CHAPTER 3

DESIGN OF STUDY
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In the present chapter research scholar has described the method of conducting
the study. Chapter had been divided under following subheadings for clear explanation.
1) Sources of data.
2) Method of sampling.
3) Selection of the subjects and the formation of groups.
4) Research tools and apparatus reliability.
5) Criterion measures and administration of test.

SOURCES OF DATA

For the present study subjects were selected under the following three heads.
1. Inactive subjects
2. Active subjects and
3. Yoga practitioners.

Inactive Subjects

The Inactive subjects were selected from the State Bank of India agriculture
branch Amravati, Amravati District Forest Office Amravati, and Conservator of Forest
Office Amravati. The retired peoples were selected from Amravati District pensioners
Association Amravati. The traders were selected from Amravati Traders Association
Amravati and wholesale merchant from Sakkarsath and Itwara Bazaar Amravati.

Active Subjects

The active subjects were selected form 19th Veterans National Athletic
Championship 1997, Amravati and Amravati District Veterans Association Amravati.
Yoga Practitioners

Yoga practitioners were selected from Deeparchan Yoga Center Amravati, Yoga Bhavan and Research Center Maltekadi Amravati and Janardhan Swami Yoga Bhavan Ram nagar Nagpur. The available subjects as per the requirement of study were divided agewise. Age proof was taken from the service book record and board certificates. Agewise groups were prepared from the above sources of data.

METHOD OF SAMPLING

Simple random sampling method of lottery system was used to select the subject for this study, from a group of subjects, those were willing to participated actively in this study.

SELECTION OF THE SUBJECTS

Inactive Subjects

The research scholar went to the office staff and traders through the personal relations and taking the help of neighbors and colleagues. While selection of subjects the research scholar got advantage of the world-renowned institute Hanuman Vyayam Prasarak Mandal (H.V.P.M), Amravati where the research scholar was a lecturer during 1997 to 1999. Initially the purpose of the study was explained to every staff and traders in the group. After the explanations of the purpose of study a few people refused, such people were not considered and some of them gave willingness to act as subjects and such people were taken into consideration. The available subjects were divided according to the age categories. Date of birth was confirmed from their service books, board or University birth records. The list of the available subjects was made on a paper. The subjects were selected by simple random method by lottery system. This method was used because in some of the groups number of the subjects was in excess. In the age group 60-62, the subjects were selected from the retired persons by taking their addresses from Amravati District Pensioners Association Amravati, with the help of
same people’s the researcher contacted the other retired peoples. These inactive subjects were selected according to the simple random method of sampling by lottery system. A dialogue was made with the Amravati Traders Association about the research purpose. Traders were selected by simple random method of sampling by lottery system. All the above subjects were considered as inactive subjects.

**Active Subjects**

The active subjects were selected from $19^{th}$ Veterans National Athletics Championship 1997. At the time of inaugural function the announcement was made on loudspeaker and requested the athletes to remain present in the same assembly after completion of inaugural ceremony. The purpose of study was discussed among these subjects. There were many subjects who responded positively. These subjects were divided into four age groups. The date of birth was confirmed from the eligibility form provided to the organizing committee. These subjects were selected by the simple random method of sampling with the help lottery system. The duration of exercises was confirmed from their membership of the respected associations.

**Yoga Practitioners**

The yoga practitioners were selected from Deeparchan Yoga Center Rajapeth Amravati, Yoga Bhavan and Research Center Maltekadi, Amravati and Janardhan Swarni Yoga Bhavan Ram nagar Nagpur. The purpose of study was discussed amongst these subjects. There were many subjects responding positively. These subjects were divided into four age groups. The date of birth was confirmed from their board certificates. These subjects were selected by the simple random method of sampling with the help of lottery system. The duration of yoga practices was confirmed by their entries in the institutes or yoga centers.

Thus total 120 male subjects were selected for the study, which includes 40 inactive subjects, 40 active subjects and 40 yoga practitioners.
FORMATION OF THE GROUPS

The subjects for the research were 120. They were divided into four equal groups i.e. each group consists of 30 subjects of same age category includes 10 inactive adults, 10 dynamic exercise practitioners and 10 yoga practitioners. The groups according to age was distributed as follows.

Table No. 3.1 Age wise groups of inactive subjects, dynamic exercise practitioners and yoga practitioners.

