CHAPTER III
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Since the last two decades psychologists are playing an important role in the field of games and sports. A good number of studies in sport psychology were carried out where many key concepts of psychology were employed successfully. These studies revealed that in sports and games psychological factors play critical roles. Success depends upon many of psychological factors. In present study some major psychological concepts are used, but sample used in the study consists of sport persons. Here, the term sport persons was use in its limited sense. The students of physical education colleges were treated as sport persons. It is so because, they are introduced to various sports and games and they have to play a few games and take active part in some sports, as a part of their training.

Since, psychological factors are employed in the study it is necessary to use sophisticated research methodology, and take care of each and every parameter of the study. In psychology, every parameter has its own significance. Though there are several research designs such as RBD, LSD etc., taking into consideration the nature of study, its aim and objectives, it was decided to employ factorial design. The systematic methodology began with using random sampling technique for selecting the sample and employing well standardized and highly reliable psychological tools for measuring the parameters under study. Also, a number of physical fitness tests were employed for finalizing the physical fitness of the Ss.

Sample :-

Scientific and appropriate sampling technique was employed for selection of sample. The universe of the study was restricted to all the students of physical education enrolled in colleges of physical education located within the corporation area of city of Aurangabad. A survey of these colleges was first done and then only
those colleges were selected which were establish at least a decade before, and which, have high reputation of teaching. Thus, the following institutions were selected. M. S. Mandal’s College of Physical Education and P. E. S. College of Physical Education.

Once the institutions were finalized, list of the male as well as female students enrolled in B.P, Ed. course was prepared. For the male and female students separate lists were prepared. By using random numbers tables 196 female students and 205 male students were selected. Data were collected from these Ss. Thus, at the initial stage the total sample comprised of 401 Ss. In present study a $2^3$ factorial design was used. So, the total sample of 401 Ss was distributed in to eight classified groups. Male and female Ss were separated on the basis of sex. Those who were personal success oriented were classified in separate group, and those who were group success oriented were classified in another group. Finally, on the basis of the scores obtained on different physical fitness tests, the Ss were classified as physically fit (Better) and physically fit (Poor). In this process 28 female Ss and 31 male Ss were deleted for not meeting one or more criteria. Thus, their remained 168 females and 174 male sport persons. Minimum cell frequency of the eight classified groups was found 40, while in a few groups it was more than 40. So, from these groups a few Ss were deleted again by using random number tables. Finally, in each group cell frequency was kept 40, and the effective sample was 320 Ss only, of which half of them were males and the remaining were females. Their age range was 19 to 22 years.

**Tools and Tests Used for Data Collection:**

For the measurement of several factors well standardized and reliable scales and tests were used. They are,
Locus of Control Scale:

The scale was constructed and standardized by Rotter. It consists of 23 question’s pairs, using a forced choice format, plus six filler questions. Internal statements are paired with external statements. The S has to select one of the two statements that are given to him. In this way he has to select 29 statements which he feels that according to him they are most appropriate. However, the maximum score on the scale is just 23, as for the filler items no scores are given. The scale is very much useful for assessing internal Vs external locus of control. Several reliability coefficients are given by the author. The minimum is .49 and maximum is .83.

Incomplete Sentence Blank:

This technique was first constructed and developed in Toronto (Canada). Later on it was standardized in India on a sample of 800 Ss. Incomplete Sentence Blank is a projective technique. There are 50 incomplete sentences. Each of the 50 incomplete sentences is provided with three alternatives. The task of the S is to select one of the three alternatives which he feels as most appropriate for completing the sentence. The Incomplete Sentence Blank standardized by Mukherji has been widely used in India for measuring achievement motivation. One of the highest reliability coefficients given by the author was .92.

Self Concept Scale:

This scale has been developed by Beena Awasthi. It was developed following semantic differential technique originally developed by Osgood, Suci and Tannenbaum. The scale consists of 56 items ; they are pairs of adjectives. The adjectives in each pair are exactly opposite to each other, e.g. good – bad ; honest – dishonest etc. The task of the S is to read each pair and rate himself on a five point
scale provided with the pair of bipolar adjectives. The scale is very much useful in obtaining self concept measures in six different areas. Test retest reliability was .84.

**Personal Preference Inventory:**

This inventory was developed by Zander. It consists of 12 items. Each item is an incomplete sentence. It is to be completed by selecting one of the two alternatives provided with each of the incomplete sentence. The inventory is very much helpful in classifying the individuals into group success oriented Vs personal success oriented person.

**Physical Fitness Tests:**

Nine different tests were administered on Ss. Fleishman (1964) suggested ten different tests to measure physical fitness of the sport persons. Of these ten tests only nine tests were used. Soft - Ball Throw Test was not administered.

