non athletes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idukki</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Ernakulam</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Thrissur</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Palakkad</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>120</td>
<td>240</td>
</tr>
</tbody>
</table>
Selection of Variables

The investigator reviewed the scientific literature pertaining to the study from the books, journals, periodicals, internet and research papers resulting from the review of literature and in consultation with the experts and consideration of the feasibility of the study, the following independent and dependent variables were selected.

Dependent Variables

The following psychological and sociological variables were selected as dependent variables for the study.

Psychological Variables

1. Aggression
2. Anxiety
3. Mental health
4. Self concept

Sociological Variables

1. Socio-economic status

Independent Variables

The data on the psychological and sociological variables were collected from athletes and non athletes among female students in central Kerala higher secondary schools from four districts.

Variables

1. Athletes
2. Non Athletes
Districts

1. Idukki
2. Ernakulam
3. Thrissur
4. Palakkad.

Aggression

Aggression is a form of behaviour characterized by physical or verbal attack. It may appear appropriate and self-protective, even constructive as in healthy self-assertiveness, or in appropriate and destructive. Aggression may be directed outward, against others, or inward, against the self, leading to self-destructive or suicidal actions. It may be driven by emotional arousal, often some form of frustration, or it may be instrumental when it is used to secure a reward.

Some aggressive acts may, of course, have instrumental value in sport. The value of such aggressive behaviours probably varies with the situation and individuals involved. Research findings also suggest that the consequence of both hostile and instrumental aggression may extend beyond immediate effects of performance. Sport psychologists have far to go before the factors that influence aggressive behaviour and its consequences can be discussed with any certainty.

Aggressive behaviour of a player increases the level of performance. In team games, due to the aggressive behaviour of a player, the team mates are also motivated to perform there highest level. This information induced the investigator to choose aggression as a psychological variable.
The investigator studies whether there is any difference in the level of aggression between athletes and non-athletes.

**Anxiety**

Sports competition and the intensity increased the psychic problems of sportsmen. The anxiety in its different forms can be seen in the sportsmen. It produces a psychically debilitating and unhealthy and destructive mind-set. The emotions and fears surrounding the anxiety disorder can dominate an athletes life, Interfering with the ability to perform well. On the other side, studies are going on to overcome this psychic disorder. Sports psychologists opinioned that the result of a competition whether it is failure or success depends upon how an individual perceive the situation. Sports competition anxiety has been studied in relation to game, athletic event, sex, age, race and performance. Studies indicate that if the level of anxiety is high in sportsmen, the level of performance will be low and if the level of anxiety is low, the level of performance will be high. It also proved that anxiety is higher for women than men. A moderate level of anxiety will improve the level of performance.

**Mental health**

Mental health is a normal state of well being; and it is defined as “a positive but relative quality of life. It is a condition which is characteristic of the average person who meets the demands of life on the basis of his own capacities and limitations”. Mental health has been defined in various ways by scholars from different cultures. It difficult to define mental health comprehensively, however, it is agered that good mental health is more than simply a lack of mental disorder. The world health organization defines mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with normal stressors in life,
can work productively and fruitfully, and is able to make a contribution to his or her community.”

Mental health problems, including emotional, behavioural and peer problems are prevalent among students of higher secondary schools and may severely interfere with everyday functioning. A comprehensive international review concluded that the median prevalence estimate of functionally impairing psychiatric disorders in children and adolescents was 12%, although the range of the estimate was wide.

A common feature in most studies is the great gender variation in mental health problems in adolescence, with girls reporting more emotional symptoms and distress and boys more behavioural problems. Prospective studies show that mental and emotional problems are increasing from puberty up to early adulthood in girls, with a more stable trend in boys, whereas behavioural problems in both boys and girls are peaking in mid- and late adolescence somewhat depending on type of behaviour.

**Self concept**

Self concept is an contradictions. It is an attitude towards himself involving the cognitive aspects which is individuals image of his own qualities, abilities, appearance and social significance. Self concept is relatively stable and more or less a conscious phenomenon, emotionally experienced as a unique system of the individuals.

