

THE PHARMA INNOVATION

Effect of selected physical exercises and yogic practice on Haematological and biochemical variables among college women students

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Physical exercises are very effective in balancing fitness of the body. The sufficient amounts of physical exercise are needed to maintain adequate health.

If the exercises are practiced regularly, helps for the maintenance of good health, life without proper exercises render a person weak. A weak body weakens the mind; it means physical exercises are capable of giving better living in the society. So, physical exercises are natural part of our existence.

In ancient period the concept of yoga was the union of divine soul and the ordinary self. But today, this concept of yoga itself has taken a lot of changes. Today we know it simply as the co-ordination between our body and our mind.

Yoga is an ancient science and the practice of yoga improves the health status in the entire manner. Yoga is universally benefiting to all peoples of all ages. It's a practical holistic philosophy designed to bring about profound state of well being. Yoga is journey towards the physical and spiritual wellness. It is the experience of oneself with one's inner being.

Keyword: Physical exercises, yogic practice, haematological, biochemical variables

INTRODUCTION: According to World Health Organization (1981) ^[5], "health is a state of complete physical, mental and social well being and not merely the absence of disease or information".

Physical fitness involves the performance of heart and lungs, and the muscles of the body. And since, what we do with our bodies also affects what we can do with our mind, fitness influences to some degree qualities such as mental alertness and emotional stability. As you undertake your fitness program, it is important to remember that fitness is an individual quality that varies from person to person. It is influenced by age, sex heredity, personal habits, and

exercise and eating practice. You can do anything about the first three factors. However, it is within your power to change and improve the others where needed. (Thapar, 2010) ^[3].

Physical Exercise

According to Aahper (1983), physical exercise is any organized activity that involves continuous participation. Exercise occupies a leading role in keeping a person fit. It will be quite difficult to adjust one's life in terms of stress, diet and sleep and so on without proper exercises.

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Physical exercise is capable of giving better living, exercise keeps muscular motions, joints and tendons and circulation in motion. Exercise can also be used to control blood pressure. Hypertension causes inordinate amount of pressure on the walls of the arteries in the brain which is called stroke. If hypertensive individual exercises regularly, it lowers the blood pressure, thereby helping to prevent stroke, one of the leading cause of death in the world.

Yoga

Yoga is an ancient science and the practice of yoga improves the health status in the entire manner. Yoga is universally benefiting to all peoples of all ages. It's a practical holistic philosophy designed to bring about profound state of well being. Yoga is journey towards the physical and spiritual wellness. It is the experience of oneself with one's inner being.

In ancient period the concept of yoga was the union of divine soul and the ordinary self. But today, this concept of yoga itself has taken a lot of changes. Today we know it simply as the co-ordination between our body and our mind.

Akthar (2010) [1] says, “Yoga teaches us the ability to delve deeper into our mind to examine our reactions to life's challenge. This clarify helps us take on the pounding of daily life, so that we are able to remain positive and optimistic, come what may”.

Hypothesis

1. There would be significant difference in the selected haematological and biochemical variables due to physical exercises among college women students.
2. There would be significant difference in the selected haematological and biochemical

variables due to yogic practices among college women students.

Review of Related Literature

Chandrashekar and Deshpande (2011) [2] made a study on “effect of six week's yogasana training on haematological parameters and lipid profile”. Present study was done on 34 volunteer subjects (115 males and 19 females) attending Patanjali yoga Institute at M.E.S high school, Davanagere, age group was 20-60 years. Training sessions were held regularly for 6 weeks in early morning. Haematological parameters like Hb%, RBC, WBC, platelets count and blood induces were determined by the help of haemoglobin haemogram by automotive cell counter SF – 3000 and for haemogram study 2 ml of blood was in EDTA vial after aseptic precautions Fasting blood glucose and lipid profile were assessed by ELISA kit. All the above parameters were initially and after completion of 6 week yoga training programme and data were analyzed by using ‘t’ test. Result: Hb%, MCH, MCHC and Neutrophil count were significantly increased, RBC count was increased, and it was not statistically significant. And there was significant decrease in serum triglycerides, VLDL LDL / HDL ratio. Fasting glucose, serum cholesterol, low density lipoproteins were decreased.

Yograj, Ramaraj and Elangovan (2010) [4] conducted a study to find out the “effect of selected yogic practices and physical exercises on bio-chemical variables among college women students”. The study was conducted on 20 women students of Queen Mary's College, Chennai, Tamil Nadu were selected as subjects. The selected subjects were divided into two groups, group I underwent the yogic practices training and Group II underwent the physical exercises. The subject age ranged from 18-23 years. The subjects were selected at random from the college women students. The study was formulated as pre post and pre experimental design. The yogic practice group had significant reduction in body cholesterol and LDL, and improvement in HDL.

