Research Paper

Volume : 2 | Issue : 3 | Mar 2013 • ISSN No 2277 - 8179

TInterval Training on Selected Physiological and Bio-Chemical Variables Among High School Girls

Physical Education

KEYWORDS:

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INTRODUCTION

YOGA:

Yoga is a complete science of life that originated in India many thousands of years ago. Human beings are made up of three components: Body, Mind and Soul. Corresponding to these are three needs that must be satisfied for a contented life. The Physical need and inner peace, when all three are present there is harmony. Yoga is India's unique contribution to Physical Education activities. Yoga is a scientific and systematic discipline of the internal human body with a view to cosmic reality of God. It is the ancient traditional Psychophysical culture that creates the health of a human being. "Yoga has a complete message for humanity. It has a message for the human body, it has a message for the human mind, and it has also a message for the human soul. Intelligent and capable youth must come forth to carry this message to every individual not only in India, but also in every other part of the world".

MEANING AND IMPORTANCE OF YOGA

Yoga is a system of attaining perfect physical and mental health. "The body is the temple of the soul and to attain a harmony of mind, body and spirit, the body must be physically fit".

INTERVAL TRAINING

Mac Dongall says, Interval training involves activities that are more intermittent. It consists of alternating periods of relatively intense work and active recovery. It allows for performance of much more work at a more intense workload over a longer period of time than if working continuously. Interval training is to subject the body to repeat but short intermittent periods of reduced intensity. Interval training is advocated by many of the top coaches, trainers and performers who have used it to advantage. According to Kalafs and Anaheim the following four factors are significant in interval training.

1. A specific distance that is repeated at given number of times.
2. A recovery period during which the athlete jogs slowly and relaxes.

A pre-determined pace, carefully timed at which the athlete covers the set distance,

METHODOLOGY

To execute this investigation, the research scholar employed random sampling method. The study was conducted on a total sample of ninety boys drawn randomly from one hundred and fifty students of Gujarat Board Social Welfare Residential School (Girls), Junagadh, District, Gujarat. Age was ranged from twelve to fifteen years. The pre and post tests design employing analysis of covariance technique was adopted. The purpose of the study was to find out whether Asana and interval training had any influential effect, individually and collectively on the selected Physiological variables and Bio-chemical variables. Further it was aimed to find out which of the experimental variables were more effective. For this purpose, the research scholar followed the following procedure. The subjects for the study were selected at random and divided into three homogenous groups based on their initial performance. Among the three groups, the control group was strictly under control without undergoing any special activity. The experimental groups were subjected special activity. The experimental groups were subjected to the experimental treatment.

PROCEDURE

EXPERIMENTATION –I

The selected ten Asana training was given in six days a week except Sunday. The duration of the exercises was 20 minutes during the first month 30 minutes during the next month and 40 minutes during the third month in the morning from 6:30 A.M. to 7.10 A.M.

EXPERIMENTAL – II

The interval training was practiced by the subjects three days per week over a period of three months. Before giving the interval training the subjects were asked to warm up. The duration training schedule was 20 minutes during the first month 30 minutes during the second month and 40 minutes during the third month in the morning from 6:30 am to 7:10 am.

CRITERION MEASURES:

The following criterion measures were chosen for testing the hypothesis.

1. Vital capacity was recorded in liters / minute.
2. Pulse rate was measured in beats per minute.
3. Breath holding time was recorded in seconds.
4. Red blood cells, white blood cells and serum cholesterol was measured through blood analysis.

LEVEL OF SIGNIFICANCE

F-ratio obtained through Analysis of Variance to be significant has to exceed 3.107 and 3.104 at .05 and .01 level respectively.

F-ratio obtained through Analysis of Covariance to be significant has to exceed 4.859 and 4.862 at .05 and .01 level respectively.

DISCUSSION ON HYPOTHESIS

1. There may be significant differences in the way the selected physiological variables respond to asana.
2. Results showed that there was significant difference at .01 level. Hence the hypothesis was accepted.
3. There may be significant difference in the way the selected physiological variables respond to interval training.
4. Results showed that there was significant difference at .01 level. Hence the hypothesis was accepted.
5. There may be significant difference in the way the selected bio-chemical variables respond to asana.
6. Results showed that there was no significant difference at .01 level, except serum cholesterol. Hence the hypothesis was rejected.
7. These may be significant differences in the way the selected bio-chemical variables respond to interval training.
8. Results showed that there was no significant difference at .01 level except serum cholesterol. Hence, the hypothesis was rejected.
9. There may be significant differences on the responses of selected physiological variables among asana and interval training groups.
10. The results found that the interval-training group had better improvement in physiological variables when compared to the asana group.
11. There may be significant differences on the responses of selected bio-chemical variables among asana and interval training groups.
12. The results found that the interval-training group had better improvement in bio-chemical variables except R.B.C. and W.B.C when compared to the asana group.

Statistical Procedure:

In this study the analysis of covariance was used to analyses the results. The Schiff's post hoc test was used to analyses the means and differences between the means of the various groups.

CONCLUSIONS

Within the limitations imposed by the experimental conditions, the following conclusions were drawn.

1. Yogic practices and Interval Training had significantly improved the pulse rate, breath holding time, vital capacity and serum cholesterol.
2. When the experimental group-I's yogic practices were compared with control group, there was significant improvement in pulse rate, vital capacity, breath holding time and serum cholesterol.
3. When the experimental group-II (Interval Training) was compared with control group, there was significant improvement in pulse rate, vital capacity, and breath holding time and serum cholesterol.
4. When the experimental group-I was compared with experimental group-II, experimental group-I had no significant difference in physiological variables where experimental group-II had a significant difference in physiological variables.
5. When the experimental group-I was compared with experimental group-II, experimental group-I had no significant difference in bio-chemical variables whereas experimental group-II had a significant difference in bio-chemical variables except W.B.C and R.B.C.

RECOMMENDATIONS

1. Similar study can be conducted using other physiological and bio-chemical variables.
2. The study may also be conducted in Asthmatic patients.
3. Similar study can be conducted separately for girls of different age groups.
4. It is recommended that yoga shall be made a compulsory part in the physical education programme in schools and colleges.
5. Comparative studies on the effects of yogasanas and other training schedules on the variables used in the studies shall be conducted.
6. Studies to see the effect of yogasanas on psycho-physiological and psychomotor variables shall also be conducted.
7. Similar studies may be conducted for other stages of yoga.
8. Similar studies may be conducted on state and National level players and Athletes. It is recommended that similar studies may be conducted separately for men of different age groups.