Based on these facts the investigator chosen self concept as a psychological variable to find out whether there is any difference in the level of self concept between the athletes and non athletes of central Kerala higher secondary school girls.
**Socio-Economic status**

Man is a social animal. He cannot live a life alone. He has a tendency to associate with other people because he is a social culture by nature. The process of socialization starts in different institution and it is the design of life through which the child develop and is lead from a state of social immunity and dependence towards a stable of maturity and independence.

Sociology of sports is a sub-discipline of sociology which looks at the relationship between sports and society. Because sport is a part of society, it has relationship with other social institutions.

Sportsmen are a group of people within a society who possess the same socio-economic status up to a certain extent. Social status of a sportsman is the relative rank that a sportsman holds, with attendant rights, duties and life style in a social hierarchy based on honour and prestige. Education occupation, income cultural standard and social participation come under the social hierarchy.

Based on these facts the investigator chosen Socio-Economic status as sociological variable to find out whether there is any difference in the level of Socio-economic status between female students of athletes and non athletes.

**Tools of the Study**

Based on these facts the investigator chosen Socio-Economic status as sociological variable to find out whether there is any difference in the level of Socio-economic status between female students of athletes and non athletes.
A questionnaire is a type of statistical survey handed out in paper form usually to a specific demographic to gather information in order to provide better service or goods.

Fine questionnaires were used as tools to collect data on psychological and sociological variables for this investigation. The following were the standardized questionnaires used for this study.

**Table-3.2**

**Variables and tools**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Variable</th>
<th>Questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aggression</td>
<td>Sports Aggression questionnaire by Anand Kumar and P.S Shukla</td>
</tr>
<tr>
<td>2</td>
<td>Anxiety</td>
<td>Sports competition anxiety Test questionnaire (SCAT) by Rainer Martens</td>
</tr>
<tr>
<td>3</td>
<td>Mental Health</td>
<td>Mental Health scale from Trier Personality Inventory (TPI) by Peter Becker.</td>
</tr>
<tr>
<td>4</td>
<td>Self concept</td>
<td>Self concept list rating scale by Pratibha Deo.</td>
</tr>
<tr>
<td>5</td>
<td>Socio-economic status</td>
<td>Modified Socio-Economic status scale by Kuppuswamy.</td>
</tr>
</tbody>
</table>
ORIENTATION OF SUBJECTS

Prior to the administration of the test in order to enrich the full co-operation of subjects the investigator meet all the subjects selected for the study. The related subjects of athletes were asked to assemble in a pavilion during the interval of the competition. Non athletes were assemble in a classroom of the concerned schools. The investigator explained to them each psychological variables and sociological variables and the purpose of the investigation. He also gave very clear instructions regarding the method for answering the questionnaires.

Administration of Questionnaire

Sports Aggression, anxiety, mental health. Self concept and socio-economic status of both athletes and non athletes were measured by using questionnaires. For athletes, the questionnaires were administered during the interval of the competition. To ensure the co-operation of the subjects the researcher had personally meet all the subjects and teachers concerned and explained the purpose of the study. He also gave very clear instructions regarding the methods for answering questionnaire. All the filled in questionnaire were collected from the subjects and scored according to the scoring key. The total scores obtained were tabulated and statistically treated to arrive at meaningful conclusions.

Aggression

The investigator distributed the sports Aggression questionnaire by Anand Kumar and P.S. Shukla, to the subjects of athletes during the interval of competition and necessary instructions were given to make the subjects understand about what they had to do exactly. In the questionnaire 25 questions were given and the subjects were directed to put a tick (✓) mark for the “yes” and “no” responses. They were told
to complete the questionnaire as early as possible. After the completion, the questionnaire were collected and checked whether there was any omission.

**Scoring**

The questionnaire was scored as follows. The items 1,3, 5,6,9, 12,14, 16,18,21,22,24 and 25 were scored as,

- Yes - 2 points
- No - 0 points

The items 2,4,7,8,10,11,13,15,17,19,20 and 23 were scored as

- Yes - 0 points
- No - 1 point

**Anxiety**

The SCAT Questionnaire has 15 items of which five are spurious which had been added to the diminish responds of biasness towards the actual test items. These five questions were not scored out. The subjects were instructed to respond to each item according to how they generally feel in sports competition. Every statement has 3 possible responses ie,

1. Hardly Ever
2. Sometimes
3. Often

The SCAT Questionnaire has got ten test items which are taken for scoring purpose. These are 2, 3, 5, 6, 8, 9, 11, 12, 14 and 15. The remaining items, that is spurious items which are not taken for scoring were 1, 4, 7, 10 and 13. After the
completion of the questionnaire, the investigator collected and checked whether there was any omission.

