CHAPTER-III

METHODOLOGY

In this chapter the procedure adopted for selection of subjects, selection of variables, criterion measures, reliability of data, collection of data, administration of tests, design of the study and statistical procedure used for analyzing data are presented.

3.1 SELECTION OF SUBJECTS

Forty eight Kabaddi inter-university male players were selected as subject for this study. The subjects were selected from Kurukshetra University, Kurukshetra, Haryana; Chaudhary Charan Singh (CCS) University, Meerut, Uttar Pradesh; Maharshi Dayanand (M.D.) University, Rohtak, Haryana; and Periyar University, Salem, Tamilnadu who had league entered teams namely Winners, Runners, III Place and IV Place. Twelve players each from the team who had played in the All India Inter-university Competition during the year 2008-09 organized by Swami Ramanand Teerth Marathwada University, Nandeed from 23rd to 27th January 2009. The age level of the subjects ranged from 18 to 25 years. All the subjects belonged to different socio-economic conditions.

3.2 SELECTION OF VARIABLES

The research scholar had gone through the scientific literature pertaining to the analysis of anthropometric measurements, motor fitness, physiological and psychological variables from different sources and also consulted the experts in these areas. Along with the said literature and expert opinion, the administrative feasibility in terms of availability of instruments
and expertise for measuring and recording of data was also given due consideration while selecting anthropometric measurements, motor performance, physiological and psychological variables.

Based on the above mentioned criteria the following variables were selected for the purpose of the study:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tests</th>
</tr>
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<tbody>
<tr>
<td><strong>Anthropometric Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>-</td>
</tr>
<tr>
<td>Weight</td>
<td>-</td>
</tr>
<tr>
<td>Chest girth</td>
<td>-</td>
</tr>
<tr>
<td>Upper arm girth</td>
<td>-</td>
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<tr>
<td>Thigh girth</td>
<td>-</td>
</tr>
<tr>
<td>Outer leg length</td>
<td>-</td>
</tr>
<tr>
<td>Fat Percentage</td>
<td>-</td>
</tr>
<tr>
<td><strong>Motor Fitness</strong></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>50 M. dash or Run</td>
</tr>
<tr>
<td>Agility</td>
<td>4 x 10m. Shuttle run</td>
</tr>
<tr>
<td>Movement Time</td>
<td>Circle Run</td>
</tr>
<tr>
<td>Strength</td>
<td>Pull ups</td>
</tr>
<tr>
<td>Leg Power</td>
<td>Standing Broad Jump</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Sit and Reach Test</td>
</tr>
<tr>
<td><strong>Physiological variables</strong></td>
<td></td>
</tr>
<tr>
<td>Vital capacity</td>
<td>Wet Spirometry test</td>
</tr>
<tr>
<td>Forced Expiratory Flow (Value)</td>
<td>Peak Flow meter</td>
</tr>
<tr>
<td>Pulse rate</td>
<td>Resting pulse rate</td>
</tr>
<tr>
<td><strong>Psychological variables</strong></td>
<td></td>
</tr>
<tr>
<td>Sports Competition Anxiety</td>
<td>SCAT Questionnaire</td>
</tr>
<tr>
<td>Sports Achievement Motivation</td>
<td>SAMT Questionnaire</td>
</tr>
</tbody>
</table>
3.3 CRITERION MEASURES

The following where the criterion measures chosen for testing the hypothesis:

**Anthropometric Variables:**

1. **Body Weight:** It was recorded correct to the nearest half kilograms with the help of the weighing machine.

2. **Standing Height:** It was recorded to the nearest half centimeter, with the help of wall scale.

3. **Chest Girth:** It was recorded correct to the nearest half centimeter with the help of flexible steel tape.

4. **Upper arm Girth:** It was recorded correct to the nearest half centimeter with the help of flexible steel tape.

5. **Thigh Girth:** It was recorded correct to the nearest half centimeter with the help of flexible steel tape.

6. **Outer Leg Length:** It was recorded correct to the nearest half centimeter, with the help of flexible steel tape.

7. The thickness of four sites (biceps, thigh, abdominal and superailiac) was added and the sum was converted into fat percentage.

**Motor Fitness variables**

1. **Speed:** It was measured by administering 50 Meters dash to the nearest 1/100th of a second.