<table>
<thead>
<tr>
<th>AGE GROUP</th>
<th>INACTIVE ADULTS</th>
<th>DYNAMIC EXERCISE PRACTITIONERS</th>
<th>YOGA PRACTITIONERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-53</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>54-56</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>57-59</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>60-62</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

RESEARCH TOOLS AND APPARATUS

For the research purpose number of equipments required were listed below

1. Cholesterol kit was used to analyse cholesterol level.
2. Sahali’s Hemoglobinometer was used to determine hemoglobin level.
3. N / 10 HCl, spirit, distilled water, Hb pipette
4. 20 inches bench was used to found C-R index.
5. Metronome was used to measure cadence.
6. Stopwatch was used to measure time in seconds.
7. Height stand was used to measure height in cm.
8. Weighing machine was used to measure weight in Kg.
9. Digital Sphygmomanometer was used to measure blood pressure in mm Hg.
10. Stethoscope was used to measure heart rate.
11. KNP1 was used to measure personality index.
12. Footstep reaction and movement timer was used to measure reaction and movement time.
13. Chronoscopes were used to measure time in seconds for reaction and movement time.

RELIABILITY OF EQUIPMENTS AND APPARATUS

Establishing the equipment and apparatus reliability ensured the reliability of the data.

- The cholesterol kits used for the analysis of cholesterol level were acquired properly calibrated by the manufacturers, which was further tested and confirmed by the expert pathologist.

- The Sahall’s Hemoglobinometer used for the determination of hemoglobin were acquired properly calibrated by the manufacturers.

- The chemicals and other materials required like N / 10 Hydrochloric acid, spirit, and distilled water were acquired from registered manufacturers. Only the ISI marked chemicals and materials were used.

- The measurement tape was used for the measurements of chest girth etc, was synchronised with the calibrated measurement tape from the Government College of Engineering Amravati.

- The Hb pipette used for the hemoglobin estimation was acquired properly modified and corrected from the manufacturers.

- 20 inches bench used for the Harvard steps test, acquired was measured properly with the corrected measurement tape.

- Metronome was used for measuring cadence of the subjects stepping pattern in the Harvard step test was acquired and calibrated by the manufacturer.

- The stopwatches used for recording time were acquired was synchronized with the calibrated stopwatch from Government College of Engineering Amravati.
• Heights stand used for the recording the heights of subjects acquired were corrected by calibrated measurement tape.

• The regional office of Maharashtra State scale measurements and weighing standardization Amravati calibrated the weighing machine acquired for measurement of the weight.

• Digital Sphygmomanometer used for measurement of blood pressure of the subjects was acquired calibrated by the manufacturer.

• Stethoscope used for measurement of heart rate of the subjects was acquired properly which was calibrated by the manufacturer.

• KNPI used for the measurement of the personality index of neuroticism of the subjects, inventory was used by Kundu’s rectified standard test.

• Footstep reaction and movement timer used to measure reaction time and movement was acquired properly which was calibrated by the manufacturer.

• Chronoscopes used to measure Reaction Time and Movement Time was acquired properly which was calibrated by the manufacturer. The timings of the chronoscopes were further confirmed with the help of calibrated stopwatches.

Therefore, all the equipment used for the study to measure the variables of the study was considered reliable and precise for the collection of data.

CRITERION MEASURE AND ADMINISTRATION OF TEST

Blood Cholesterol Estimation

For the determination of the cholesterol in serum or plasma, it was estimated with the CHOD / PAP (CH: Cholesterol, OD-Oxidase, P-Phenol, A-Amino antipyrine and P-Peroxide) computerized method of cholesterol clinical diagnosis.
Procedure

1. The blood sample of the subjects was taken 10 to 12 hours of fasting in the morning session.
2. The blood samples were collected with the help of clinical laboratory technician by using disposable syringes.
3. 2ml blood sample was collected from the subjects.
4. The 5ml-sterilised bottles were used to collect the blood sample.
5. The blood sample was allowed for clotting at room temperature for 10 minutes.
6. Blood sample containing bottles were kept slightly slanted so that serum and clotted blood cells were separated.
7. These blood samples were stored at 2-8 °C, the level of cholesterol was estimated in pathological laboratory.
8. The estimated values were compared with normal reference values.

Normal Reference Values

<table>
<thead>
<tr>
<th>Serum / Plasma</th>
<th>(Normal)</th>
<th>130 - 210 mg / dl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Suspicious)</td>
<td>200 - 220 mg / dl and above</td>
</tr>
<tr>
<td></td>
<td>(Elevated)</td>
<td>265 mg / dl and above</td>
</tr>
</tbody>
</table>

Hemoglobin Estimation

The objective of the test was to estimate the percentage of hemoglobin in the provided sample of blood by Sahli's Haemoglobinometer.

