CHAPTER - III
RESEARCH DESIGN, PLAN AND PROCEDURE

One of the important pre-requisite in any research study is the appropriate data without which no worthwhile study is possible. In this regard, Mouly remarks “scientific problem can be resolved only on the basis of data and major responsibility of the scientist is to set up a research design capable of providing data necessary to the solution of the problem, while the unity of the research makes it impossible to say that one aspect is more crucial than another, the collection of the data is of paramount importance, in the conduct of research, since obviously, no solution can be more adequate than the data on which it is based.”

Data are like raw materials without which production in research is impossible. For collection of data the investigator has to set up the design, describe the sampling method, the tools used for the collection of data administration of tools and the statistical techniques used.

As per the objectives of the study, the investigator had a plan the entire process of research work in term of research design suited to present study and; to accomplish the purpose of the study, the design has been systematically presented and explained in this chapter which is given as follow :-

1. Sample of the study
2. Variables
3. Tools and Techniques
4. Data Collection
5. Statistical Procedure
Sample of the study:

A Sample is a miniature picture of the entire group or aggregate form which it has been taken since it is not possible to collect the data from the whole population, therefore a reasonable sample is taken for the collection of data, which should represent the whole population. Mouly (1464) gives the following advantage of sampling.

The layman may think that lacking the sample from the total population may not get valid results but in actual fact, sampling does provide the basis for reliable and valid inferences provided the sampling is proper and adequate, that is not only sufficiently representative but also of sufficiently large size in order to ensure stability of the generalization made as results of study.

In the present, the investigator used a systematic and purposive random sampling device for the collection of data on 200 Foot Ball and Hockey male players (100 each to two games) of inter college, state, inter coaching centers, academies players from the state of Haryana and Punjab, who have participated at least state, inter college/University, inter coaching centers and game academies (inter competitions) in the years 2010-2011, 2011-2012 and 2012-2013. They are in the age group of 17-25 years. These subjects belongs to the affiliated colleges of M.D.U. Rohtak, Kurukshetra University, Ch. Devi Lal University, Sirsa, Punjabi University, Patiala, Punjab University, Chandigarh along with coaching centers and sports academies of Haryana and Punjab. The area wise, University wise and state (Distt.) wise breakup of the subject were given in table 3.1 which will also indicate their level of Participation in this table (Both Games).
Table 3.1
Breakup of the subjects

<table>
<thead>
<tr>
<th>SR NO.</th>
<th>DISTT.</th>
<th>Total No of Players of Hockey</th>
<th>Total No of players in Football</th>
<th>Inter College Hockey, Foot Ball</th>
<th>State Hockey and Football</th>
<th>Inter Coaching Center &amp; Academies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kurukshetra</td>
<td>14</td>
<td>08</td>
<td>08</td>
<td>09</td>
<td>05</td>
</tr>
<tr>
<td>2</td>
<td>Ambala</td>
<td>12</td>
<td>10</td>
<td>11</td>
<td>09</td>
<td>02</td>
</tr>
<tr>
<td>3</td>
<td>Yamuna Nagar</td>
<td>10</td>
<td>18</td>
<td>16</td>
<td>07</td>
<td>05</td>
</tr>
<tr>
<td>4</td>
<td>Rohtak</td>
<td>12</td>
<td>08</td>
<td>10</td>
<td>10</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Hissar</td>
<td>09</td>
<td>12</td>
<td>13</td>
<td>08</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Sirsa</td>
<td>22</td>
<td>10</td>
<td>14</td>
<td>10</td>
<td>08</td>
</tr>
<tr>
<td>7</td>
<td>Sonipat</td>
<td>16</td>
<td>--</td>
<td>09</td>
<td>07</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Mahal Pur</td>
<td>--</td>
<td>22</td>
<td>08</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>9</td>
<td>Patiala</td>
<td>08</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>08</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>103</td>
<td>108</td>
<td>99</td>
<td>78</td>
<td>34</td>
</tr>
</tbody>
</table>

All the players’ particular record was duly verified at colleges, Distt associations, coaching centers and academies’ officers in above cities of Haryana and Punjab.

Variables:

Keeping in view the educational importance and performance in sports following variables were selected for this study.