2. **Agility:** It was measured by administering 4 x 10 meters shuttle run to nearest 1/100th of a second.
3. **Movement Time:** It was measured by administering Circle Run to nearest 1/100th of a second.

4. **Shoulder Strength:** It was measured by administering Pull up test and the number of correctly done pull ups was recorded as the score in numbers.

5. **Leg Explosive Power:** It was measured by administering Standing Broad scored in meters.

6. **Flexibilty:** it was measured by administering Sit and Reach Test to nearest centimeter.

**Physiological Variables**

1. **Vital capacity:** It was recorded with the help of wet Spiro meter nearest to one tenth of a liter.

2. **Expiratory flow rate:** It was recorded in millimeters with the help of apparatus peak flow meter and the nose clip.

3. **Pulse Rate:** It was recorded the number of pulse per minute during resting condition.

**Psychological Variables**

1. Sports Achievement Motivation was measured by using SAMT questionnaire and converting the responses into numbers by using answer keys.

2. Sports Competition Anxiety was measured by using SCAT questionnaire and converting the responses into numbers by using answer keys.
3.4 RELIABILITY OF DATA

The reliability of data was ensured by estimating the instrument reliability, tester's competency and reliability of tests.

3.4.1 Instrument Reliability

The steel tape and calipers used for anthropometric measurements namely, standing height, chest girth, upper arm girth, thigh girth and outer leg length of body and also measure the performance of the subjects in standing broad jump was non-elastic and flexible which was calibrated and approved for use by competent authority.

The stop watches were all calibrated and who used for measuring the performance of subjects in 50 Mtrs. Dash, Shuttle Run and Circle Run. For the sit and reach test constructed box (12 x 12 x 21) with measuring scale in which 23 centimeter is at the level of the feet.

A digital weighing machine was used for measuring the body weight, after calibration. In order to measure the body fat, skin fold caliper was used after calibration and found accurate.

In order to measure the physiological variables, a standard Wet Spirometer was used to measure the Vital Capacity; it was calibrated after every subject was tested, for its accuracy. The operation of the peak flow meter was taught by an experienced expert and the investigator learnt the procedures and methods to handle and operate the instruments to administer the test. Measurements were taken by the investigator himself and with the help of services rendered by specially trained physical education teachers by
using the equipments. The pulse rate test was counted through an automatic 
blood pressure instrument which has the pulse rate counter.

All the instruments were calibrated and thus accepted and made to be 
accurate enough for the purpose of the study.

3.4.2 Tester Competency:

To ensure that the investigator was well versed with the techniques of 
conducting the tests and taking the measurements, the investigator had a 
number of practice sessions in testing procedures under the guidance of an 
expert. All the measurements and tests were conducted by the investigator 
with the assistance of kabaddi coaches and specially trained physical 
education teachers who were also well acquainted with the tests and 
measurements.

Tester reliability in conducting anthropometric measurement, motor 
fitness, physiological and psychological variables were established by test 
retest process thereby consistencies of results were obtained by Pearson’s 
Coefficient of Correlation of 20 subjects. The coefficients are presented in 
Table-3.2
Table 3.2
Reliability Coefficients of Test-Retest Scores of Selected Anthropometric Measurements, Motor Performance, Physiological and Psychological Variables

