

EFFECT OF YOGIC PRACTICES ON BODY MASS INDEX AND PULSE RATE AMONG ADOLESCENT GIRLS

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ABSTRACT

The purpose of the study was to find out the effect of Yogic Practices on Body Mass Index and Pulse Rate among Adolescent Girls. It was hypothesized that there would be a significantly improved on Body Mass Index and Pulse Rate among Adolescent Girls due to Yogic Practices group than the control group. To achieve the purpose of the study investigator selected 30 Adolescent Girls were randomly selected from Chennai district. Their age ranges from 12 to 17 years. The subjects were divided into two equal groups namely, experimental group and control group. After analyzing the various factors associated with the presented study. Selected physiological variables - Body Mass Index was measured through measured using Weighing machine and Stadiometer and Pulse Rate was measured through measured using by counting the beats per minutes. The selected subjects underwent eight weeks Yogic Practices from Monday to Friday every week. The collected data were Analysed statistically by analysis of covariance (ANCOVA) test and 0.05 was fixed as the level of significance. It was concluded that significantly decreased in the Body Mass Index and Pulse Rate due to effect of eight weeks training of Yogic Practices when compared to control group among Adolescent Girls.

Key words: Yogic Practices, Adolescent Girls, Body Mass Index and Pulse Rate

INTRODUCTION

Adolescence is characterized by dramatic physical changes moving the individual from childhood into physical maturity. Early, prepubescent changes are noted with the appearance of secondary sexual characteristics. Girls may begin to develop breast buds as early as 8 years old, with full breast development achieved anywhere from 12 to 18 years. Pubic hair growth, as well as armpit and leg hair typically begins at about age 9 or 10, and reaches adult distribution patterns at about 13 to 14 years. Menarche (the beginning of menstrual periods) typically occurs about 2 years after initial pubescent changes are noted. It may occur as early as 10 years, or as late as 15 years, with the average in India being about 12.5 years. A concurrent rapid growth in height occurs between the ages of about 9.5 and 14.5 years, peaking somewhere around 12 years.

A concurrent rapid growth in height occurs between the ages of about 10.5 to 11 and 16 to 18, peaking around age 14. The human body has several glands, many of which are ductless. The various hormones they produce kill germs in our body as they mingle with the blood. If these glands work as well as they should, we would all be disease-free. Yoga gives strength to these glands to do their job properly. Each gland secretes a different fluid that affects a different function in the body. Hormones secreted by ductless glands are very important for a healthy life. When hormones are at a particular performance level, the body can function to its optimum. The improper functioning of these glands is usually the primary cause of most diseases. Fortunately, there are yogic practices that activate each of these glands. (Dr. Anandha Balayogi Bhavanani, 2004). Body Mass Index and Pulse Rate are both the most prevalent and most important factors affecting the psychosocial function of the elderly people. Yogic Practices is one of the very antiquity and for most sciences. Yogic Practices helps to promote a balanced development of physical, mental and spiritual wellbeing.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of Yogic Practices on Body Mass Index and Pulse Rate among Adolescent Girls.

HYPOTHESIS

It was hypothesized that there would be a significantly improved on Body Mass Index and Pulse Rate among Adolescent Girls due to Yogic Practices group than the control group.

REVIEW OF RELATED LITERATURE

Sridevi, K. J., & Elangovan, R. (2020). Conducted study on the effect of Yogic Practices on Body Mass Index and Pulse Rate among Adolescent Girls. For the purpose of the study, 30 stressed adolescent girls were chosen randomly using random sampling group method they came from Chennai between the ages of 14 and 18, and were split into two classes, I and II, each with 15 subjects. It was hypothesized that there will be substantial variations in physiological and psychological factors such as Body Mass Index (BMI) and Depression in the teenage depressed girls than in the control group. Preliminary test was conducted for two Groups on Body Mass Index (BMI) and Stress before the start of the training program. Group I subjects were given

Yogic practices for 60 minutes, 6 days a week for a total period of eight weeks. Group II (Control Group) were in active rest. After the experimental period, the two groups were retested again on the same dependent variables. Co-variance analysis (ANCOVA) was used to assess the relevant distinctions between the experimental group and the control group. The significance test was set at a degree of trust of 0.05. The results of the study proved that the Experimental Group showed significant differences on selected physiological and psychological variables such as Body Mass Index (BMI) and Stress than the Control Group due to Yogic practices among adolescent stressed girls. The theory was agreed at a confidence level of 0.05. Therefore it is concluded that teenage girls benefit from Yogic activities to sustain a balanced Body Mass Index (BMI) and to overcome stress.