3.1 Psychological Variables

1. Aggression

2. Level of aspiration
3.2 Physiological Variables

1. Blood Pressure (Diastolic and Systolic).

2. Pulse Rate (resting)

3.3 Anthropometric Variables.

1. Age

2. Weight

3. Height


5. Linear Measurements, (Total Arm length, Total Leg length)

6. Circumference; (upper arm, fore arm, thigh, Calf).

7. Skin folds, (Biceps, Triceps, Sub scapular, Supra iliac, Thigh, Calf and Knee).

3.4 Tools and Techniques:

3.4.1 Psychological Tools

“The Selection of suitable instrument or tools is of vital importance for success for research. Different tools are suitable for collecting various Purposes. For any research one or more of tools combination can be used” Sukhia (1977).

The Selection of tools was governed by the consideration of Their (1) Availability 2) Suitable to the Sample (3) Reliability and validity, Keeping in view those consideration following tests were used to collect data.

A. Aggression Questionnaire by Dr G.C Pati (1971) in English
version (Appendix A) and in Hindi Version (Appendix B) has been used for measuring aggression behavior.

B. Level of aspiration scale to measure the player’s status by Dr MA Shah and Mahesh Bhargava (1987) has been used.

Description of the tests

A. Aggression Test Scale:

Dr.G.C.Pati’s Aggression questionnaire consists of 16 Questions. Each question describes situation where some form of Aggression of deviant behavior has occurred and also some persons who have responded to that in low of mildly aggressive, moderately aggressive and highly aggressive manners. The subject is required to indicate the best appropriates out of the give three responses elicited by the situation from persons described in the question. In this way, the questionnaire describe 16 different situations relating to family, peers, certain outside persons, antisocial characters, Police and court result of the pilot study indicated, and several Psychologists opened that all 16 question were tired enough as aggression questions, A.Q was supplied to the subjects they were given all the instructions as Laid down the test manual to fill up their response.

Reliability:

Reliability coefficient of the Aggression Questionnaire was calculated by split half method of the 16 Questions 8 odd 3 even questions supplied the halves.

The correlation for a group of 225 subjects was calculated, which showed a good measure of reliability. The result is as follows:-

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>N</th>
<th>Split</th>
<th>Halves</th>
<th>R for spilt half</th>
<th>R for the Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire 225 odd even</td>
<td>.55</td>
<td>.71</td>
<td>Aggression</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Validity:

To find out validity coefficient of the Aggression Questionnaire, it was compared with statement to questionnaire of aggression borrowed from Murray of Psychologists, clinical Psychologists and student of Psychology and Clinical Psychology of National institute of Mental Health and Neuro-Sciences, Bangalore. Subject were administered both questionnaire successively. They answered the question of aggression questionnaire in the manner describe earlier. They appraised or scaled the statements of aggression on a six point scale, as these applied to them, the scale was adapted from Murray as given in the Psychological in Sight feet’

The result is given below:-

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Comparable N Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearsonian ‘r’</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Aggression Statement in 19 Psychiatrists &amp; Clinical Psychologists</td>
<td>323</td>
</tr>
</tbody>
</table>

III. Scoring:

The questions admit of three possible replies. Indicates Low to mild aggressive, Moderate aggressive and high aggressive trends. Those may be easily scored as 1, 2, 3. The distances between 1 and 2 and 2 and 3 are mathematically equal. This equality should be expected in the distance between Low to Mildly aggressive and moderately aggressive and between moderately aggressive and highly aggressive trends, for these to be scores as 1, 2 and 3, the idea of equal distances between them may not be tenable. The theoretical propositions indicate a greater distance between moderate aggression and high aggression than between Low- Mild aggression and moderate aggression. Therefore,
scoring alternatives as 1, 2 and 3 is not used and ‘Sigma deviate’ weighting Method as formulated by Likert is used by this method. Scoring Schedule is prepared to score individual performance.

2. **Level of Aspiration Measure:**

   In order to realize the objectives of the present investigation, it was necessary to employ such tests of aspiration level that could objectively measure the aspiration level of the subjects. In the selection of the test consideration was also given that the test must be easily available, highly reliable and valid for the population under the present investigation should have similar test and require a lesser time to complete, for searching such test, a number of level of aspiration scales were standard and analysed and finally with the consultation of the guide Level of aspiration measure by Dr M.A shah and Dr. Mahesh Bhargava (1988) was adopted for this study.