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variables</th>
<th>Coefficient of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Anthropometric Measurements</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Height</td>
<td>0.91</td>
</tr>
<tr>
<td>2.</td>
<td>Weight</td>
<td>0.90</td>
</tr>
<tr>
<td>3.</td>
<td>Chest girth</td>
<td>0.88</td>
</tr>
<tr>
<td>4.</td>
<td>Upper arm girth</td>
<td>0.89</td>
</tr>
<tr>
<td>5.</td>
<td>Thigh girth</td>
<td>0.90</td>
</tr>
<tr>
<td>6.</td>
<td>Outer leg length</td>
<td>0.91</td>
</tr>
<tr>
<td>7.</td>
<td>Fat Percentage</td>
<td>0.85</td>
</tr>
<tr>
<td>B</td>
<td>Motor Fitness</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Speed</td>
<td>0.84</td>
</tr>
<tr>
<td>9.</td>
<td>Agility</td>
<td>0.90</td>
</tr>
<tr>
<td>10.</td>
<td>Movement Time</td>
<td>0.83</td>
</tr>
<tr>
<td>11.</td>
<td>Strength</td>
<td>0.91</td>
</tr>
<tr>
<td>12.</td>
<td>Leg Power</td>
<td>0.83</td>
</tr>
<tr>
<td>13.</td>
<td>Flexibility</td>
<td>0.88</td>
</tr>
<tr>
<td>C</td>
<td>Physiological Variables</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Vital capacity</td>
<td>0.92</td>
</tr>
<tr>
<td>15.</td>
<td>Forced Expiratory Flow</td>
<td>0.90</td>
</tr>
<tr>
<td>16.</td>
<td>Pulse rate</td>
<td>0.89</td>
</tr>
<tr>
<td>D</td>
<td>Psychological Variables</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Sports Competition Anxiety</td>
<td>0.91</td>
</tr>
<tr>
<td>18.</td>
<td>Sports Achievement Motivation</td>
<td>0.90</td>
</tr>
</tbody>
</table>
From the test, retest coefficients of correlation (Table-3.2) it is obvious that the tester reliability was significantly high establishing the competency of the scholar to administer the tests. The coefficients of correlation also indicated the reliability of the tests selected, as very high correlations were obtained when the tests were repeated.

### 3.5 COLLECTION OF DATA

Before the administration of tests the research scholar personally met the Kabaddi players after the tournament and they were advised to assemble at room for conducting the tests. The research scholar briefly explained the test items. There was no ambiguity regarding tests all the subjects cooperated voluntarily. The test was conducted before competition for four days in each place only in the evening session before competition. The relevant data regarding anthropometric measurements and motor fitness components of kabaddi inter-university players were collected personally and with the help of experts and special trained physical education teachers. For the Sports Competition Anxiety the researcher administers the questionnaire before competition.

### 3.6 ADMINISTRATION OF TESTS

The tests for anthropometry, motor performance, physiological and psychological variables were conducted at the classrooms, college grounds, stadia, wherever adequate facilities to conduct the tests were found.

Before the conduct of every test, the subjects were assembled at the testing venue and the purpose of the test was explained to them. The investigator took the help of research scholar for conducting the test. Demonstration of all the tests was given before the subjects and all sorts of
efforts were made by the research scholar to ensure accuracy and uniformity in the administration of the test. A short warm up period of eight to ten minutes duration was given to the subjects before the conduct of the every motor fitness test. All the tests were conducted on each subject.

A. Anthropometric Variables

1. Standing Height

**Purpose:**

To measure the standing height of the subject.

**Equipment:**

Wall Scale and hard board.

**Procedure:**

The height of the subject was measured with subject standing erect without shoes against a wall marked scale. The subjects were instructed to keep the heels together body touching the wall with heels, buttocks and back, head erect without tilt and to take and hold a full breath and standing erect while height measurement was taken. A stiff hard board was held horizontally on his head, slightly pressing the head and touching the scale marked on the wall, at right angle. The subject was asked to step out by lowering the head and reading indicated by the lower end of the hard board was taken.

**Scoring:**

Height was recorded correctly to the nearest half of a centimeter.¹

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2. **Body Weight**

**Purpose:**

To measure the weight of the subject.

**Equipment:**

Calibrated weighting machine

**Procedure:**

The weight of the subject was taken with a lever tight laboratory anthropometric weighing machine. The subject wearing shorts and vest only stood at the centre of the machine and the weight was recorded from the indicator needle of the dial.

**Scoring:**

The weight was read and recorded correct nearest to a half of a kilogram.

3. **Chest Girth**

**Purpose:**

To measure the chest girth of the subject.

**Procedure:**

The subject slightly abducts his arms to permit the researcher facing to pass the tape around his chest; the tape and housing held in the right hand while the researcher's left hand adjusts the tape at the subject's back to the horizontal level of the marked mesoternale. The cross-handed technique is used to put the tape scale in juxtaposition with the zero on the stub and of the tape. The reading is obtained at the end tidal of a normal expiration.

**Scoring**

Chest girth was measured and recorded in nearest half centimeter.

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2 Carter *Loc.Cit.*
4. **Upper Arm Girth:**

**Purpose:**

To measure the upper arm girth of the subject.