**Extent Flexibility:**

A horizontal measuring scale 36 inches long, marked off in half inch intervals, was drawn on the wall at shoulder height. A line was drawn on the floor at right angles to the wall and opposite the 12 inch mark on the wall scale. The right handed S stood with his left side towards the wall, toes touching the line on the floor, with his feet together and at right angles to the floor line. He stood far enough from the wall so that he could just touch the wall with his left fist. Without moving his feet he has to raise his right arm sideways to shoulder level, palm down and fingers extended. From this position he has to twist clock wise as far as possible to touch the wall scale with his right hand. To help fix the feet during this movement, the tester placed a foot alongside the Ss right foot. The farthest point
reached on the scale and held for at least two seconds was recorded in inches to the nearest inch. The error made by the S were corrected during the first two trials, while scores were allotted for the performance in the third trial (see appendix). Two senior teachers acted as judges and allotted the scores for the performance of the S.

For the left handed subjects an alternative scale is used which reads from right to left (see appendix). The S has to stand with his right side to the wall and twist anti-clockwise to reach with the left hand.

**Dynamic Flexibility:**

Here the S has to stand with his back to a wall and far enough from it so that he can bend over without hitting it. His feet should be shoulder width apart. With chalk or tape, the tester marked X on the wall directly behind the middle of the Ss back and another X on the floor between the S’s feet. A stop watch was used to time the test.

On the signal “go” the S has to bend and touch the X between his feet with both hands and then rise, twist to the left and touch the X on the wall with both hands. This counts as one cycle. In subsequent cycles the S alternates the side to which he twists and the tester records the number of cycles completed in 20 seconds. Prior to test, three correct cycles were demonstrated emphasizing speed (see appendix).

**Shuttle Run:**

Two parallel lines 20 meters apart were marked on a hard surface. An observer stood at one line and the tester with a stop watch at the finish line. The S
stood behind the start line with one toe up to the line. On the command, “Go” the S runs to the opposite lines 20 meters away. He has to touch the ground on the far side of it with either foot and return to the start line to repeat the procedure. The distance between the line is covered five times to complete the 100 meter run. On the last lap S has to exert maximum effort to cross the finish line and complete the distance in the fastest time possible. The time taken to cover the five laps was recorded in seconds and milliseconds.

**Hand Grip:**

A hand dynamometer was placed in the palm of the Ss preferred hand, so that its edge lies between the first and second joints of the fingers. The S stood and hold his hand down his side away from his body, thumb forward. On the command “Squeeze” he squeezed the dynamometer sharply as hard as he could. Three trials were taken, each separated by one minute of rest. The best of the three readings was recorded in kgs.

**Leg Lifts:**

The S lied flat on his back with his hands clasped behind his neck. A partner held the performer’s elbows down against the ground. The S raised his legs, keeping them straight, until they are vertical and then returns them to the ground. This exercise was performed as many times as possible in 30 seconds.

The S started on command “Ready Go” and was told to stop after 30 seconds. The number of leg lifts were counted.
Cable Jump:

The S held a 24 inch length of rope in front of him, with one hand grasping each end. The ends of the rope protrude just outside the closed fists. The rope was not stretched, it was hanged loose. The S jumped over the rope without releasing the grip on it. The S had to jump over the rope through his arms. The number of correct jumps were counted.

Pull Ups:

The pull ups were performed from a horizontal metal bar which was approximately 4 cms in diameter and high enough for the S to hang off the floor with his arms and legs fully extended. The S was demonstrated one correct pull up prior to the test.

The S took an under grasp on the bar. On the starting signal he pulled himself up until he could place his chin over the bar and then lowered to a fully extended position of his arms. This was counted as one pull-up. The exercise was repeated until the maximum is reached. The number of pull - ups were counted.

Balance:

A wooden rail 4 cms high, 2 cms wide and 60 cms long mounted on a base board was used. The test was described to the S, who has to balance on the rail using his preferred foot, which was to be placed along the rail. He was first given a practice trial with his eyes open, and was told that his score will depend on the length of time from when he says ‘ Go ’ until he touches the floor with any part of his body, or removes either hand from his hips.
Along with a practice trial the S was given two trials with eyes closed. The number of seconds the S maintained his balance for each of the two test trials was recorded separately and averaged for a total score.

**600 Meter Run - Walk**

Here the task of the S was to cover the distance of 600 meters in the shortest possible time. The time was recorded in seconds and milliseconds.

All these nine tests were given weightages and on the basis of the scores obtained on all the nine tests they were classified into two groups namely, physically better fit; and physically poor fit. For this classification P 60 and P 40 criteria were used. The Ss who got scores above P 60 were labelled as physically better fit and those who scored less than P 40 were classified as physically poor fit.

**Procedure of Data Collection**

The data were collected by administering the scales on a small group of Ss at a time. Every time 15 to 20 Ss were invited. Their seating arrangement was made in a classroom. When the Ss took their seats and sat conformably, through informal talks rapport was formed. They were told about the importance of the study. When it was observed that the Ss are eager to take the scales, first copies of Locus of Control Scale were distributed among them. They were asked to fill up the information about their name, age etc. The following instructions were given to them.