Barnes, V. A. (2016). Conducted study on the Impact of Yoga on Exercise and Blood Pressure in Adolescents. Forty adolescents (21 Female/19 Male; 34 Black/6 White, mean age 16.1 ± 1.7 yrs) with BMI for age ≥ 95 th percentile by gender, (BMI: ≥ 28 for girls; ≥ 27 for boys) from high school health/physical education classes were randomly assigned to 10 weekly 50 min. sessions of yoga at school ($n=20$), or evaluation only control ($n=20$) conditions. Participants were evaluated at pre- and 3 months post-test, and at 3 months follow up. Ambulatory BP measurements were obtained over 24 hour periods in the natural setting using Space Labs 90207 BP monitors. A lifestyle behavior survey assessed exercise habits and physical activity. Self-reported yoga home practice averaged 29 min/day; range=10-60 min/day; mean= 4.1 times per week; range 1-14 times per week. Differences between groups at baseline did not reach statistical significance. A significant group by time interaction was observed for 24-hr systolic BP such that the yoga group decreased from 118.8 ± 9.7 to 114.9 ± 8.6 mmHg compared to an increase (115.9 ± 6.2 to 119.4 ± 7.5 mm Hg) in the control group across the 6-month study ($p < 0.04$). The findings were observed over a relatively short intervention period and suggest beneficial impact of yoga upon blood pressure and exercise in overweight adolescents. Replication and verification in a larger group with a longer follow-up is warranted.

METHODOLOGY

For the purpose of these random groups experimental study. Thirty (30) Adolescent Girls in Chennai were selected at random as subjects based on their Body Mass Index and Pulse Rate and their age was ranged from 12 to 17 years. Yogic Practices was given five days (Monday to Friday at 6.00 pm to 7.00 pm) per week for eight weeks. All the subjects were randomly assigned to experimental groups and control group each consisted of 15 subjects. Experimental groups were involved in Yogic Practices (12) weeks and the control group kept in active rest. The Yogic Practices given to experimental group include Starting prayer, Loosening the joining, Suryanamaskar, Padahasthasana, Trikonasana, Vrikshasana, Parvatasana, Shasangasana, Gomukhasana, Paschimottasana, Ardhamatsyendrasana, Bhujangasana, Dhanurasana, Sarvangasana, Kapalabati, Sheetal, Bhramari pranayamas, OM Chanting, NadiShodhana, Shavasana, Yoga Nidra (Relaxation) Techniques. Initially pre-test was taken and after the experimental period of eight weeks, post-test was taken from all the two groups. Selected physiological variables - Body Mass Index was measured through measured using Weighing machine and Stadiometer and Pulse Rate was measured through measured using by counting the beats per minutes. The differences between initial and final Body Mass Index and Pulse Rate were considered as the effect of Yogic Practices on selected subjects. Analysis of Covariance (ANCOVA) was used to find out the difference among the experimental and control groups. The test of significance was fixed as 0.05 level of confidence.

RESULTS AND DISCUSSION

The data pertaining to the variables collected from the two groups before and after the training period were statistically analyzed by using Analysis of Covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

RESULTS ON BODY MASS INDEX

The Analysis of Covariance (ANCOVA) on Body Mass Index Yogic Practices and control group was analyzed and are presented in table-I

Table-I
COMPUTATION OF ANALYSIS OF COVARIANCE ON BODY MASS INDEX OF
EXPERIMENTAL GROUPS CONTROL GROUP (in kg/m²)

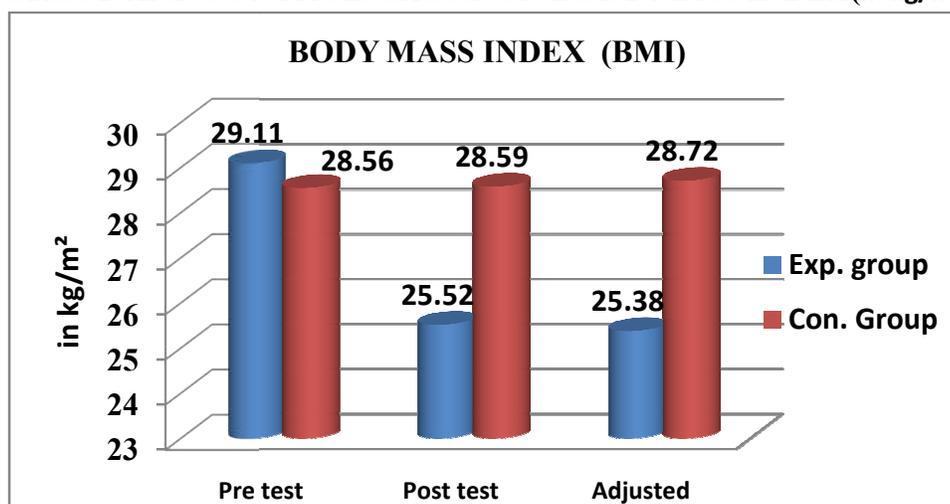
Test	EXP GROUP	CON GROUP	SV	SS	Df	MS	F
Pre test Mean	29.11	28.56	Between	2.29	1	2.29	1.58
			Within	40.51	28	1.44	
Post test Mean	25.52	28.59	Between	70.84	1	35.42	23.00*
			Within	43.11	28	1.53	
Adjusted test Mean	25.38	28.72	Between	79.06	1	39.53	31.50*
			Within	33.87	27	1.25	
mean difference	3.59	0.03					