**Procedure:**

The measurement of upper arm girth was taken with a steel tape; it was measured at the thickest part above the elbow joint. This level was marked on the skin first then tape was placed around the arm, so that it was in light contact with the skin all around. The arm was hung down loosely at the side relaxed.

**Scoring**

Upper arm girth was measured and recorded in the nearest half centimeter.

5. **Thigh Girth**

**Purpose:**

To measure the thigh girth of the subject.

**Procedure:**

It was the perimeter of the thigh with the subject standing erect, legs slightly apart with the body weight equally distributed on both feet. The tape is raised to the level one to two centimeters below the gluteal line, or the arbitrary join of the gluteal muscle protuberance with the thigh. A cross-handed technique is used to raise the tape to this level on the inner thigh, and then the tape is read when the stub end is brought in juxtaposition to the housing end. In this, tape is fixed to assure the measure is made perpendicular to the long axis of the femur.

**Scoring:**

Thigh girth was measured and recorded in the nearest half a centimeter.
6. **Outer Leg Length**

**Purpose:**

To measure the outer leg length of the subject.

**Procedure:**

The subject was measured from the top of the waistband in a straight line down to the desired length (usually slightly above the ground when barefoot: if wearing shoes, slightly above the top of the heel).

**Scoring:**

Outer leg length was measured and recorded in the nearest half a centimeter.

1. **Skinfold Measurements (Fat Percentage):**

**Purpose:**

The purpose of the test was to measure the percentage of the body fat of the subjects. The right side of the body was used to determine the percentage of fat. The thickness of the skin and subcutaneous fat was grasped between the thumb and index finger and measurement was taken to the nearest millimeter and recorded. For the purpose of measuring the skin folds, a standard and calibrated skin fold calipers was used.

**a. Biceps Skinfold**

The bicep skinfold site is one of the common locations used for the assessment of body fat using skinfold calipers. At the level of the mid-point between the acromiale (lateral edge of the acromial process, e.g. bony tip of shoulder) and the radiale (proximal and lateral border of the radius bone,
approximately the elbow joint), on the mid-line of the anterior (front) surface of the arm (over the biceps muscle). The arm should be relaxed with the palm of the hand facing forwards. A vertical pinch, parallel to the long axis of the arm, is made at the landmark.

b. **Abdominal Skinfold**

The abdominal skinfold site is one of the common locations used for the assessment of body fat using skinfold calipers. A mark is made 5 cm adjacent to the umbilicus (belly-button), to the right side. See notes below about alternate sites. The vertical pinch is made at the marked site, and the calipers placed just below the pinch. Be careful not to place the caliper or fingers inside the navel.

c. **Thigh Skinfold**

The anterior thigh skinfold site (also called the front thigh or mid thigh) is one of the common locations used for the assessment of body fat using skinfold calipers. Less commonly the posterior thigh site is used, and another site on the leg is the patella or knee cap site (details below). The mid-point of the anterior (front) surface of the thigh, midway between patella (knee cap) and inguinal fold (crease at top of thigh). A vertical pinch is taken. This measurement is normally taken with the subject sitting and the knee bent at right angles. If there is difficulty in lifting a fold of skin, it may be easier with the leg extended, or with the thigh supported from below by the subject.

d. **Supra Iliac Skin fold**

The supraspinale skinfold site is one of the common locations used for the assessment of body fat using skinfold calipers. It has previously been
known as the Suprailiac site. The intersection of a line joining the spinale (front part of iliac crest) and the anterior (front) part of the axilla (armpit), and a horizontal line at the level of the iliac crest. The pinch is directed medially (towards the centerline) and downward, following the natural fold of the skin (at an approximate angle of 45 degrees).

Determining the body fat percentage, equation developed Jackson and Pollock (1978) for predicting body density from skinfold measurements and adapted by YMCA (Golding, Myers, and Sinning 1989) was used.
B. Motor Fitness

1. Speed (50 Meter dash)

Purpose:

The 50 meter dash has been considered to be the best measure of running speed.¹

Equipments:

Stopwatch and Clapper

Procedure:

The subject started together to have the competitive performance. The subjects were asked to stand on the starting line and take a standing start. The clapper was clapped after the caution ‘Ready’. The starter stood in such a position so that the ‘V’ of the clapper was visible to the time keeper. As the ‘V’ of the clapper was closed, the time keepers started their stop watches at the finish line. The subject ran as fast as they could and stop watches stopped as soon as torso touches the finish line.