   This is an objectively score able test. The first page of the Level of aspiration booklet contains general information for the tester, instructions to the respondent and the scoring table while remaining eleven pages contain the performance sheet of this measure which are arranged in order of trial numbers.

   The performance sheet has fifty circles which are arranged in five rows, ten in each row. Above and below of these rows, there are two boxes on the right side – The upper box is for writing the number of expected score (except in practice trail) where as lower box is for putting the number of actual score or complete the performance. Thus ten trails are needed for each subject except practice trial, stop watch and clock is also required for the test.

**Reliability of the test:**

The reliability of this measure is reported by the author of the test.
test retest method and the spilt half method (co-relating the first half with the second half trails, the reliability by the test-retest method is G O S = .88 A.DS=0.82 and N TR= .86 and by the split half method is GDS= .77, ADS=.69 and NTR = .78.

Validity:

Muthaya (1959) writes Level of aspiration behavior remains constant regard less of the means used to measure it. “Its argument is understandable because question of validity arises when a behavior is inferred from another behavior indirectly. In this situation, the respondent is involved in actual task proposed by him and situation is by and large realistic for him. The authors tried to find out the validity. Co efficient with few tasks and available allied tests of aspirations and it is reported in table 3.2.

<table>
<thead>
<tr>
<th>SR.NO</th>
<th>External Validating Criteria</th>
<th>N</th>
<th>GDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Card sorting tray tasks</td>
<td>30</td>
<td>.58</td>
</tr>
<tr>
<td>2</td>
<td>Ansari and Ansari the Level of aspiration coding test.</td>
<td>60</td>
<td>.73</td>
</tr>
<tr>
<td>3</td>
<td>V.P Bhargava Level of aspiration and J.S Grewal based on coding method occupational aspiration scale</td>
<td>60</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60</td>
<td>.76</td>
</tr>
<tr>
<td>4</td>
<td>Sharma &amp; Gupta Educational Scale Form</td>
<td>60</td>
<td>.48</td>
</tr>
<tr>
<td>5</td>
<td>Des Mohan Projective Testing Achievement Motivation (N-a eh)</td>
<td>40</td>
<td>.72</td>
</tr>
<tr>
<td>6</td>
<td>TR Sharma Academic Achievement male group</td>
<td>40</td>
<td>78</td>
</tr>
<tr>
<td>7</td>
<td>female group Vent out motivation test AMT</td>
<td>80</td>
<td>.84</td>
</tr>
</tbody>
</table>

Since all obtained r-values between the measure of Level of aspiration and different external criteria are found significant at 0.1
Level, Hence the test is having the satisfactory validity.

3.2.2 Physiological measurements were taken of the entire subjects with following tools:

1. Blood Pressure Measurement (Both) with sphygmomanometer and Stethoscope.

2. Digital Pulse Rate Monitor / Stop watch.

**Physiological Measurements:**

**Blood Pressure**

**Equipment:**

Sphygmomanometer, Stethoscope, Digital Blood Pressure Machines.

**Procedure:**

The measurement of systolic and diastolic blood pressure is relatively simple. The cuff of the sphygmomanometer is wrapped around the bare with above the elbow with the earphones of the stethoscope in the tester’s ear; the bare of scope is placed on the brachial artery, just below the hollow of the elbow. The cuff is pumped up until the artery has been collapsed i.e. no pulse beat can be heard pressure is than slow to released the tester watches the gauge or mercury column, when the pulse is heard, the reading in Millimeters of Mercury at that instant it is recorded as a systolic pressure.

The tester continues to slowly release pressure until a very dull, weak beat is noted at that instant the pressure in millimeters of mercury is noted, which represents the Diastolic pressure. The measure is recorded with the systolic pressure first than the diastolic pressure.
Pulse Rate Measurements:

Equipment: Digital pulse rate monitor, stop watch.

Procedure:- The pulse is usually taken from the radial or carotid artery in both the cases.

Two or three figures should be used to feel the pulse, rather than one’s thumb, due to the possible confusion arising from thumb. The carotid artery is located immediately below the angle of Jaw. The radial pulse is found in the hollow on thumb side of the wrist about one inch from the base of the thumb of the subject. It is important than counter not press too hard on the carotid artery. So that a reaction to pressure does not produce on alternation in the beat.