Method - Sahli's (acid hematin) method was used to estimate the level of hemoglobin of the subjects.

Procedure

1. In the graduated Hellige tube 0.1N hydrochloric acid was filled up to the 20% mark on percentage side and 2gm at the gram side.
2. Index finger was cleaned with spirit and pricked with pointed disposable pricking needle, the blood came out was filled upto the mark 20 micro lit. mark in the Hb pipette.

3. The blood columns were carefully adjusted without bubbles.

4. Excess of the blood on the sides of the pipette was wiped out by using dry piece of cotton.

5. Blood from the Hb pipette was immediately transferred to the acid in the graduated tube, rinsed the pipette well so that the reaction mixture was mixed.

6. This mixture containing tube was allowed to stand for 10 minutes that forms acid hematin.

7. The solution was diluted with distilled water by adding few drops at a time carefully and by mixing the mixture, the procedure was followed until the colour matched with the glass plate in the comparator.

8. The matching was done only against natural light. The level of the fluid was noted at its lower meniscous and the reading corresponding to that level on the scale was recorded in gm / dl.

9. Hb pipette was rinsed immediately with tap water to avoid the coagulation.

10. The estimated values were compared with normal reference values.

**Normal Values of Hemoglobin**

Men  →  14-16 ± 1 gm / 100 cc of blood

**C-R INDEX BY HARVARD STEP TEST**

The Harvard step test was developed at the Harvard fatigue laboratory in 1943. A landmark test in its day, it is no longer widely used because of its strenuousness. However, it still provides the standard for all step tests developed since that time and thus merits a thorough over view.
The objective of the Harvard step test was designed to measure the C-R function of adult male subjects. The examinee exercises on a 20-inch bench as long a period as possible up to 5 minutes.

1. The stepping pattern was up with the left foot, up with the right foot, down with the left, and down with the right foot.

2. Both of the examinee’s legs were straight when standing on the bench.

3. The steps were taken at a cadence of 30 steps per minute. A metronome was used to measure the cadence.

4. The test was ended after the 5-minute period had elapsed, a few of the examinees was stopped before the 5-minutes limit.

5. Whenever the examinee stopped exercising, a pulse count was taken during three recovery periods from 1 to 1 ½ minutes, 2 to 2 ½ minutes and 3 to 3 ½ minutes after exercise cease.

6. Two scores were recorded: the number of seconds the examinee exercised and the sum of pulse counts in the three recovery periods.

7. Using the formula mentioned in appendix no. 1, C-R index was calculated.

VALIDITY

The validity of the Harvard step test has been determined by correlating it with max VO₂ based on a maximal stress test, as a criterion measure. Validity coefficients ranging from 0.35 to 0.77 have been reported, indicating that this step test is not a very precise indicator of C-R function. Negative validity coefficients were obtained because several investigators used a modified scoring system where lower scores represented better performance on the step test.

RELIABILITY

Reliability coefficients ranging from 0.65 to 0.95 have been obtained for the Harvard steps test of the test in modified form. Most of these coefficients are higher than
0.80. The reproducibility or objectively of the test, which is the ability to obtain the same heart rate using different testers, is high. Montoye, 1978 has reported coefficients of 0.992 to 0.995. Most of the reliability estimates are confounded (probably made lower) by the potential for error in obtaining the pulse rate. Sometimes a partner counts the pulse rate. On other occasions the same tester is not used for both testing sessions. Certainly, the lack of objectively in obtaining a pulse rate is a problem, but the extent to which this problem affects have the size of the reliability coefficient is unknown.

**Harvard Step Test Standards**

<table>
<thead>
<tr>
<th></th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 90</td>
<td>Excellent</td>
</tr>
<tr>
<td>80-89</td>
<td>Good</td>
</tr>
<tr>
<td>65-79</td>
<td>Average</td>
</tr>
<tr>
<td>55-64</td>
<td>Below average</td>
</tr>
<tr>
<td>Below 55</td>
<td>Poor</td>
</tr>
</tbody>
</table>

**MEDICAL FITNESS**

An attempt was made by Saiffudin Khan to construct the medical fitness test. The twelve-parameter medical fitness test was prepared and used first time by Saiffudin Khan for the comparison of health status of General Education Teacher and Physical Education Teacher. Medical fitness scale had been derived from the medical point of view.