Scoring:

The time taken by the subjects from the starting line to the finish line was recorded to the nearest 1/10-0th of a second as the running speed score.

2. **Agility test (4 x 10 meters Shuttle Run):**

**Purpose:**

The purpose of the shuttle run was to measure the agility of the performer in running and changing direction.\(^4\)

**Equipment:**

Measuring tape, stop watches and wooden blocks.

**Procedure:**

Each subject was asked to start behind the starting line after the signal ‘go’. The subject ran from starting line to blocks which were placed at a distance of 10 meters from starting line and pick one of the block, returned to the starting line and placed the block behind the line. The same process was repeated in the second block. Two trials were permitted for each subject.

**Scoring:**

The score for each subject was the time taken to complete the distance 4 x 10 meter shuttle run measured in the nearest 1/100\(^{th}\) of a second. Two trials were given, the best out of the two recorded times was taken as subjects score.

3. **Movement Time (Circle Run Test)**

**Purpose:**

To measure the movement time of the subject.

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Equipment:

Circle, Rope, powder and tape.

Procedure:

This test proposed to measure the speed with which the subject could change his direction of body movement continuously. A circle 12 feet in diameter was made on the floor. A starting point was marked on the circumference of the circle on the signal ‘g’ the subject ran clockwise around the outside of the circle, when he returned to the starting point he had completed one round.

Scoring:

For finishing one round how much seconds taken to complete the circle is counted by seconds.

4. Pull Ups (Test of Strength)

Purpose:

To measure the shoulder strength of the subjects.

Equipment:

Pull-ups bar and Chair.

Procedure:

The subject was made to hang on a horizontal bar with palms facing forward. The subject was asked to pull his body upward by bending the elbows until the chin reached the bar and then back to the initial stage. This continued for a maximum number of times without swinging the body.
**Rules applicable:**

1. With the start signal the subject should go on for hanging position.
2. The subject is not permitted to kick jerk or use a skip motion.
3. If the subject is not able to pull up his body all the way up or straighten his arms completely while coming down, the same should be counted as half-a-pull up and only four half counts is permitted for one subject.

**Scoring:**

The number of correctly done pull-ups was recorded as the score.

5. **Leg Explosive Power (Standing Broad Jump):**

**Purpose:**

To measure the explosive strength of the legs of the subjects.

**Equipment:**

A long jump landing pit with sand, a measuring tape and a take off line was marked in front of the pit 50 centimeter away.

**Procedure:**

The subject stood behind the take off line with feet parallel to each other. The performer flexed his knees and took his arms backward, then with a vigorous forward swing of arms and extension of flexed knees he took off in one chance and jumped on the landing pit as far forward as possible. These trials were given after adequate rest.

**Scoring:**

Best of the three trials in meters was considered as the performance of the subject in the test.⁵

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6. **Flexibility (Sit and Reach Test):**

**Purpose:**

To measure the flexibility of the subjects.

**Equipment:**

Constructed box (12” x 12” x 21”) with measuring scale in which 23 centimeter is at the level of the feet.

**Procedure:**

The subjects were asked to remove their foot wears and assume the long sitting position with the knees fully extended and feet against the apparatus with shoulder width apart. The subject’s arms were extended forward with one hand placed on top of the other, palms down, bending toward along with the measuring scale. Subjects were instructed to keep the palms even and slowly stretch forward four times and hold the position of maximum reach as the fourth count. The maximum reach was held for one second with the knees in full extension while the feet are in contact with the apparatus.

**Scoring:**

The point zero was kept on the edge of the apparatus on the top, where the subjects kept their feet. From the zero point towards the other end of the apparatus it was marked positive and towards the body of the subject it was negative. If the subjects were unable to reach the top of the apparatus with their finger tips where zero was marked, the distance was counted in minus and if the subject crossed zero point further forward the maximum distance reached was measured to the nearest centimeter as positive.6

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C. **Physiological Variables**

1. **Vital Capacity:**

**Purpose:**

To measure the lung capacity of the performer.

**Equipment:**

Wet Spirometer, mouth pieces

**Procedure:**

After a couple of normal breaths the subjects took a deep breath and exhale into wet spirometer as forcefully as possible. The ejection of air was read off the scale attached to wet spirometer. The care had been taken to prevent escaping air either through the nose or around the edge of the mouthpiece.

