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## Effect of yogasana, aerobics exercise on selected physical fitness and psychological variables among school girls

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### Abstract

The purpose of the study is to find out the influence of yogasana, aerobics exercise on selected physical fitness and psychological variables among school girls from government higher secondary school Dindigul, Tamil Nadu, India. 60 girls are selected for this particular study. These subject are divided into three groups; Experimental group 1 acted as yoga group n=20, Experimental group 2 acted as aerobics group n=20 and control group 3n=20. The control group does not engage Yoga Sana and aerobic training.

**Keywords:** Yoga, aerobic, muscular strength, flexibility, stress, anxiety

### 1. Introduction

Yoga has become an important tool to maintain health and improve quality of life. Yogasanas are simple actions for keeping the internal and external parts of the body in good health. Yogic exercise affects by and large all the organs and system of the body. It specially affects the muscles and sinews. Yoga has gained popularity as a way to achieve relaxation and meditative states. When stepped its mystical elements, yoga emerges as a safe, enjoyable and relaxing flexible programme.

Yoga is the oldest system of personal development encompassing body, mind and spirit. The word yoga is derived from the Sanskrit root Yuj, means to join or to yoke. In philosophical terms, yoga refers to the union of the individual self with the universal self. Yoga is an ancient Indian practice, first described in Vedic scriptures around 2500 B.C., and utilizes mental and physical exercises to attain samadhi, or the union of the individual self with the infinite [Ani, 16] <sup>[1]</sup>.

Aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Aerobic means "with oxygen" and refers to the use of oxygen in the body's metabolic or energy-generating process. Many types of aerobic exercises are performed at moderate levels of intensity to extended periods of time. To obtain the best results, an aerobic exercise session involves a warming up period followed by at least 20 minutes of moderate to intense exercise involving large muscle groups and a cooling down period at the end.

### 2. Related Works

Black *et al.*, [Bla, 19] <sup>[2]</sup> analyzed the impact of inadequate sports facilities. The study proved to have less physical, mental health issues. Angel Robert [Ang, 18] studied the impact of resistance training on men Basketball players for different variables. The study proved significant changes in the performances. Ferreira *et al.*, [Fer, 15] <sup>[5]</sup> explored the available literature related to Yoga. Some variables were considered for the study.

Arbinaga *et al.*, [Arb, 18] <sup>[4]</sup> analyzed the placebo effect based on the seven –week program of aerobic training. The study proved with very positive results. Golec *et al.*, [Gol, 17] <sup>[6]</sup> focused on the effects of yogic breathing and meditation. The effects of postures were compared and predicted bodily energy. Joanna *et al.*, [Joa, 17] <sup>[7]</sup> investigated the academic performance and cognitive function.

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**3. Problem definition**

School students are very much interested to play mobile games than yoga and aerobic exercises. But, the researchers analyzed the physical fitness and psychological variables among the students through simplified yoga practices and aerobic exercises. This reason influenced for selecting this particular study area.

**4. Hypotheses**

In order to integrate the Yoga module, the authors intend to select three groups. It is hypothesized that the Yogasan and

Aerobics will improve the selected Physical fitness components, Physiological & Psychological Variables among School girls.

**5. Methodology**

Total of 60 girls are selected for this study. These subject were divided into three groups; Experimental group-1 acted as yoga group n=20, Experimental group-2 acted as aerobics group n=20 and control group -3 n=20. The control group was not engaged yogasana and aerobic training.

**Table 1:** Types of variables

Variables Types Used	Criterion of Variables	Standard Test to BE Used	Unit
Physical fitness variables	Muscular strength	Pull ups	Numbers/ minutes
	Flexibility	Sit and reach test	Centimeters
Psychological variables	Stress	DASS inventory	Numbers
	Anxiety		

The Data collected from the month of December 2018 to January 2019 having regular classes are utilized to analyze the performance. The researcher has specialized in yoga and administered the yoga programme. The subjects participate in yoga programme for six days in a week at indoor hall, only for a period of 6 weeks. The subjects are instructed about the administration of programme.

For the analysis, the data collected from the school students, Mean and SD are computed. To find out the effect of yoga

and aerobic exercise on selected physical & physiological variables of student's 't' test is applied. The Purpose of testing the hypothesis, the level of significance is set at level 0.05

**6. Result and Discussion**

The primary objective of the paired 't' ratio is to describe the differences between the pre-test and post-test mean of school girls.

