International Journal of Applied and Advanced Scientific Research (IJAASR)
Impact Factor: 5.655, ISSN (Online): 2456 - 3080
(www.dvpublication.com) Volume 3, Issue 1, 2018

AN ANALYSIS OF OBESITY AMONG CHILDREN AND YOGIC SOLUTIONS COMBINED WITH PHYSICAL TRAINING ON BODY COMPOSITION

A. Umamaheswari* & Dr. A. Uthirapathy**
* Ph.D Research Scholar, Department of Physical Education, Bharathidasan University, Tiruchirappalli, Tamilnadu
** Director, Research Department of Yoga and Physical Education, Thiru Vi. Ka Government Arts College, Tiruvarur, Tamilnadu

Cite This Article: A. Umamaheswari & Dr. A. Uthirapathy, "An Analysis of Obesity among Children and Yogic Solutions Combined With Physical Training on Body Composition", International Journal of Applied and Advanced Scientific Research, Volume 3, Issue 1, Page Number 377-380, 2018.

Abstract:

The purpose of the study was to find out the effects of yogic practices combined with physical training on selected variables among obese children. To achieve the purpose of the present study, forty five obese children from GEMS Our Own English High School, Dubai, U.A.E, were selected as subjects at random and their ages ranged from 10 to 12 years. The subjects were divided into three equal groups of fifteen obese children each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (N=45) were randomly assigned to three equal groups of fifteen obese children each. The groups were assigned as combined yogic practices & physical training, physical training and control group in an equivalent manner. The group I underwent combined yogic practices & physical training, group II underwent physical training and group III acted as a control group. The two experimental groups were participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Dependent 't' test, analysis of covariance (ANCOVA) and scheffe's post-hoc test was administered. The combined yogic practices & physical training group had shown significant reduction on body composition than the physical training and control group.

Key Words: Obesity, Children, Yoga, Physical & Body Composition.

Introduction:

The occurrence of childhood obesity, which is defined as the being there of an excess of body fat that induces health risks, is increasing at upsetting rates around the globe (Winhnhoven et al., 2013; Nordstrand et al., 2016). Obesity has also been defined as a body mass index (BMI) that is at or above the 95th percentile for age and sex (Ogden et al., 2008). In urbanized countries, obesity has in the recent years reached epidemic levels. For example, it is estimated that 17% of children aged between 2 and 19 years are obese and that 25% are overweight and hence at the risk of also becoming obese (Centers for Disease Control and Prevention, 2015; Stark et al., 2017). Despite the various interventions by stakeholders the levels of obesity have remained too high.

One of the main causes of obesity in UAE is the presence of high levels of inactivity among children. In a previous international comparison that involved 34 countries, it was reported that only 19% of school going adolescents in the UAE engage in the recommended levels of physical activity. This is in contrast to Uruguay (41.5%) and India (36.8%). Gender discrepancies were also observed with more boys than girls engaging in physical activity in the UAE (Guthold et al., 2010). Similar findings were made by Yammine (2016) who in particular found that among the young population in the UAE almost a quarter have a total sedentary lifestyle that is devoid of physical activity. The research further established that less than half of the sample was mildly involved in physical activities while a fifth engaged in moderate levels of PA. Only a quarter of the respondents were involved in vigorous physical activity. In relation to gender Yammine (2016) further found that female adolescents were mainly involved in mild physical activity while their male counterparts were characterised by moderate and high physical activity. As such, girls in the UAE are marked by low levels of PA and hence more exposed to the problem of obesity compared to boys. On this basis it is necessary to undertake a research determining whether a well-planned physical activity program would be useful in managing obesity among girls in the UAE.

Methodology:

The purpose of the study was to find out the effects of yogic practices combined with physical training on selected variables among obese children. To achieve the purpose of the present study, forty five obese children from GEMS Our Own English High School, Dubai, U.A.E, were selected as subjects at random and their ages ranged from 10 to 12 years. The subjects were divided into three equal groups of fifteen obese children each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (N=45) were randomly assigned to three equal groups of fifteen obese children each. The groups were assigned as combined yogic practices & physical training, physical training and control group in an equivalent manner. The group I underwent combined yogic practices & physical training, group II underwent physical training and group III acted as a control group. The two experimental groups were participated the

training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Dependent 't' test, Analysis of covariance (ANCOVA) and scheffe's post-hoc test was administered.

Results and Discussion:

The results of the dependent 't'-test on the data obtained for body mass index of the subjects in the pre-test and post-test of the experimental and control groups have been analysed and presented in Table I.

Table 1: The Summary of Mean and Dependent 't' - Test for the Pre and Post Tests on Body Composition of Combined Yogic Practices with Physical Training, Physical Training and Control Groups

	CYPPTG	PTG	CG
Pre-test mean	31.45	31.67	32.22
Post-test mean	29.31	30.42	32.03
't'-test	6.96*	4.54*	0.78
Magnitude of Improvement	6.81%	3.94%	0.58%

* Significant at 0.05 level.

