



“Influence of Aerobic Exercise and Yogic Asanas Intervention Program on Physical and Physiological Variables among College Students”

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Introduction:

Fitness is a very important and needy thing, for the human being. Growth and development initiates from the womb of the mother of each an individual. Hence we the physical educationalists we should always think about future generation. “Today’s children are the tomorrow’s nation builders and it is true that every nation’s progress and development depends upon the youths. Schools and Colleges are providing good platforms to promote health and wellness through the physical activities, aerobic exercises and yogic asanas. Human life span of many countries is more than India, i.e. Japan-84 years, Switzerland -81 years but average human life span of Indians is 63 years. Hence, every nation motivates and emphasizes their students to participate in physical activities for improving the health and well being for quality life. Exercising is most essential for proper health and fitness. Moreover, it is essential for every sphere of life. Especially today’s youth need to exercise more than ever. If you are not healthy, you cannot lead a happy and healthy life and won’t be able to contribute to the society. Thus, to put it simply, physical activity and exercise is important for everyone. It helps to beat all problems related to health.

When you exercise daily, your brain cells will release frequently. This helps in producing cells in the hippocampus. Moreover, it is the part of the brain which helps to learn and control memory, improving the mental well-being of human beings. A number of studies have found that a lifestyle that includes exercise helps alleviate depression, human stress and anxiety. Those who can maintain regular exercise will also reduce their chances of seeing a doctor. At the end of the day, it is up to the people to change their way of life.

Aerobic exercise:

It is also called as cardiovascular exercises it is a sustained, rhythmic activity that involves large muscle groups. Aerobic exercise makes the lungs work harder to help increased oxygen consumption. An aerobic exercise develops the capacity of hearts and lungs. Lots of exercises can be formulated under aerobic training, which can be included walking, running, jogging, cycling, swimming, bike endurance, rowing, dance etc. Aerobic exercise helps to increase the fitness, strength, develops muscle strength, improves cardio respiratory fitness, enhances the immune capacity of the body, maintain the cholesterol level, reduce the risk of diabetes, and also several psychological benefits such as confidence, emotional balance, memory power, co-ordination, group dynamics etc. overall it helps for better quality of life.

Yogic Asanas:

Yoga is a subtle science, philosophy and an art of healthy living. Yoga originated in India over 5000 years ago with the sole purpose of Spiritual Enlightenment. The word Yoga comes from Sanskrit root word called “Yuj” which means Union. According to Patanjali Yoga sutras, Yoga is defined as “Yujyete anenahitiyogah” which means, that which unites; in other words it is the union of Individual consciousness with Universal consciousness. To attain the spiritual enlightenment or Moksha, apart from a spiritual practice, physical practice of yoga offers immense benefits on physical, mental & emotional levels of a person. Regular practice of yoga asana also helps to improve the general motor skills and cognitive abilities. Because of these wide range of benefits, practices of yoga becomes one of a good choice to use as an intervention for well being of a human.

STATEMENT OF THE STUDY:

“Is there any Influence of Aerobic Exercise and Yogic Asanas Intervention Program on Physical and Physiological Variables among College Students?”

HYPOTHESIS:

1. There is no significant difference between pretest and posttest of cardio vascular endurance (12 min Kooper run and walk (in meters)), Balance (Stork Stand Test in seconds), flexibility (Sit and Reach (in centimeters) and Resting heart rate (Heart beats per minutes) scores of College male students in three groups (Aerobics exercise group, Yogic Asanas group & Control group.)

OBJECTIVE OF THE STUDY:

To know the influence of twelve week intervention (pre-test and post-test) training program on cardio vascular endurance (12 min Cooper run and walk (in meters)), Balance (Stork Stand Test in seconds), flexibility (Sit and Reach (in centimeters) and Resting heart rate (Heart beats per minutes) scores of College male students in three groups ((Aerobics exercise group, Yogic Asanas group & Control group.) in Aerobics exercises and yogic asana training group.