**Scoring:**

The score was recorded in liters as indicate by the scale attached with the wet spirometer.

2. **Expiratory Flow:**

**Objective:**

To measure the maximum expiration levels of the subject, expiratory flow rate is the measure of maximum expiration, or to find out how much the lungs can push out the air from the lungs.

**Equipment:**

The apparatus peak flow meter and the nose clip.
Procedure:

The subject was asked to sand up right, and holds the instrument horizontally without obstructing the pointer through out the range. He was asked to take a deep breath and exhale as forcefully as possible in one single blow through the mouth piece. The test was repeated two times and the best score recorded in millimeters.

3. Resting Pulse Rate

Objective: To measure the resting pulse rate.

Equipment: Stop Watch

Procedure:

The resting pulse rate was taken early in the morning when the subjects were in a resting condition. Left-hand radial artery palpation was felt by pressing with the fingertips to count the pulse palpation per minute was counted by a stopwatch.

Scoring:

The score was the number of beats in one minute and was recorded as the final score.
D. Psychological variables

1. Sports Achievement Motivation Test

Purpose

The purpose of the test was to measure achievement motivation level of inter-university Kabaddi players.

Procedure

1. The sports achievement motivation test was administered before the competition.

2. Necessary instruction that required before answering the questionnaire was explained to the subjects.

3. The subjects were assembled in a group. The purpose of the study was clearly explained.

4. After making sure that subjects understood the instruction the questionnaire were distributed to groups. Enough time was given to answer the questionnaire. The questionnaires were taken back after it was duly completed.

5. Thorough screening was done to check that no question was left unanswered.

Scoring:

1. The sports achievement test has twenty test items; response value of test extends from 0 to 40.

2. Each item carries a maximum score of two and the minimum of zero.

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3. When the subject ticked the high pole part, he was given two points, when he ticked the low pole no score was awarded.

2. **Sports Competition Anxiety**

_Administration of Questionnaire_

The scholar himself administered the SCAT Questionnaire to the players few hours prior to competition through personal contact at the time of All India Inter-university Competition during the year 2009. Each subject was asked to answer all the items of tests and was instructed to express his choice most honestly. The method of answering was explained to them.

_Purpose:_

The purpose of test was to measure the sports competition anxiety.

_Procedure:_

1. The Sports Competition Anxiety Test (SCAT) was administered few hours before the competition.

2. Instructions were given specially to answer all the items then questionnaire distributed to groups.

3. Sufficient time was given to answer the questions and instructed them not to take too much of time.

4. Questionnaire was taken back after it was duly completed.

_Scoring:_

1. The questionnaire has 15 items. For each item in the questionnaire, one of three responses are possible:

   a) Hardly Ever
b) Some Times

c) Often.

2. The 10 test items are 2, 3, 5, 6, 8, 9, 11, 13, 14 and 15. The spurious items: 1, 4, 7, 10 and 13 are not scored. Items 2, 3, 5, 8, 9, 12, 14 and 15 are worded and are scored as according to following key:

a) Hardly Ever - 1

b) Some Times - 2

c) Often - 3

3. Items 6 and 11 are scored according following key:

a) Often - 1

b) Some Time - 2

c) Hardly Ever - 3

3.7 DESIGN OF THE STUDY

To determine the significance of difference between the anthropometric measurements, motor fitness, physiological and psychological variables among Kabaddi inter-university male players, the four teams was selected. The subjects were selected from Kurukshetra University, Kurukshetra, Haryana; Chaudhary Charan Singh (CCS) University, Meerut, Uttar Pradesh; Maharshi Dayanand (M.D.) University, Rohtak, Haryana; and Periyar University, Salem, Tamilnadu who had league entered teams namely Winners, Runners, III Place and IV Place. Twelve players each from the team who had played in the All India Inter-university Competition.
3.8 STATISTICAL TECHNIQUES USED FOR ANALYSIS OF DATA

To compare the data of selected Anthropometric measurements, Motor fitness, physiological and Psychological variables among Kabaddi Inter-university players, One-way Analysis of Variance (ANOVA) was applied, followed by Scheffe's Post-hoc comparison to determine the significance of differences between paired means. The level of significance chosen was at 0.05.