PROCEDURE

In this chapter the selection of subjects, criterion measures, the experimental design and the treatment procedure used in this study have been explained.

Selection of Subjects

Eighty subjects of B.P.Ed. and B.B.A. class students of Jai Narayan P.G. College Lucknow (KKC) were selected for the study. The average age of subjects were 20-25 years.

The subjects were divided into four groups. Experimental groups A, B and C and a control group D, each group of 20 subjects. The subjects were equated before collecting the data.

The experiment was conducted for a period of 12 weeks, excluding the period required for measurement in the criterion measures. It was begin and end within the experimental period.

The experiment groups A done 12 yogic practices and pranayams. The experimental group B performed exercise programme whereas ‘C’ grouped done combined activities. The control group ‘D’ was consists of daily routine. The performance of all the subjects of AAPHERD health related physical fitness test was recorded prior and after the experimental period.
Criterion Measure

The AAPHERD Health related physical fitness test contains four items intended to assess an individual’s status on four components of health related physical fitness, brief statements indicating the reasons for their selection and the test items chosen to represent them.

AAPHER Health Related Physical Fitness Test: In 1980, the concept of fitness testing was modified due to the inclusion of additional emphasis on health related physical fitness test items. Subsequently AAPHER, 1976 fitness test, which was developed to measure the general motor ability of young boys, was again revised in 1980 and was converted to AAPHER Health Related Physical Fitness Test. It intends to assess an individual’s four components of health related physical fitness namely cardio respiratory function, body composition (leanness/Fatness), Flexibility and abdominal and low-back musculo-skeletal function. This test included the following four test items -

(i) Cardio respiratory function test - 9 minute run walk
(ii) Body composition (leanness/fatness)
(iv) Modified sit-ups

(i) **Cardio respiratory function Test-9 minute run- walk**

**Equipment:** Track or marked area and stopwatch.

**Test administration:** The subject is asked to take a standing start, to be Ready, and Go. The subject covers as much distance as possible in nine minutes. If the track and running area is marked at every 200 yards, the tester can count the number of laps completed and additional incomplete lap distance covered in 9 minutes respectively. Although the tester has to encourage all the subjects to run the entire period of 9 minutes but interspersed walking is allowed and total distance covered exactly in 9 minutes is recorded and connected up to one yard.

**Scoring:** The interval between the starting signal and the instant subject crosses the finish line is the score of the test. The time is recorded correctly up to tenth of a second.

(ii) **Body composition (Leanness/Fatness):** The leanness and fatness study helps to diagnose obesity which is defined as excessive accumulation of body fat. Obesity is said to be associated with health hazards. Body fat is tested with the help of triceps and subscapular skinfolds in AAPHERD 1980 Health Related P.F. Testing.
(a) Triceps Skin fold

The triceps skin fold is measured more commonly than any other part, because it is so accessible. It is closely correlated with percentage of body fat with total body fat.

Procedure: It was measured in the midline of the posterior aspect of the right arm, over the triceps muscles, at a point mid way between the lateral projection of the acromian process of the scapula and the inferior margin of the olecranon process of the ulnar. The level of the measurement is determined by measuring the distance between the lateral projection of the acromial process and the inferior border of the olecranon process of the ulna using a tape measure, with the elbow flexed at 90 degrees. The tape was placed with its zero mark on the acromial and stretched along the upper arm extending below the elbow. The mid point was marked on the lateral side of the arm. The subject was measured standing and skin fold was measured with the arm, hanging loosely and comfortably on the subject’s side. The triceps skin fold is picked up with the left thumb and index finger, approximately one centimeter proximal to the marked level, and the tips of the calipers are applied to the skin fold at the marked level.
(b) Subcapular Skinfold

Procedure: Sub scapular skin fold thickness is a measure of subcutaneous adipose tissue and skin thickness on the posterior aspect of the torso. The sub scapular skin fold was picked up on the diagonal, inclined inferio-laterally, approximately 45 degrees to the horizontal plane in the natural cleavage line of the skin. The site was just inferior to the inferior angle of the scapula. The caliper jaws were applied one-centimeter inferio-lateral to the thumb and finger raising the fold.

Scoring: Each measurement was taken three consecutive times and the median score was recorded to the nearest 0.5 millimeters.

(iii) Abdominal and Low Back Hamstring Musculo-skeletal Function

Sit and Reach Test

Measurement objective: This test is used to measure the flexibility of the back and leg (hamstring) muscles. It is a kind of absolute and linear test of flexibility.