**Scoring**

The complete questionnaire were evaluated by the investigator according to the scoring key. The items 2, 3, 5, 8, 9, 12, 14 and 15 were scored as follows.

- **Hardly Ever** - 1 point
- **Sometimes** - 2 points
- **Often** - 3 points

The items 6 and 11 were scored thus

- **Hardly Ever** - 3 points
- **Sometimes** - 2 points
- **Often** - 1 point

Items 1, 4, 7, 10 and 13 were not scored. The minimum score that can be obtained by a subject was ten points and the maximum was 30 points.

**Mental Health**

The mental health scale selected from Trier Personality Inventory (TPI) developed by Peter Becker, to assess the subject's mental health consisting of twenty statements. Each item has four answers namely “Always”, “Often”, “Sometimes” and “Never”.

**Scoring**

First 20 items were coded uniformly according to the following coding key: the answer categories “always” (4) “often” (3), “sometimes (2)”, and “Never (1) “
were scored corresponding to the numbers in brackets. The 20 items were divided into two categories such as items which indicate ‘minus sign’ behind the number and items which do not indicate minus sign behind the number (straight coding direction).

A minus sign behind the number of an item indicate the reversal of the coding-direction, and the items which is not having minus sign indicates straight coding direction. Further, the first value of each item subtracted from “5” as it was mentioned in the analysis sheet in the case of minus sign behind the number. If a subject answered item “020” with “often” this answer at first gets the score “3”. But the corresponding field on the analysis sheet showed a “5” the first value must be subtracted from “5” (5-3=2) so that the final score is 2 and in the case of an item which is not having minus sign behind the item indicates straight coding directions as “4”, “3”, “2” and “1”. If a subject answered item 002 with ‘often’ this answer gets a score of ‘3’ so the final score is also “3”.

If the items remained unanswered, the missing value is substituted by a replaced value. The replaced values are printed in the analysis sheet. On the analysis sheet the replaced values are printed in bracket behind the item number, so that the value in front of the slash is for female test persons. These replaced values were treated just as the values of the test persons; so for items with reversal coding direction the replaced values were subtracted from ‘5’ generally. It was proposed to admit not more than ten unanswered items. If more than ten questions are not answered, one should key o get these items answered later or to renounce the test analysis.
The items that indicate straight coding direction are 2,11, 29, 38, 65, 73, 81, 96, 102,113, 119. The items which indicate minus sign behind the number, are 20’, 47’,56’ 88’, 97’, 103’, 108’, 115’ and 119’. In this inventory the minimum score is 20, and the maximum score is 80. The higher score indicates more presence of mental health and the lowest score “20” indicates less presence of mental health of the subjects.

Self Concept

Self-concept is best conceived as a system of attitudes towards oneself. Just as a person as a result of experience, forms attitudes which he organises into a self-consistent system and defends against threats and attacks, so the person also forms attitudes towards himself. Self-concept consists of all the perceptions, feelings, attitudes, aspirations and values of oneself concerning oneself.

Scoring

The SCL (Self-concept List) is based on the self-reporting technique developed by Dr. Pratibha Deo. The rating scale was thought unnecessary to include antonyms since the extremes on a scale for one characteristic would cover both the positive and negative aspects of the same.

The 90 words in the check list also are divided in the positive and negative and neutral classes as well as in the dimensions of intellectual, emotions, character, social and aesthetic characteristics. The check list can measure all the aspects, perceived ideal, real and social self, of the individual and under each, the scores are obtained for each dimension in positive and negative classes.
Scoring of ‘SCL’ is quick through the use of stencil hand scoring keys. There are separate transparent keys for positive and negative scores as well as for neutral words. Keys are also available for the different dimensions.