**CONSTRUCTION OF MEDICAL FITNESS SCALE**

This scale was constructed and developed by Saiffudin Khan’s investigation, on the basis of guidelines provided in the physical education and medical science literature and these were supplemented by the expert’s opinions of physical education teachers and doctors. The test comprises of 12 parameters divided into sub-units. It had total score of 63 points.
The term ‘Medical Fitness’ means normal anatomical structure and physiological functioning of the human systems. The scale has been developed to evaluate and physiological grade/status of the individuals.

Procedure

1. The height and weight of the subjects was measured in cm and kg respectively.
2. The medical practitioners were checked the subjects in the anatomical physiological views.
3. The printed medical form (mentioned in appendix no. V) was filled up in the guidance of medical practitioners.
4. With the help of medical fitness scale given in the appendix no. VI, health status was calculated.

RELIABILITY

On the basis of accumulated information 12 parameters of measurement were developed. They were height, weight, previous fractures of joint injuries, heart (resting heart rate), blood pressure (systolic, diastolic and pulse pressure), lungs (chest expansion), health (pulse, blood pressure and respiration), girth of abdomen, in comparison with chest, skin infections ear, nose, throat, teeth and gums, and eyes. The test retest reliability was highly reliable.

VALIDITY OF THE TEST

The preliminary parameters of the test were developed on the basis of the opinions of judges. The judges were five experts associated with the physical fitness testing. The judges were, two full time physicians attached to the physical education colleges, two directors of physical education and one senior most physical education teacher. They were graded the physiological measures treated in the test on the basis of expert opinion the validity of the medical fitness test was determined.
Thus, only the content validity of the medical fitness scale was determined. The classification of categorization was suggested based on the scores obtained on the test.

**Medical Fitness Classification**

<table>
<thead>
<tr>
<th>Medical fitness</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-83</td>
<td>Good</td>
</tr>
<tr>
<td>40-51</td>
<td>Average</td>
</tr>
<tr>
<td>39 &amp; below</td>
<td>Poor</td>
</tr>
</tbody>
</table>

**KUNDU'S NEUROTIC PERSONALITY INVENTORY (KNPI)**

Carl Jung (1923) first proposed two types of personality namely extroversion introversion. But later Eysenck & Eysenck (1964) added another dimension neurotic normal and carried out extensive research. To measure the degree of neuroticism in the present study Kundu's neurotic personality inventory (KNPI) was used.

The purpose of the inventory is to obtain a reliable measure of neurotic tendencies of adult people for diagnosis, selection and guidance. It was developed according to Indian Socio-cultural pattern. To minimize taking effect and also to reduce the nature and number of slanted responses, non-aggressive types of items were included. In order to check the subjects who have a tendency to respond to the middle most categories from a pattern of systematic presentation. The arrangement of the response, pattern from 1 to 5 was not made according to the decreasing degree of symptom.

**INSTRUCTIONS FOR ADMINISTRATION**

1. The K.N.P.I. inventory was self-administering in nature both for the individual and for the group.

2. Instructions were provided in the Booklet and no separate instructions were necessary.

3. The test was administered in-group, instructions were read out.
4. No time limit was imposed.

5. People were taking around half an hour to complete the inventory.

**RELIABILITY**

The reliability co-efficient was computed by using the split half method and applying Spearman Brown formula.

**Table No. 3.2 Reliability Co-Efficient of KNPI at the Standardization Stage.**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>1st half-2nd half</th>
<th>Odd-Even</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>692</td>
<td>0.85</td>
<td>0.89</td>
</tr>
<tr>
<td>Female</td>
<td>300</td>
<td>0.80</td>
<td>0.85</td>
</tr>
<tr>
<td>Neurotic</td>
<td>50</td>
<td>0.72</td>
<td>0.80</td>
</tr>
</tbody>
</table>

**VALIDITY**

The validity coefficients, in terms of biserial correlation, of inventory obtained by correlating the test scores with criterion scores of neurotic subjects. All these coefficients presented in the table 3.4

**Table No. 3.3 Validity Co-Efficient of KNPI at the Standardization Stage.**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Validity coefficients 'bis</th>
<th>'KNPI, B1-N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>692</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>308</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>100</td>
<td>-</td>
<td>0.65</td>
</tr>
<tr>
<td>Female</td>
<td>100</td>
<td>-</td>
<td>0.80</td>
</tr>
</tbody>
</table>