*Significant at 0.05 level of confidence (Table F ratio at 0.05 level of confidence for df 1 and 28 = 4.20, 1 and 27 = 4.21).

The obtained F-ratio value for the Body Mass Index were greater than the table value, it indicates that there was a significant difference among post test and adjusted post-test means of the Yogic Practices group than the control group. The pre-test, post-test and adjusted post-test mean values of Yogic Practices and the control group on Body Mass Index were graphically presented in Figure 1.

Figure 1

BAR DIAGRAM SHOWING THE MEAN DIFFERENCE OF YOGIC PRACTICES GROUP AND CONTROL GROUP ON BODY MASS INDEX(in kg/m²)



*Significant at 0.05 level of confidence

RESULTS ON PULSE RATE

Table-II
COMPUTATION OF ANALYSIS OF COVARIANCE ON PULSE RATE OF
EXPERIMENTAL GROUPS AND CONTROL GROUP
(in scores)

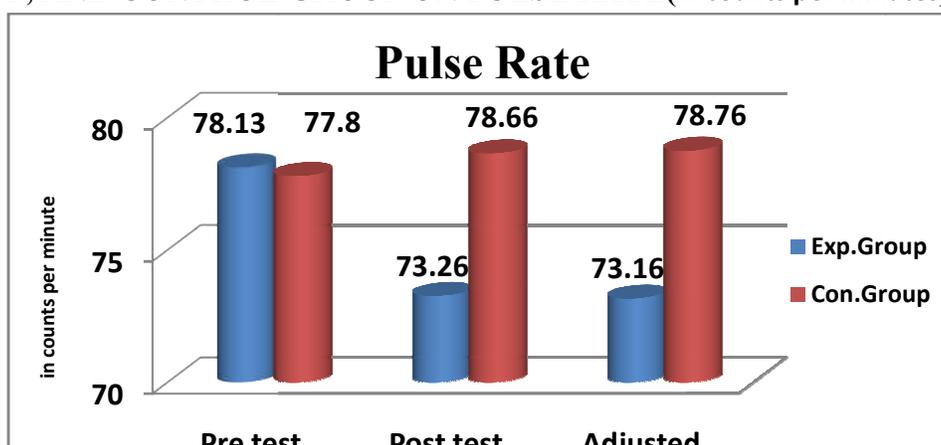
Test	EXP GROUP	CON GROUP	SV	SS	Df	MS	F
Pre test Mean	78.13	77.8	between	0.83	1	0.83	0.46
			within	50.13	28	1.79	
Post test Mean	73.26	78.66	between	218.7	1	109.35	50.80*
			within	60.26	28	2.15	
Adjusted test Mean	73.16	78.76	between	231.56	1	115.78	74.87*
			within	41.75	27	1.54	
mean difference	4.86	0.86					

* Significant at 0.05 level of confidence (Table F ratio at 0.05 level of confidence for df 1 and 28 = 4.20, 1 and 27 = 4.21).

The obtained F-ratio value for the Pulse Rate were greater than the table value, it indicates that there was a significant difference among post test and adjusted post-test means of the Yogic Practices group than the control group. The pre-test, post-test and adjusted post-test mean values of Yogic Practices and the control group on Pulse Rate were graphically presented in Figure 2.

Figure 2

BAR DIAGRAM SHOWING THE MEAN DIFFERENCE OF YOGIC PRACTICES GROUP, AND CONTROL GROUP ON PULSE RATE(in counts per minutes)



*Significant at 0.05 level of confidence

CONCLUSION

It was concluded that there was significantly decreased in the Body Mass Index and Pulse Rate due to effect of eight weeks training of Yogic Practices when compared to control group among Adolescent Girls.

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