For the check list, a positive word marked carries a weight of +1, and a negative word marked a weight of -1. Each aspect is scored separately. For one aspect, the total positive score will be the sum of all the positive weights given to the positive words. Similarly the negative words marked when totalled will yield the total negative score. The total positive score plus the total negative score gives the composite score for that aspect for the individual. Other aspects can be scored in a similar way.

The neutral words are not given any weightage and are to be ignored in the scoring.

For the rating scale, the weightages for positive words for the five points of very much like, much like this, uncertain, not like that, not at all like that are 4, 3, 2, 1 and 0 respectively and for a negative word also the weightage is the same way. The composite score is obtained by subtracting the total negative score form the total positive score. The neutral words are to be ignored in the scoring. If dimension wise analysis is aimed at, only the words belonging to that particular dimension are considered and the positive and negative scores for that dimension are obtained in the manner explained above. Similarly, negative and composite scores for all the dimensions can be calculated. This can be done for each aspect separately for comparison.
Discrepancies between different aspects can be worked out by subtracting the total composite score for one aspect (say perceived) from the total composite score for another aspects (say ideal). This will give the score for self acceptance. Similarly, discrepancies between other aspects can be calculated. Dimension wise discrepancies can be similarly calculated. Other methods of calculating discrepancies are also applicable in the case of SCL.

Consistency scores and discrepancy scores over a period of time may be obtained by administering the SCL after particular time intervals. For this purpose, two response cards on two occasions can be compared. If a word is marked by a person on both the occasions, one score for consistency is given. The total of such scores will give the total consistency score for the individual. If a word is marked on one occasion but not on the other occasion, it gives one discrepancy score. The total of all such scores gives the total discrepancy score for the individual. The difference between the composite scores on the two occasions gives the total difference score for the individual.

**Socio-Economic Status**

Modified socio-economic status scale developed by Kuppuswamy was used to collect data from the subject. This scale in terms of eight dimensions.

a. education, b.Occupation, c.Income, d.subscription of Newspaper, e. subscription of magazine, f. Pocket money, g.Club Membership and h. member of organization. Each of these eight variables are measured by means of a weighted scale. It consists of 8 components.
Scoring

a. Education

The scale for measuring the athletes and non athletes parents educational qualification.

<table>
<thead>
<tr>
<th>Items</th>
<th>weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research degree (Ph.D., d. Litt., Etc., )</td>
<td>8</td>
</tr>
<tr>
<td>2. Technical degree (Medical, engineering, etc.)</td>
<td>7</td>
</tr>
<tr>
<td>Post graduate degree (M.A, M.Sc; M.com, etc)</td>
<td></td>
</tr>
<tr>
<td>3. Graduate level education (B.A, B.Sc, B.com, etc)</td>
<td>6</td>
</tr>
<tr>
<td>4. Intermediate level education (I.A, I.Sc; I.cm, etc)</td>
<td>5</td>
</tr>
<tr>
<td>5. High School (metric, Higher secondary, pre university, etc)</td>
<td>4</td>
</tr>
<tr>
<td>6. Middle School</td>
<td>2</td>
</tr>
<tr>
<td>7. Primary schools or literate</td>
<td>1</td>
</tr>
<tr>
<td>8. Un-educated or illiterate</td>
<td>0</td>
</tr>
</tbody>
</table>

b. Occupation

The scale for measuring the occupation of the athletes and non athletes parents.

1. High administrative (Gazetted) officer, Lecturer, Reader, professor, principal, Doctor, Lawyer, engineer, Newspaper Editor, Auditor, Bank manager, Distinguished Artist, Managing director of an industrial or vocational Institution, owner of a factory or firm, Honorary Higher Officer, Political leader holding salary (M.L.A, M.L.C, M.P, etc). 10
2. Middle-class administrative (Non gazetted) officer, Middle-class-
lawyer or doctor, Teacher of a high school or intermediate college,
Research-Assistant, Demonstrator, chemist, Junior engineer,
Commission agent, Artist, Whole-seller or Big shopkeeper.

3. Clerk, Typist, Accountant, Laboratory Assistant, Laboratory
Technician, Primary or Middle school teacher, Station Master, Guard,
Ticket collector, T.T.E, Press reporter, Salesman or small shop keeper,
Telephone or Telegraph operator, Proof reader, Supervisor of a factory
or mine, Drafts man or 3rd grade servant.