**SCORING**

The weightage given to the responses to each item determined the score for that item. A scoring key had been provided for these purpose. The weightage were determined on the basis of judgements given by psychiatrists, psychoanalysts and psychologists. Each statement is designed to score for positive and negative response as it represents symptoms of neurotic tendency. Scoring weights are shown in the following table.
Table No. 3.4 Weights given For the KNPI Response Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weights given to all items except 41, 51, 55, 56 and 58</td>
<td>2 4 5 3 1</td>
</tr>
<tr>
<td>Weights given to items 41, 51, 55, 56 and 58</td>
<td>5 4 3 2 1</td>
</tr>
</tbody>
</table>

The KNPI measures neurotic tendency. The scores are inversely related to the sub-categories suggested by Kundu. For example, the individuals scoring 241 and above are termed as highly neurotic. These categories, Kundu claimed, are in accordance to severity of on neurotic systems (i.e. degree of neuroticism). For proper interpretation the author has suggested four sub-categories, namely, normal, slightly neurotic, moderately neurotic and highly neurotic.

Classification of Population

<table>
<thead>
<tr>
<th>Range of raw score</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>181 and below</td>
<td>Normal</td>
</tr>
<tr>
<td>182-215</td>
<td>Slightly neurotic</td>
</tr>
<tr>
<td>216-240</td>
<td>Moderately neurotic</td>
</tr>
<tr>
<td>241 and above</td>
<td>Highly neurotic</td>
</tr>
</tbody>
</table>

REACTION AND MOVEMENT TIME

Method for collection of data:

The subjects were motivated to give their true performance. The administration of the test was properly done in the laboratory with the footstep reaction timer.

Collection of data:

The data was collected from the footstep reaction timer. At a time only one subject was tested. One assistant was taken for the help.
This apparatus was designed to measure a reaction and movement time of stepping and consists of 3 units.

1. Response platform with integral starting and stepping boards.
2. Stimulus boards and touch coils.
3. Control unit.

**Response Platform with Starting and Stepping Boards**

There were 4 wooden boards (foot switches) marked as A, B, C and D. A and B were starting boards and C and D were stepping boards. These boards were mounted on a large platform. Subject had to stand on starting boards A and B, putting one foot on each board. After onset of stimulus, he had to lift one of the feet from A and B and step on C and D as per experimental requirement. The distances between the boards were properly adjusted and direction of stepping was as per requirement of experiment. Subjects act accordingly, front or sideways.

The four foot boards (or boxes) i.e. two starting and two stepping, were mounted permanently on a Response platform. The stepping board was adjusted according to manual provided with the equipment.

**Stimulus Boards and Touch Coils**

There were two stimulus boards yellow lamp and bell were mounted on left. Red lamp and Buzzer was mounted on Right board. Thus, giving 2 visual and 2 auditory stimuli. The stimulus board was hanged on the wall. Two touch coils were provided to present tactual stimuli. These were to be worn on the temples.

**Control Unit**

Control unit was a metal box, had arrangement for connecting starting and stepping boards' stimulus boards. Touch coils and chronoscopes. Also there were 6 switches in a row presenting the stimulus when promote.
1. There was a 6-pin socket for connecting corresponding plug from Response platform. There were 2 selector switches for selecting the required combination of starting and stepping boards namely AC, AD, BC, and BD.

2. There were 2 sockets (having 2 pins) braked right (lamp, Buzzer) left (Bell and Lamp) plugs of the respective stimulus boards were inserted in the proper sockets. There were 2 pairs of binding posts one on each side of these sockets, marked left touch coil and right touch coil wires coming from touch coils a (when in use) were to be connected to the respective binding post pairs.

3. The 6 w switches placed in a row marked on left as touch, lamp, bell and on right as touch, lamp, Buzzer, when pressed, present the desired stimulus on (and also start the 2 chronoscopes it was standing on starting boards A and B).

4. There were 2 more pairs of binding posts marked "chronoscopes" 1 and 2 those were to be connected, one each to the binding pairs 1 and 2.

5. There was a three-pin main chord coming out form the side of box and a main switch.

Procedure

It was possible to conduct all the three types of reaction and movement time experiment by means of this apparatus. Simple Discriminatory and Choice reaction and movement time could be found out. Researcher was attempting to found out the simple reaction and movement time.

1. Subject was asked to stand on the starting boards A and B.

2. The required combination of starting and stepping boards was selected by manipulating 2 selector switches. The first switch was pointing towards A and the later was pointing towards C. to got response of the subjects stepping from A to C that is with right leg.