METHODOLOGY:**Physical Variables & Tools:**

1. Cardio-vascular endurance - Cooper's 12 min run/walk test (in meters)
2. Balance Stork stand (In Seconds)
3. Flexibility - Sit & reach test (Cm)

Physiological Variables & Tools:

1. Resting Heart Rate - pulse rate (heart beats per minutes)

Training Plan:

Groups	Sessions	Duration of the a session	Intensity
Aerobics Exercise group	4 sessions per week Total 48 hours	60 min	40 – 60%
Yogic Asanas group			40 – 50%
Control group	-	-	-

Collection of Data:

The standardized tests were administered on aerobics exercises and yogic asanas training and data were collected from college male students.

Total Sample Size	Aerobics group	Yoga Group	Control group
69	23	23	23

Statistical technique:

In pursuance of the objectives of the study as well as to test the research hypothesis “Independent t-test” has used to assess its effects on selected aerobics exercises and yogic asanas.

Analysis of the data & results:

In this section, we compared pretest and posttest scores on cardio vascular endurance (12 min Cooper run and walk (in meters)), Balance (Stork stand(Sec)), Flexibility (Sit and Reach (in centimeters) and Resting heart Rate(beats per minute) among College male students in three groups (Aerobics training and Yogic Asanas, Control)by independent t test and the results are presented in the following tables. To achieve this hypothesis, the independent t test was applied and the results are presented in the following tables.

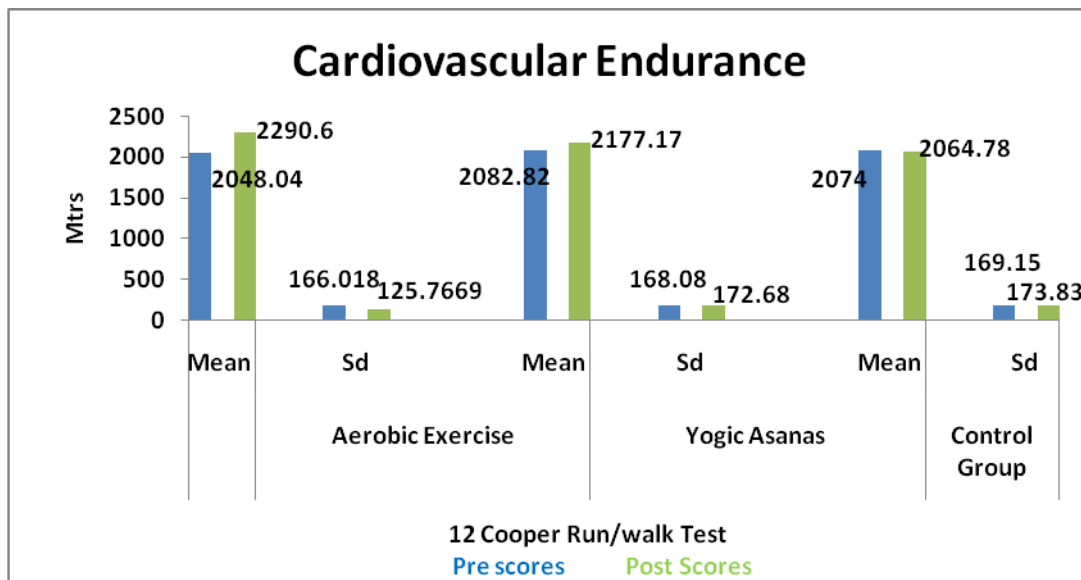
Hypothesis: There is no significant difference between pretest and posttest cardio vascular endurance (12 min Koooper run and walk (in meters)) scores of College male students in three groups (Aerobics exercise, Yogic Asanas, and Control groups).

Table 1: Results of t test between pretest and posttest cardio vascular endurance (12 min Cooper run and walk (in meters)) scores of College male students in three groups (Aerobics exercise, Yogic Asanas, and Control groups).