Equipment: A testing box or a flexomeasure and a yardstick.

Procedure: The subject is asked to remove shoes and place his feet against the testing box while sitting on the floor with straight knees. Now the subject is asked to place one hand on top of the other so that the middle fingers of both the hands are together at the same length.
The tester keeps his hand on the hands of the subject to keep them straight not allowing any bending of the knees. The subject is instructed to lean forwards and place his hands over the measuring scale lying on the box with its 10 inch mark coinciding with the front leg of the testing box. Then, the subject is asked to slide his hands along the measuring scale as far as possible without bouncing and to hold the farthest position for at least one second.

**Scoring:** Each subject is given three trials and the highest score nearest to an inch is recorded and 10 inches are subtracted from the recorded reading to obtain possible without bouncing and to hold the fastest position for at least one second.

(iv) **Modified Sit-ups (Bent-knee sit ups)**

**Equipment:** A mat for each subject or lying area on the floor and a stopwatch.

**Time:** one minute.

**Test administration:** The subject is asked to lie on the back with the knees bent feet on the floor and heels not more than 12” from the buttocks. The angle at the knees should be less than 90°. The subject has to put the hands on the back of the neck with fingers clasped and has to place the elbows squarely on the mat. The subject’s feet are to be held by an assistant or partner to keep them in touch with the
surface. The subject is asked to tighten the abdominal muscles, bring the head and elbows forwards as sits up finally to touch the elbows to the knees. The entire above process constitutes one sit-up. The subject is asked to return to the starting position and to sit up again.

After giving the above mentioned demonstration to the subjects, signals “Ready” and Go are given to a specific subject. At the signal ‘go’ the performer start sit-ups and the timer starts the watch simultaneously. The performer continues performing the sit-ups at his best possible speed till the timer gives a stop signal after 60 seconds.

**Scoring**: The number of correctly performed sit-ups in 60 seconds (one minute) is the score of the test. Only one effort is allowed to the subject unless the tester believes that the subject has not had a fair opportunity. The following type of sit-ups are not counted for the score –

(a) If the subject does not keep the fingers clasped behind the neck.
(b) If the subject brings both elbows forward in starting to the sit-ups with pushing of the floor with the elbow.
(c) If the subject returns to starting position with elbows flat on the surface.
PROCEDURE OF EXPERIMENT

The experiment was conducted for a period of twelve weeks excluding the period required for the measurement, in the criterion measure at the beginning and the end of the experimental period.

The experimental group ‘A’ did 12 yogic practices programme as given below:

1. Srishasana
2. Sarvangasana
3. Matsyasana
4. Halasana
5. Bhujangasana
6. Salbhasana
7. Dhanurasana
8. Aradhamatsyandrasana
9. Pachimotana
10. Mayrasana/shavasana
11. Kapal Bhati
12. Anlom vilom

The experimental group ‘B’ did 10 exercises programme as given below:

1. Spinal rock
2. Back over
3. Side stretcher
4. Alternative prone lift
5. One leg jumping
6. Line walking after front roll
7. 5 meters dash
8. Raising the hands with folded hands
9. Walking on hands with partner
10. Stride stretcher

The experimental group ‘C’ did exercise and yogenic practices programme combined. The experimental groups practiced 6 days in a week.

THE TRAINING PROGRAMME

The whole training programme for the experimental group ‘A’, ‘B’ and ‘C’ was carefully and systematically planned. The experimental groups ‘A’, ‘B’ and ‘C’ underwent the training programme on yogenic practices, exercises and the combined respectively under the guidance of three assistance at same place and time under careful supervision of the research scholar for a period of twelve weeks in the 6 day week. The objective reflected exactly what was expected of the subjects after going through the training
programme.

The control group ‘D’ was not allowed to undergo the training programme.

EXPERIMENTAL DESIGN

The subjects were assigned to four groups by random sampling procedure as suggested by Robert and James (1969). Training programme for experimental groups ‘A’, ‘B’ and ‘C’ consisted of yogic practices, exercises and combined programme. The controlled group ‘D’ consisted of daily routine. The performance of subjects in AAPHERD health related physical fitness test was recorded prior and after the experimental period.

STATISTICAL PROCEDURES EMPLOYED

To establish the comparative effect of the yogic practices, exercises and health related physical fitness, the data were examined by applying analysis of co-variance. The level of significance was .05 percent.