3. The choice of examiner any one of the three stimuli available was used.
4. Examiner instructed subjects to react properly after receiving the stimulus. Examiner asked subject to step from A to C as soon he observed the required lamp that lighted and remained in same position (i.e. stepping on board 'C') till examiner told him to with draw the log.

5. Examiner pressed the required switch (e.g. Right lamp) and kept it pressed thereby presenting the required stimulus and also starting 2 chronoscopes simultaneously. Examiner kept the switch pressed and releases it only after the reaction of stepping is completed. Only after releasing his switch examiner allows subject to with draw his foot from the stepping board. The two different readings on two chronoscopes were obtained.

6. As soon as subject lifts his desired foot from the starting board (say A) Chronoscope No. 1 stops when he steps on the desired stepping board (say C) Chronoscope No. 2 stopped.

7. Chronoscope No. 1 gives R.T. For lifting of the foot and Chronoscope No. 2 gives M.T. for the full footstep.

8. Both the chronoscopes were reset before each trial.

9. Before each trial checked 2 selector switches was checked for desired combination of starting and stepping boards.

10. While presenting the stimulus the switch was pressed till the motion of subject was completed and both chronoscopes had stopped. Release the switch before subject lifts back his foot from stepping board after completion of the reaction so as to avoid wrong counting of the chronoscopes.

11. While adjusting the foot boards proper care was take of the wires coming from the switches.
## Standard Classification of Reaction Time

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>RT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>0.25 sec</td>
</tr>
<tr>
<td>Audile</td>
<td>0.17 sec</td>
</tr>
<tr>
<td>Touch</td>
<td>0.15 sec</td>
</tr>
</tbody>
</table>

## COLLECTION OF DATA

To ensure co-operation from subjects the research scholar had meetings with subjects in the groups at the above mentioned centers. The purpose of study was explained clearly to the subjects to ensure that there would be no ambiguity amongst the subjects regarding the requirements and efforts they had to put in for the completion of this research programme.

### Inactive Subjects

Administrating the tests on the selected subjects the necessary data was collected. The data was collected from the inactive subjects, active subjects and yoga practitioners on different days as per the convenience of the subjects. The inactive subjects were like to come at research laboratory on Sunday because they were free from office duties and market was closed on Sunday so the traders were free on Sunday. These inactive subjects was called on Sunday in the morning session in fasting conditions because for the cholesterol estimation 12 to 14 hours fasting blood samples were required for the feasible results. Simultaneously the hemoglobin estimation was done after an hour of the completion of tea and breakfast. In the laboratory four testing booths were prepared with the help of assistants and medical practitioners. The first booth was consisting of medical fitness test, which was carried out by the medical practitioners. The Harvard step test was carried out at booth no. 2 with the assistant. At the booth no. 3 the researcher continued reaction time and movement time test. At the booth no. 4 hemoglobin estimation was carried out with the help of medical practitioners. After the completion of laboratory test all subjects were gathered in a group and Kundu's
Neurotic Personality Inventory was administered. The test administration was given on the page no. 70.

**Active Subjects**

During 19th Veterans National Athletics Championship, the boarding and lodging arrangement was done at H.V.P.M.'s Hostel. The selected athletes from this tournament were active subjects. The researcher with the help of clinical laboratory technician 2-ml blood samples was collected for the estimation of blood cholesterol. As for the estimation of blood cholesterol there is a need of 12 to 14 hours fasting blood samples so the blood samples was collected early in the morning before tea. The researcher requested to the subjects to come to the laboratory as per their convenient time. The subjects came to the laboratory testing in the free time within schedule timetable of tournament. The subjects came to the laboratory in the group 5 or 6 in number when they had no events. The laboratory test was administered accordingly at four stations with the help of assistants and medical practitioners. After the completion of laboratory test all subjects were gathered in a group and Kundu's Neurotic Personality Inventory was administered.

**Yoga Practitioners**

The yoga practitioners were selected from "Deeparchan Yoga Center", "Yoga Bhavan and Research Center" Amravati and "Janardhan Swami Yoga Center" Nagpur. The blood samples of the yoga practitioners were collected at the yoga center early in the morning before they start yoga practices. The consents of the same yoga practitioners were taken to call them for laboratory tests. The yoga practitioners agree to come on Sunday because few of them were in service. The subjects reported at the laboratory, test was administered at four stations with the help of assistants and medical practitioners. After the completion of laboratory test all yoga practitioners were gathered in a group and Kundu's Neurotic Personality Inventory was administered.