Aerobic Exercise, Yogic Asanas, Control		N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Aerobic Exercise Group – Cooper12mR/W Mtrs	Pre Test	23	2048.04	166.01855	2.029	.161	-5.934	44	.000
	Post Test	23	2290.6	125.76690					
Yogic Asanas Group - Cooper12mR/W Mtrs	Pre Test	23	2082.82	168.08067	.036	.851	-1.869	44	.068
	Post Test	23	2177.17	172.68301					
Control Group Cooper12mR/W Mtrs	Pre Test	23	2074.00	169.15861	.017	.895	.182	44	.856
	Post Test	23	2064.78	173.83115					

*p<0.05

A significant difference is observed between pretest and posttest scores of cardio vascular endurance in Aerobics Exercise group ($t=-5.934$, $p<0.05$) and no significant differences in Yogic Asanas group ($t=-1.869$, $p<0.05$) and Control group($t= .182$, $p<0.05$)at 5% level of significance. It means that, the posttest scores of cardio vascular endurance (12 min Cooper run and walk (in meters)) are significantly higher as compared to pretest scores of College male students in Aerobic exercise group. Hence the null hypothesis is partially rejected and alternative hypothesis is accepted. In this study Aerobic exercise group has shown better performance compare to other two groups.



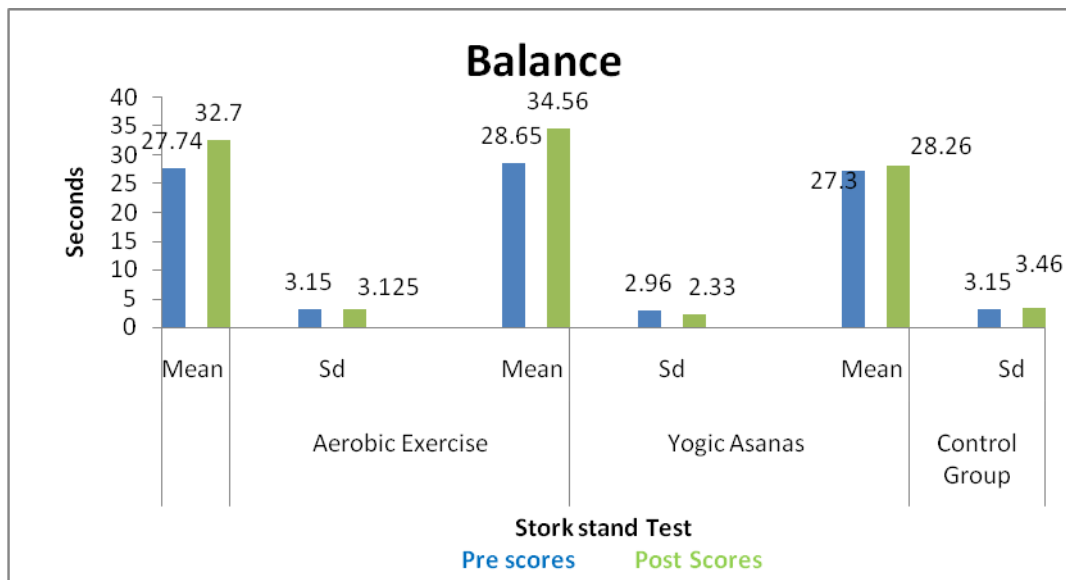
Hypothesis: There is no significant difference between pretest and posttest Balance (Stork stand (Sec)) scores of College male students in three groups (Aerobics exercise, Yogic Asanas, and Control groups).

Table 2: Results of t test between pretest and posttest Balance (Stork stand(Sec)) scores of College male students in three groups (Aerobics exercise, Yogic Asanas, and Control groups).

Aerobic Exercise, Yogic Asanas, Control	N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Aerobic Exercise Group – Pre Test	23	27.7391	3.15101	.050	.823	-5.356	44	.000
Stork Stand sec Post Test	23	32.6957	3.12519			-5.356	43.997	.000
Yogic Asanas Group - Pre Test	23	28.6522	2.96355	1.893	.176	-7.520	44	.000
Stork Stand sec Post Test	23	34.5652	2.33211			-7.520	41.695	.000
Control Group - Pre Test	23	27.3043	3.15414	.205	.653	-.979	44	.333
Stork Stand sec Post Test	23	28.2609	3.46695			-.979	43.612	.333

*p<0.05

There is a significant difference is observed between pretest and posttest scores of Balance (Stork stand (Sec)) in Aerobics Exercise group (t=-5.356, p<0.05), Yogic Asanas group (t=-7.520, p<0.05) and no significant difference in Control group (t= -.979, p<0.05) at 5% level of significance. It means that, the posttest scores of Balance (Stork stand test (Sec)) are significantly higher as compared to pretest scores of College male students in Aerobic exercise and Yogic Asanas group. Hence the null hypothesis is rejected and alternative hypothesis is accepted. In this study Yogic Asanas group has shown better performance compare to other two groups.