Methodology

The purpose of the study was to find out the effect of physical exercise on haematological and biochemical variables among college women students.

To achieve the very purpose of the study, women students from Government First Grade College, K.R. Pete, were selected as subjects at random

and their age was 18 to 22 years.

The subjects were divided into two groups namely physical exercise group and control group. Each group consisted of 30 subjects. The duration of the training was 12 weeks. The subjects of the control group were not allowed to participate in any of the training programmes except in their routine activities.

Table 1: The Summary of Mean and Dependent t-Test for the Pre and Post-Tests on Haemoglobin of Control Group, Physical Exercise Group and Yogic Practice Group (Scores in gm/ml)

	Pre-Test Mean	Post-Test Mean	't' Test
Control Group	11.42	11.40	0.681
Physical Exercise Group	11.43	12.45	8.253*
Yogic Practice Group	11.59	11.95	4.464*

* Significant

Table value required for 0.05 level of sig with df 29 is 1.699

The table 1 shows that the pre-test mean values of control group, physical exercise group and yogic practice group are 11.42, 11.43 and 11.59 respectively, and the post-test means are 11.40, 12.45 and 11.95 respectively. The obtained dependent t- ratio values between pre and post-test means of control group, physical exercise group, and yogic practice group are 0.681, 8.253 and 4.464 respectively. The table value required for significant difference with 29 at 0.05 level is

1.699. Since, the obtained ‘t’-ratio value of experiment groups are greater than the table value. It is understood that physical exercise group and yogic practice groups significantly improved the performance of haemoglobin. However, the control group has not improved significantly as the obtained ‘t’-value is less than the table value, because they were not subjected to any specific training.

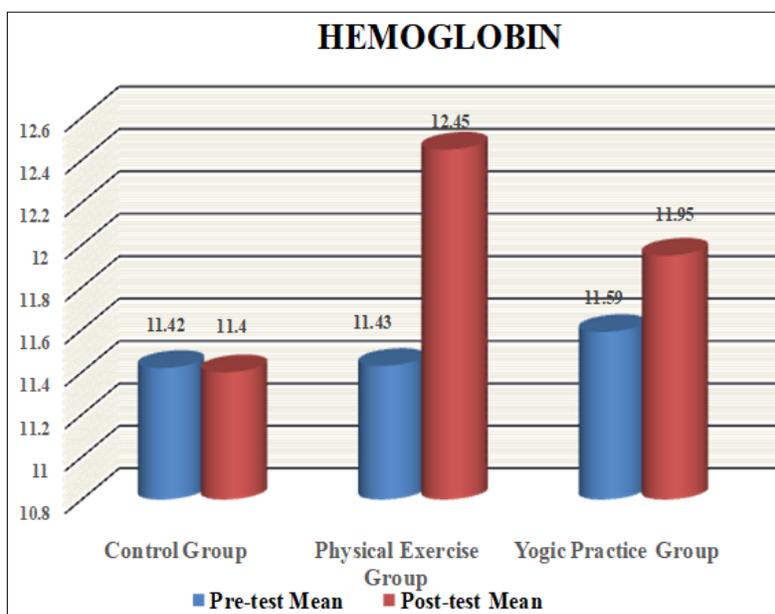


Fig 1: Bar Diagram showing Summary of Mean and Dependent t-Test for the Pre and Post Tests on Haemoglobin of Control Group, Physical Exercise Group and Yogic Practice Group (Scores in gm/ml)

Table 2: The Summary of Mean and Dependent t-Test for the Pre and Post-Tests on Cholesterol of Control Group, Physical Exercise Group and Yogic Practice Group (Scores in mg/dl)

	Pre-Test Mean	Post-Test Mean	't' Test
Control Group	170.99	171.24	1.674
Physical Exercise Group	166.15	157.31	44.826*
Yogic Practice Group	167.96	163.61	10.779*

Table 2: The Summary of Mean and Dependent t-Test for the Pre and Post-Tests on Cholesterol of Control Group, Physical Exercise Group and Yogic Practice Group (Scores in mg/dl)

	Pre-Test Mean	Post-Test Mean	't' Test
Control Group	170.99	171.24	1.674
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The table 4.21 shows that the pre-test means values of control group, physical exercise group and yogic practice group are 170.99, 166.15 and 167.96 respectively, and the post-test means are 171.24, 157.31 and 163.61 respectively. The obtained dependent t- ratio values between pre and post-test means of control group, physical exercise group, and yogic practice group are 1.674, 44.826 and 10.779 respectively. The table value required for significant difference with 29

at 0.05 level is 1.699. Since the obtained 't'-ratio value of experiment groups are greater than the table value. It is understood that physical exercise group and yogic practice groups significantly decreased the level of cholesterol. However, the control group has not decreased significantly as the obtained 't'-value is less than the table value, because they were not subjected to any specific training