**Table 2:** Mean gains & losses between pre and post test scores on selected variables of yoga group

S. No	Variables	Mean		Mean difference	SD (±)		Σ DM	't'
		Pre	Post		Pre	Post		
1	Muscular Strength	13.54	21.05	6.80	2.68	3.54	0.38	17.74
2	Flexibility	14.35	23.05	9.10	3.09	4.31	0.10	9.19
3	Stress	35.30	21.95	13.55	7.07	4.24	0.67	15.33
4	Anxiety	21.40	14.45	7.05	3.65	4.59	0.67	10.37

An analysis of the above table indicates the obtained 't' ratio are 17.74, 9.19, 15.33, 10.37 for muscular strength, flexibility, stress and anxiety respectively. The obtained 't' ratios on the selected variables were found to be greater than the required

table value of 2.861 at 0.05 level of significance for 19 degrees of freedom. So, it is found to be significant. The results of this study showed effects positively. The obtained results are in confirmatory with the results.

**Table 3:** Mean gains & losses between pre and post test scores on selected variables of aerobic group

S. No	Variables	Mean		Mean difference	SD (±)		Σ DM	't'
		Pre	Post		Pre	Post		
1	Muscular Strength	13.74	22.07	6.80	2.68	3.54	0.38	17.74
2	Flexibility	14.85	20.05	9.10	3.09	4.31	0.10	9.19
3	Stress	32.30	30.95	13.55	7.07	4.24	0.67	15.33
4	Anxiety	20.40	16.45	7.05	3.65	4.59	0.67	10.37

An examination of table indicates that obtained 't' ratio are 17.74, 9.19, 15.33, 10.37 for muscular strength, flexibility, stress and anxiety respectively. The obtained 't' ratios on the

selected variables are found to be greater than the required table value of 2.861 at 0.05 level of significance for 19 degrees of freedom. So it is found to be significant.

**Table 4:** Mean gains & losses between pre and post test scores on selected variables of control group

S. No	Variables	Mean		Mean difference	SD (±)		Σ DM	't'
		Pre	Post		Pre	Post		
1	Muscular Strength	12.10	21.00	0.80	2.38	1.97	0.31	1.44
2	Flexibility	14.00	13.05	2.10	2.09	3.31	0.09	0.60
3	Stress	35.30	34.96	3.55	1.07	7.24	1.58	1.33
4	Anxiety	24.40	18.44	0.05	5.65	4.97	1.67	0.37

An examination of table indicates that obtained 't' ratio are 1.44, 0.60, 1.33, 0.37 for muscular strength, flexibility, stress and anxiety respectively. The obtained 't' ratios on the

selected variables are found to be lesser than the required table value of 2.861 at 0.05 level of significance for 19 degrees of freedom. So it is found to be significant and proved

confirmatory with the results.

The following diagram illustrates the statistical results of the effect of yoga, aerobic practices on selected Physical fitness, psychological variable among school girls.

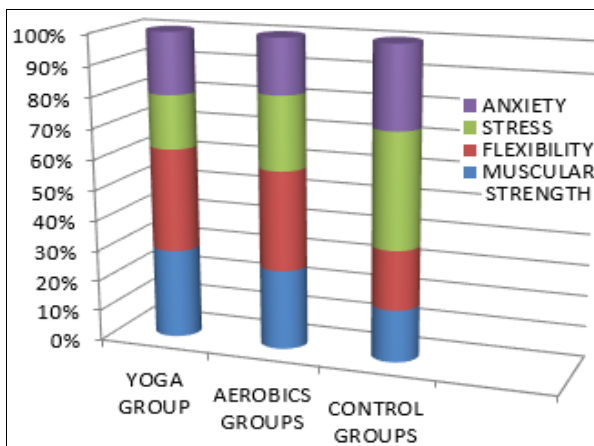


Fig 1: Adjusted Mean Values of Variables

### 7. Conclusion and recommendation

Based on the results of the study, the following conclusions have been arrived.

1. It is clear that 6 week of yoga-sana training group produced significant changes in physical fitness, psychological variables of school girls.
2. Further the six week of yogic practice training group has also produced significant changes in physical fitness, psychological variables among school girls.
3. Yoga practice has shown significant improvement than aerobic practice training group and control group in flexibility, stress and anxiety.
4. The aerobic training group and yoga training group are similar to improve the muscular strength. But, there is a trend in favour of the yoga training group.

### 8. The following recommendations have been made based on the results of the study

1. Similar this study may also be conducted for women with gynecological disorders.
2. Studies of similar nature may also be to find out the hormonal response to yoga and aerobics.
3. Yoga may be included in current and future public health promotion.

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