The person whose pulse is being counted must remain silent and refrain from coughing or talking since this affects pulse rate besides the accurate testing the subject should practice at next two time.

3.3.3. ANTHROPOMETRIC VARIABLE

1. Age
2. Body weight

LINEAR MEASUREMENTS

3. Height
4. Total arm length
5. Total leg length

BODY CIRCUMFERENCES (GIRTH)

6. Upper arm Circumference
7. Forearm Circumference
8. Thigh Circumference
9. Calf Circumference
BONE DIAMETERS

10. Elbow Diameter
11. Wrist Diameter
12. Knee Diameter
13. Ankle Diameter

SKIN FOLD MEASUREMENTS

14. Biceps Skin fold
15. Triceps Skin fold
16. Sub Scapular Skin fold
17. Supra-iliac Skin fold
18. Thigh Skin fold
19. Calf Skin fold

To examine the combined effect, the investigator has divided 200 Hockey & Foot Ball male players into two groups according to their game. The grouping was made after examine their performance level given on the prescribe Performa and which was duly verified from the record of colleges, universities and state Hockey & Foot Ball associations.

TOOLS USED

For collecting data the following tools and instruments were used:

1. To measure anthropometric variables, anthropometer manufactured by Anand Agencies, Pune, India was used. This is standard equipment used by research scholar in the various bodies of India.

2. Diameters were taken with the help of Venire Caliper and Anthropometer Compass.
3. The “Lange’s skin fold caliper” was used to measure the skin fold thickness.

4. Standard stopwatch manufactured by Anglo-Swiss watch company, Standard weighing machine as approved by Govt. of India, Standard Steel tape (Freeman Company) etc. for measuring the time, body weight and distance.

5. All the anthropometric measurements were taken to the left side of the individual on the standard techniques described for each measurement by Weiner and Laurie (1969). All the measurements were recorded to the nearest of centimeter, millimeter and 1/10 of the second.

TEST DESCRIPTION

Anthropometric Measurements:

The techniques used for taking various measurements are as follow:

1. **Age:**

   The age of each subject was calculated from the date of birth given or indicated in her secondary school certificate or from service record of the subjects and complete number of years after birth was considered as the chronological age of the subject.

2. **Body Weight:**

   The subject, wearing minimal clothing for measuring body weight, stood erect in the center of the platform of a portable weighing machine and the weight was recorded. The needle at zero was checked before taking weight of each sports woman. The measurement was recorded in Kilograms, nearest to half a Kilogram.
3. **Stature**:

   It is the vertical distance from the vertex to the horizontal floor. The measurement was taken with the individual standing straight against an upright wall touching it with heels, buttocks and back. The head was oriented in the Frankfort Plane (Upper border of the ear opening and the lower border of the eye socket on a horizontal line and the heels were together. The subject was stretched upwards by a gentle traction on the mastoid region, taking care that the heels were kept touching on the ground. The anthropometer was held vertically in front of the subject in mid-sagittal plane and the horizontal movable bar was brought down to touch the point vertex. The stature was measured in centimeters.

4. **Total Arm Length**:

   It is the distance between acromion point and dectylion point. The subject was asked to stand in a comfortable position. One end of the anthropometer was fixed at acromion point and the anthropometer was adjusted up to dectylion point. The reading was recorded up to nearest 1/10 of a centimeter.

5. **Total Leg Length**:

   The distance between the anterior superior iliac spine and the standing surface was measured with the anthropometric rod when the subject is in the same position as that for stature and reading was recorded up to nearest 1/10 of a centimeter.

**BODY CIRCUMFERENCES**

6. **Upper Arm Circumference**:

   With the arm extended and hanging loosely at the side of the
subject, the circumference was measured with a flexible steel tape at
the level halfway between the tip of acromion and olecranon in
centimeters.

7. **Forearm Circumference** :

Maximal girth of forearm was measured with a flexible steel
tape. The subject was asked to keep elbow extended, the forearm
supinated and fingers extended. The circumference was measured in
centimeters.