"This is a short questionnaire. The purpose of the scale is, to study, how different important social events influence different people in varied manners. Here there are 29 pairs of items denoted by 'A' and 'B'. From each pair, the statement which you feel is most appropriate and applicable to you, you have to
select it and put a \( \checkmark \) mark on it, on the answer sheet; provided to you along with the scale”.

Please answer carefully, but do not waste more time thinking about any pair of items. Take the decision as quick as possible and write its reply at appropriate place on the answer sheet.

In case of some pairs of statements you might feel that both the items are true in your case, or both the items are not true in your case. In such case you have to select the one which you think is relatively more true or the one which you find relatively less untrue in your case. Think of each pair independently. Your responses will be treated as confidential and used for research purpose only without disclosing your identity.

By taking different two statements the procedure was demonstrated on the blackboard. Doubts and difficulties asked by the Ss were replied to their satisfaction. Their was no time limit, but the Ss were asked to work as fast as they can. Completed copies of the scale were collected after sometimes.

After collecting all the filled copies of locus of control scale, copies of Incomplete Sentence Blank were distributed among the Ss. They were instructed as follows.

“This is a short scale of projective technique type. There are incomplete sentences. Along with each incomplete sentence, three alternatives are given. You have to read each incomplete sentence and the alternatives given with it. Then you have to select one of the three alternatives that you think is most appropriate to complete the sentence and also you think it is applicable to you mostly. Though there is no time limit, you have to complete the sentences, by selecting one of the three alternatives, as fast as you can.”
The procedure was demonstrated on the blackboard. When it was found that the Ss had no doubts or difficulties, they were asked to go ahead and write the responses. Completed copies of Incomplete Sentence Blank were collected. Here the first session of the data collection concluded.

/After an interval of one hour again the same Ss gathered in the same room. Once again rapport was formed. Afterwards copies of Self Evaluation Scale were distributed among them. They were instructed as follows:

"While describing our or other persons good or bad characteristics we make use of adjectives. For example, I am brave. He is honest. She is fat, etc. People differ from each other on physical and psychological characteristics. Each individual has good as well as bad characteristics. In this scale there are several pairs of bipolar adjectives such as honest – dishonest; good – bad etc."

Read each pair of adjectives, think which adjective describes you most and to what extent. Then put a '✓' mark at the appropriate square provided with each pair of adjectives. For example, the pair is –

1 2 3 4 5
Strong □ □ □ □ □ Weak.

If you feel that you are neither strong, nor weak but perfectly normal, then put a '✓' mark in the 'THIRD' square.

If you feel that you are little more strong than normal then put a '✓' mark in the 'SECOND' square.

If you feel that you are very much strong than normal then put a '✓' mark in the 'First' square.

If you feel that you are little more weak than normal then put a '✓' mark in the 'FOURTH' square.

If you feel that you are very much weak than normal put a '✓' mark in the 'FIFTH' square.
A pair of adjectives was taken as an example, and the procedure was demonstrated on the blackboard. When the Ss followed the instructions, they were told that there is no time limit to this scale, but you have to work fast. Do not waste time thinking more on any one of these pairs. Taken decisions quickly.

Filled copies of the self evaluation scale were collected only when it was confirmed that the Ss had replied to each item.

Immediately after completion of Self Evaluation Scale, copies of Personal Preference Inventory were distributed among the Ss. They were given the following instructions.

"This inventory consists of 12 items only. There are 12 incomplete sentences. Each one is provided with two alternatives. Read each incomplete sentence and the alternatives provided with it to complete the sentence. Take the decision, of the two activities described which one you like most, and then put a 'mark on it. Here there are no 'right' or 'wrong' answers. So feel free to reply honestly."

Since, on similar such scale the Ss worked earlier, it was not difficult for them to understand the procedure. The Ss replied fast, copies of Personal Preference Inventory were collected at the end.

Similar procedure was adopted for collecting data from different groups of Ss and same tests were administered on each S to determine his or her physical fitness.
Variables Under Study:

Major variables under study were -
Sex, success orientation, physical fitness, locus of control, achievement motivation, physical self concept, intellectual self concept, social self concept, moral self concept, emotional self concept and asthetic self concept.

Design of Study:

Of the several variables mentioned above the first three were treated as independent variables and the remaining as dependent variables. Thus, a balanced 2 x 2 x 2 factorial design was used.

Statistical Treatment of Data:

At the first stage the data will be treated by Mean and Standard Deviation.
At the second stage data will be treated by Three Way ANOVA.
Finally, a multiple comparison test will be applied to analyse the data and search whether the intergroup mean differences are significant or not.

Discussion:

Findings of the study will be discussed considering the statistical values and findings of relevant studies. Wherever necessary help of theoretical frameworks will be taken.