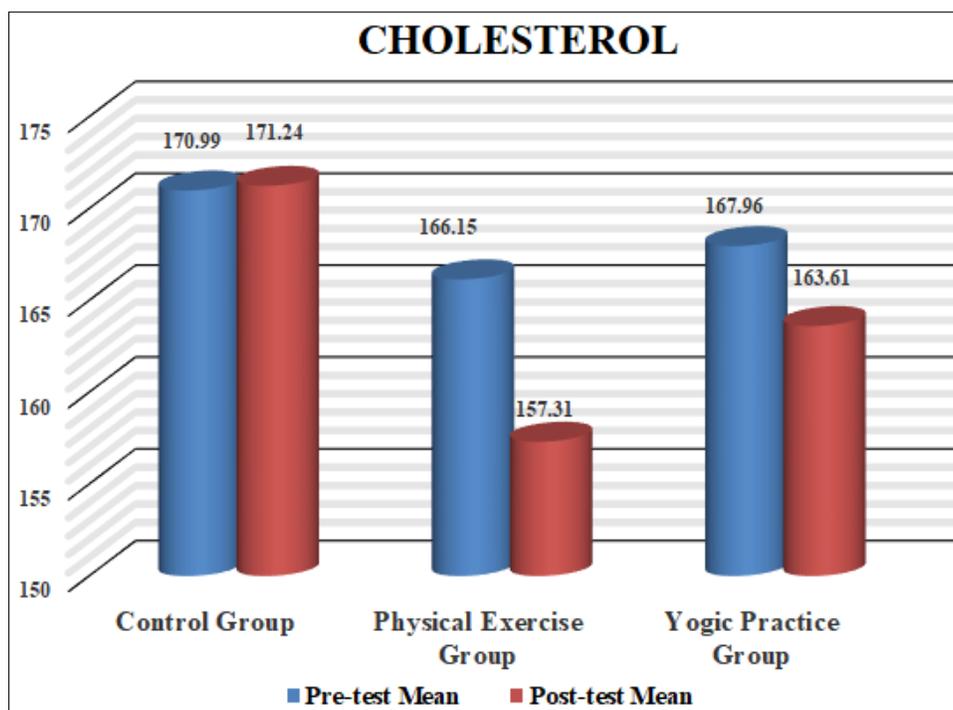


Fig 2: Bar Diagram showing Summary of Mean and Dependent t-Test for the Pre and Post-Tests on Cholesterol of Control Group, Physical Exercise Group and Yogic Practice Group (Scores in mg/dl)

Discussion on Findings of Hypothesis

1. There would be significant difference in the selected haematological and biochemical variables due to physical exercises among college women students.

The findings of the study showed that there was significant difference in selected haematological and biochemical variables such as haemoglobin and cholesterol due to physical exercises among college women students.

2. There would be significant difference in the selected haematological and biochemical variables due to yogic practice among college women students.

The findings of the study showed that there was significant difference in selected haematological and biochemical variables such as haemoglobin and cholesterol due to yogic practice among college women students.

3. There would be better improvement in the haematological and biochemical variables due to physical exercises than yogic practice among college women students.

The findings of the study showed that there was better improvement in selected haematological and biochemical variables such as haemoglobin and cholesterol due to physical exercise than yogic practice among college women students.

2. Chandrashekar, Deshapande. Effect of Six Weeks Yogasana Training on Haematological and Lipid Profile. *Indian Journal of Physio Pharmacol.* 2011; 155:5.
3. Thapar Balram. *Physical Education and Sports Training.* New Delhi, Rajath Publications, 2010, 101.
4. Yograj P, Ramraj P, Elangovan R. Effect of Selected Yogic Practices Physical Exercises on Bio-Chemical Variables among College Women Students. *Asian Journal of Physical Education and Computer Science in Sports.* 2010; 3(1):27-29.
5. World Health Organisation. *Essentials of Healthier Living. A Health Education Council Book,* New York, John Wiley and Sons Publications Inc, 1981, 2.

Conclusions

Based on above findings, the following conclusions were made:

1. The haemoglobin is increased significantly for the physical exercises group and yogic Practice when compared with the control group.
2. The cholesterol is increased significantly for the physical exercises group and yogic Practice when compared with the control group.

References

1. Akthar Shameem. *Yoga in the Work Place.* Manipal, Manipal Press Ltd, 2010, ix.