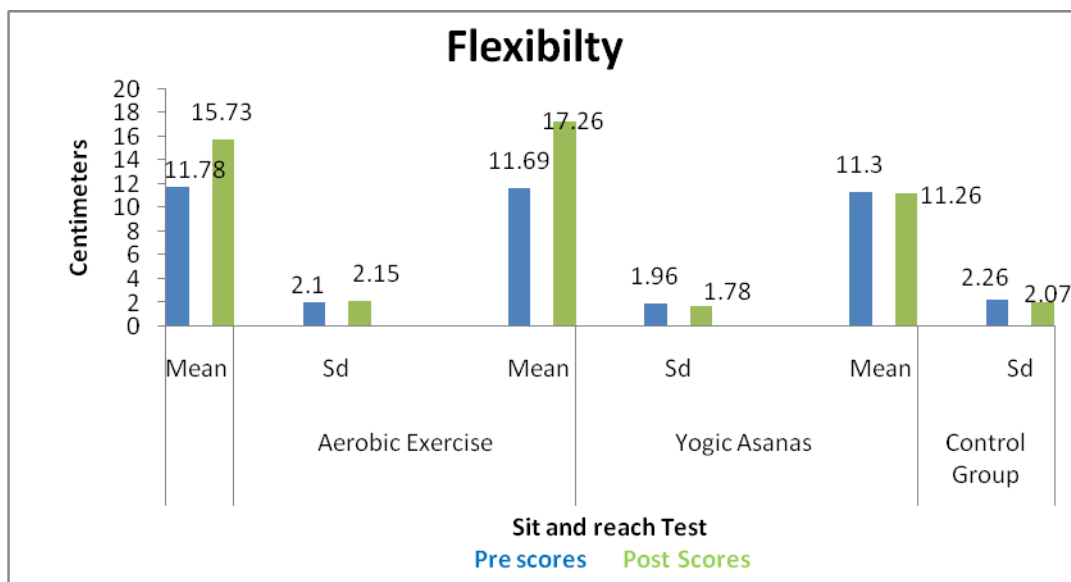
Hypothesis: There is no significant difference between pretest and posttest Flexibility (Sit and Reach (in centimeters) scores of College male students in three groups (Aerobics exercise, Yogic Asanas, and Control groups).

Table 3: Results of t test between pretest and posttest Flexibility (Sit and Reach (in centimeters) scores of College male students in three groups.(Aerobics exercise, Yogic Asanas, and Control groups).

Aerobic Exercise, Yogic Asanas, Control		N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Aerobic Exercise Group – Sit & Reach cm	Pre Test	23	11.7826	2.10964	.000	1.000	-6.288	44	.000
	Post Test	23	15.7391	2.15781					
Yogic Asanas Group - Sit & Reach cm	Pre Test	23	11.6957	1.96410	.177	.676	-10.045	44	.000
	Post Test	23	17.2609	1.78930					
Control Group - Sit & Reach cm	Pre Test	23	11.3043	2.26505	.350	.557	.068	44	.946
	Post Test	23	11.2609	2.07183					

*p<0.05

There is a significant difference is observed between pretest and posttest scores of Flexibility (Sit and Reach (in centimeters) in Aerobics Exercise group (t= -6.288, p<0.05), Yogic Asanas group (t= -10.045, p<0.05) and no significant difference in Control group (t= .068, p<0.05) at 5% level of significance. It means that, the posttest scores of Flexibility (Sit and Reach (in centimeters) are significantly higher as compared to pretest scores of College male students in Aerobic exercise and Yogic Asanas group. Hence the null hypothesis is rejected and alternative hypothesis is accepted. In this study Yogic Asanas group has shown better performance compare to other two groups.