8. **Thigh Circumference** :

It was measured just below the gluteus fold or maximal thigh
girth. Subject was asked to stand in a relaxed position with feet slightly
apart and weight equally distributed on both the feet. Steel tape was
located horizontally around the left thigh at a point of greatest girth.
Reading was made to nearest 1/10 of a centimeter.

9. **Calf Circumference** :

The maximum circumference of calf was measured with the help
of a steel tape, when the subject was standing with her feet slightly
apart and her weight equally distributed on both the legs. Reading was
made to nearest 1/10 of a centimeter.

**BODY DIAMETERS**

10. **Elbow Diameter** :

The individual was asked to stand in an erect position. The
elbow was raised horizontally and fore arm at 90°. The distance
between the medial and lateral epicondyles was measured with the help
of venire caliper with slight pressure on the cross bar up to 1/10 of a
centimeter.
11. **Wrist Diameter:**

The individual was asked to stand in an erect position. The arm was raised horizontally at 90°. The distance between triquetral and scaphoid of lateral and medial edges was measured with the help of venire caliper with slight pressure on the cross bar up to 1/10 of a centimeter.

12. **Knee Diameter:**

With the individual seated on a table and the knee bent at right angle, greatest distance between the lateral and medial epicondyles of the femur was measured with the help of venire caliper with pressure of the cross bar up to 1/10 of a centimeter.

13. **Ankle Diameter:**

It is the straight distance between the medial tibia and lateral malleolli of the fibula. The venire caliper was used to measure the ankle diameter. The measurement was taken up to 1/10 of a centimeter.

**SKIN FOLD MEASUREMENTS**

All the skin fold measurements were taken with the help of a skin fold caliper. All the limb skin folds were measured exactly at the same level where the respective circumferences were taken. For every measurement a fold of skin and subcutaneous tissue was picked up firmly between thumb and forefinger of the left hand and pulled away from the underlying muscle. The edges of the plates of the branches of the caliper were applied 1 cm. below the fingers of the left hand and allowed to exert their full pressure before reading the thickness of the fold. The subject stood relaxed, except for the calf skin fold which was taken with the subject seated. All the skin folds where side was
involved were taken on the left side of the subject. In the present investigation the following skin fold measurements were selected.

14. **Biceps Skin fold:**

   A fold midway between the acromion and olecranon processes on the anterior aspect; the arm was the anatomical landmark for the sites for skin fold measurement of the biceps. The fold ran parallel to the length of the arm. The measurement of biceps was taken by holding the skin fold at this site. Special care was taken not to grasp the underlying muscular tissues. The reading on the calibrated was noted in millimeter.

15. **Triceps Skin fold:**

   This measurement was taken on the posterior surface of the arm at the level of biceps skin fold with the subject in the same position in millimeter.

16. **Sub-scapular Skin fold:**

   It is a measurement of the skin fold running parallel to the axillary border. The measurement was taken at the inferior angle of the scapula. The thickness of this fold was measured with the help of skin fold caliper in millimeter.

17. **Supra-iliac Skin fold:**

   It is the measurement of the vertical fold on the crest of illium at the midaxillary line. The thickness of this fold was measured by the skin fold caliper. The skin fold was held firmly between the thumb and finger at $45^0$ to the anterior supra-iliac spine on a diagonal line going downward and inward and the measurement was taken with the help of caliper in millimeter.
18. **Thigh Skin fold:**

This skin fold measurement was taken on the anterior surface midway between the mid-inguinal point and the superior border of patella. The subject was asked to stand in a relaxed position. The measurement was taken in millimeter.

19. **Calf Skin fold:**

The vertical fold was picked up on the posterior side of the lower leg at the level of the maximum girth of the calf and measurements were recorded in millimeter.

**RELIABILITY OF DATA**

Establishing the instrument reliability ensured the reliability of data.

**INSTRUMENT RELIABILITY**

Measuring steel tape, skin fold caliper, venire caliper, anthropometric rod and stop watches used in the study were obtained from standard firm and most of the instruments were available in the research laboratory of Department of Physical Education, Kurukshetra University, Kurukshetra and Guru Nanak Khalsa College, Yamuna Nagar. Their calibration was accepted as accurate enough for the purpose of study.