4. Motor driver, Engineering painter, Compositor, Mechanic skilled
carpenter or Mason and worker of other skills.

5. Office-peon or fourth grade employee, Factory labour, Hawker or
mobile shopkeeper, Cleaner, Worker engaged in agriculture or other
job or ordinary mill.

6. Watch-man, Gate-keeper, domestic servant, Coolie, etc.

7. Unemployment-dependent on others

C. Monthly Income

This sub-scale measuring the athletes and non athletes parents in
respect of this monthly income
<table>
<thead>
<tr>
<th>Items</th>
<th>Weight (Score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Above Rs. 10,000</td>
<td>12</td>
</tr>
<tr>
<td>2 From Rs. 9001-10000</td>
<td>9</td>
</tr>
<tr>
<td>3 From Rs. 8001-9000</td>
<td>7</td>
</tr>
<tr>
<td>4 From Rs. 7001-8000</td>
<td>5</td>
</tr>
<tr>
<td>5 From Rs. 6001-7000</td>
<td>3</td>
</tr>
<tr>
<td>6 From Rs. 5001-6000</td>
<td>2</td>
</tr>
<tr>
<td>7 Below Rs. 5000</td>
<td>1</td>
</tr>
</tbody>
</table>

**d. Subscription to Newspaper**

This sub-division measures the athletes and non athletes family subscription to newspaper.

<table>
<thead>
<tr>
<th>Items</th>
<th>Weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Daily</td>
<td>2</td>
</tr>
<tr>
<td>2 Occasionally</td>
<td>1</td>
</tr>
<tr>
<td>3 Never</td>
<td>0</td>
</tr>
</tbody>
</table>

**e. Subscription to magazine**

This sub-division measures the athletes and non athletes family subscription to magazine.
<table>
<thead>
<tr>
<th>Items</th>
<th>weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Every week</td>
<td>3</td>
</tr>
<tr>
<td>2  Every month</td>
<td>2</td>
</tr>
<tr>
<td>3  Occasionally</td>
<td>1</td>
</tr>
<tr>
<td>4  Never</td>
<td>0</td>
</tr>
</tbody>
</table>

**f. Pocket money (monthly)**

This sub-scale measures the athletes and non-athletes pocket money in monthly.

Do you get a monthly pocket money in addition to food and refreshments?

<table>
<thead>
<tr>
<th>Items</th>
<th>weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yes</td>
<td>2</td>
</tr>
<tr>
<td>2 No</td>
<td>0</td>
</tr>
</tbody>
</table>

**g. Club Membership**

This sub-scale measures the athletes and non-athletes father’s membership in club.

<table>
<thead>
<tr>
<th>Items</th>
<th>weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 yes</td>
<td>2</td>
</tr>
<tr>
<td>2 No</td>
<td>0</td>
</tr>
</tbody>
</table>

**h. Membership in Organization**

This sub-scale measures the athletes and non-athletes father’s membership in organization.
<table>
<thead>
<tr>
<th>Items</th>
<th>weight (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  No</td>
<td>0</td>
</tr>
<tr>
<td>2  member of one organization</td>
<td>1</td>
</tr>
<tr>
<td>3  Member of more than one organization</td>
<td>3</td>
</tr>
<tr>
<td>4  Office bearer of one organization</td>
<td>4</td>
</tr>
<tr>
<td>5  Office bearer of more than one organization</td>
<td>5</td>
</tr>
</tbody>
</table>

As per the weight given above for the eight dimensions the investigator scored all the statements and consolidated.

**Statistical Techniques Employed**

The aim of this study was to find out whether there was any significant difference between athletes and non athletes among female students of central Kerala higher secondary schools in some selected Psychological and sociological factors. The present study was conducted for students studying at four districts in central Kerala and based on their sports background. In order to examine the difference, which exists among the athletes and non athletes in the selected Psychological and sociological variables. Analysis of variance (ANOVA) was used as the statistical tool. ‘F’ ratio was computed. The level of significance for the study used was 0.05.

Analysis of variance of independent group was applied to find out, whether there is a significant variation on Aggression, Anxiety, Mental health, Self-concept and socio-economic status.