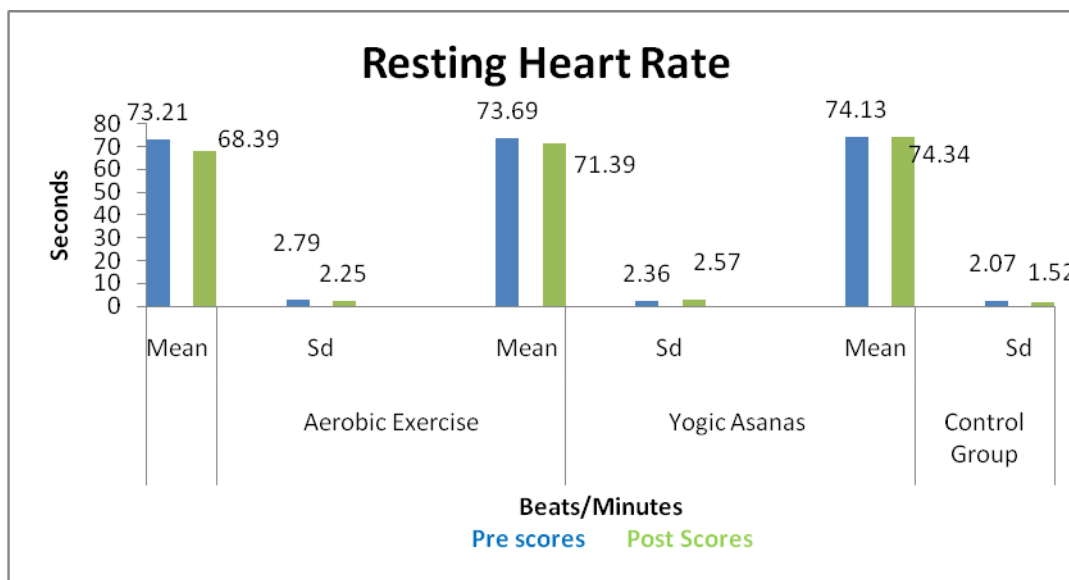
Hypothesis: There is no significant difference between pretest and posttest resting heart Rate (beats per minute) scores of College male students in three groups Aerobics exercise, Yogic Asanas, and Control groups).

Table 4: Results of t test between pretest and posttest resting heart Rate (beats per minute) scores of College male students in three groups Aerobics exercise, Yogic Asanas, and Control groups).

Aerobic Exercise, Yogic Asanas, Control		N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Aerobic Exercise Group – RHR b/m	Pre Test	23	73.2174	2.79539	.806	.374	6.449	44	.000
	Post Test	23	68.3913	2.25104			6.449	42.086	.000
Yogic Asanas Group - RHR b/m	Pre Test	23	73.6957	2.36326	.113	.738	3.164	44	.003
	Post Test	23	71.3913	2.57151			3.164	43.690	.003
Control Group - RHR b/m	Pre Test	23	74.1304	2.07374	.817	.371	-.405	44	.687
	Post Test	23	74.3478	1.52580			-.405	40.421	.688

*p<0.05

There is a significant difference is observed between pretest and posttest scores of resting heart Rate (beats per minute) in Aerobics Exercise group (t= 6.449, p<0.05), Yogic Asanas group (t- 3.164, p<0.05) and no significant difference in Control group (t= -.405, p<0.05) at 5% level of significance. It means that, the posttest scores of resting heart Rate (beats per minute) are significantly higher as compared to pretest scores of College male students in Aerobic exercise and Yogic Asanas group. Hence the null hypothesis is rejected and alternative hypothesis is accepted. In this study Aerobic exercise group has shown better performance compare to other two groups.



Conclusion:

1. With respect to Cardiovascular Endurance and Resting Heart Rate Aerobic Exercise group shows significant difference compare to other two selected groups.
2. With respect to Balance and Flexibility Yogic Asanas group shows significant difference compare to other two selected groups.

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