**RELIABILITY OF MEASUREMENT**

To ensure that the investigator was well versed in the techniques of conducting the tests, she had a number of practice sessions in the testing procedure under the guidance of the expert, Dr. M.S Chauhan, Prof (Rtd) and DR R.K Bhatia Rtd. (Reader) from Department of Physical Education, Kurukshetra University, Kurukshetra. The measurements for different sites i.e. linear measurements,
circumferences, diameters and skin folds were taken and recorded. After two days, the same measurements were taken on the same subjects and under the similar conditions. Then the co-efficient of correlation by ‘Pearson’s product moment method’ was calculated, which provide the reliability.

**Co-efficient of Correlations of Measurements of Equipments Used are Shown in Following Tables:**

**Table 3.3**

*(Reliability Co-efficient of Correlation)*

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Variable Correlated</th>
<th>Co-efficient of Co-relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td>.95</td>
</tr>
<tr>
<td>2</td>
<td>Weight of Body</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td><strong>Linear Measurements</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Height</td>
<td>.94</td>
</tr>
<tr>
<td>4</td>
<td>Total arm length</td>
<td>.94</td>
</tr>
<tr>
<td>5</td>
<td>Total leg length</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td><strong>Body Circumferences (Girth)</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Upper arm circumference</td>
<td>.92</td>
</tr>
<tr>
<td>7</td>
<td>Forearm Circumference</td>
<td>.90</td>
</tr>
<tr>
<td>8</td>
<td>Thigh Circumference</td>
<td>.94</td>
</tr>
<tr>
<td>9</td>
<td>Calf Circumference</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td><strong>Bone Diameters</strong></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Elbow Diameter</td>
<td>.91</td>
</tr>
<tr>
<td>11</td>
<td>Wrist Diameter</td>
<td>.89</td>
</tr>
<tr>
<td>12</td>
<td>Knee Diameter</td>
<td>.96</td>
</tr>
<tr>
<td>13</td>
<td>Ankle Diameter</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td><strong>Skin fold Measurements</strong></td>
<td></td>
</tr>
</tbody>
</table>
As use evident from table 3.1 the co-efficient of correlations are significant at 1% level. It is evident that testing reliability was significantly high. This establishes the competency of the scholar to administrate the test.

**SUBJECT RELIABILITY**

The above test-retest co-efficient of correlations method also established that subject reliability was significant at 0.01 Level as the same subjects were used under similar conditions by the same tester and no motivational techniques were used nor any training was given.

**4. Collection of Data.**

**Administration of tests:**

The major task before the investigator in the present study was to administer in the tools can the subjects in a homely manner as possible with a view to get objective and true responses, therefore investigator first establish. Personal contacts with Hockey and Foot Ball players with the help of physical education teachers and coaches in their place of coaching/Playing/ the investigator have achieved a certain degree of support with that.
After selecting the sample of study and before the conduct in tests. The purpose of testing and its method and technique to be employed in the study on the subjects were explained and possible doubts were cleared. The subjects were assured that the information obtained through the scale would be kept confidential, and it would be used for research purpose only, and would not harm than in any case, they were urged to feel free, giving reply every question and give measurements without any tension and sincerely.

The subject showed keenness and promised to give full co-operation to the research scholar. For the venture the procedure were used to collect the data on the difference variables all reely given in earlier pages the anthropometric variables were measured and taken with the help of standard instruments produced by Anand agencies pune, available at G.N.Khalsa college and with the procedure described by Dr.Sodhi (1991).

**Criterion Measures :**

The Criterion Measures were used to collect the data in a systematic way to record in the correct unit and style for each test item.

Pulse rate of the subjects were measured with the help of digital monometer and stop watched and measurement was scored in number of pulse per minute.

Blood Pressure was measured by using digital blood pressure apparatus. The unit was measured in MM of HG for Anthropometric variables all the segments of body of left side were considered for taking the measurement of individual.

The necessary anatomical Land Masks were marked with a skin marking pencil. One technique and description of the measurement were already given in earlier page.
Statistical Procedure:-

A descriptive measure was given for the variables related to Hockey & Foot Ball players of intercollegiate and state Levels of Participants. Significances of the mean Psychological, Physiological and Anthropometry measurements were obtained by employ test of significance and were made according to the requirement of the present study as per the statistical techniques. Simple techniques like mean and S.D were used to find out the nature of difference in variables as manifested in the response of Hockey and Foot Ball players.