(Body mass index scores in kilograms/metre^2)

(Table value required for significance at 0.05 level for't'-test with df 14 is 2.14)

From table 1 the dependent 't' test values, on body composition between the pre and post test means of combined yogic practices with physical training group and physical training group are 6.96 and 4.54 respectively. Since the obtained 't'-test values of the experimental groups are greater than the table value 2.14 with df 14 at 0.05 level of confidence it is concluded that combined yogic practices with physical training group and physical training group had registered significant reduction on body composition and in case of control group the obtained 't' value 0.78 is failed to reach the significant level. From the table it is also observed that the magnitude of improvement (MI) of body composition due to the influence of combined yogic practices with physical training group, physical training group and control group are 6.81%, 3.94% and 0.58% respectively. It indicates that the combined yogic practices with physical training had registered better percentage of reduction in body composition. The analysis of covariance (ANCOVA) on body composition of combined yogic practices with physical training group, physical training group and control group have been analysed and presented in table 2.

Table 2: Analysis of Covariance on Body Composition of Combined Yogic Practices with Physical Training, Physical Training and Control Groups

Adjusted Post-test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
CYPPTG	PTG	CG					
29.31	30.40	32.01	BG	97.80	2	48.90	67.93*
			WG	29.51	41	0.71	

* Significant at.05 level of confidence

(The table value required for Significant at 0.05 level with df 2 and 41 is 3.22)

Table 2 shows that the adjusted post test mean value of body composition for combined yogic practices with physical training group, physical training group and control group are 29.31, 30.40 and 32.01 respectively. The obtained F-ratio of 67.93 for the adjusted post test mean is more than the table value of 3.22 for df 2 and 41 required for significance at 0.05 level of confidence. The results of the study indicates that there are significant differences among the adjusted post test means of combined yogic practices with physical training group, physical training group and control group on reduction of body composition. To determine which of the paired means had a significant difference, Scheffe's test was applied as post hoc test and the results are presented in table 3.

Table 3: The Scheffe's Test for the Differences between the Adjusted Post Test Paired Means on Body Composition

Adjusted Post-test means			Mean Difference	Confidence Interval
CYPPTG	PTG	CG		
29.31	30.40	--	1.09*	0.64
29.31	--	32.01	2.70*	0.64
--	30.40	32.01	1.61*	0.64

* Significant at.05 level of confidence

Table 3 shows that the mean difference values between combined yogic practices with physical training and physical training groups; combined yogic practices with physical training and control group, physical training and control groups were 1.09, 2.70 and 1.61 respectively on body composition which are greater than the confidence interval value 0.64 at 0.05 level of confidence. The results of the study showed that there was significant difference between combined yogic practices with physical training and physical training groups; combined yogic practices with physical training and control group, physical training and control groups on body composition.

The mean values of combined yogic practices with physical training group, physical training group and control group on body composition are graphically represented in the figure 1.

The adjusted post test mean values of combined yogic practices with physical training group, physical training group and control group on body composition are graphically represented in the figure 2.

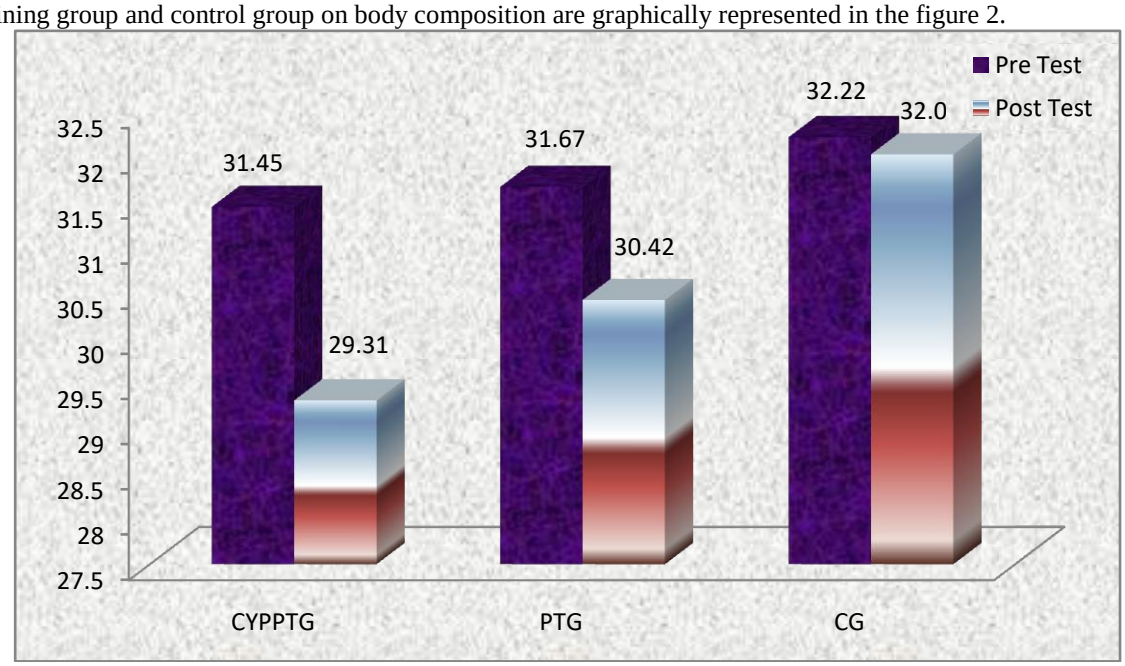

Figure 1: Mean Values of Yogic Practices, Combined Yogic Practices with Physical Training and Control Groups on Body Composition

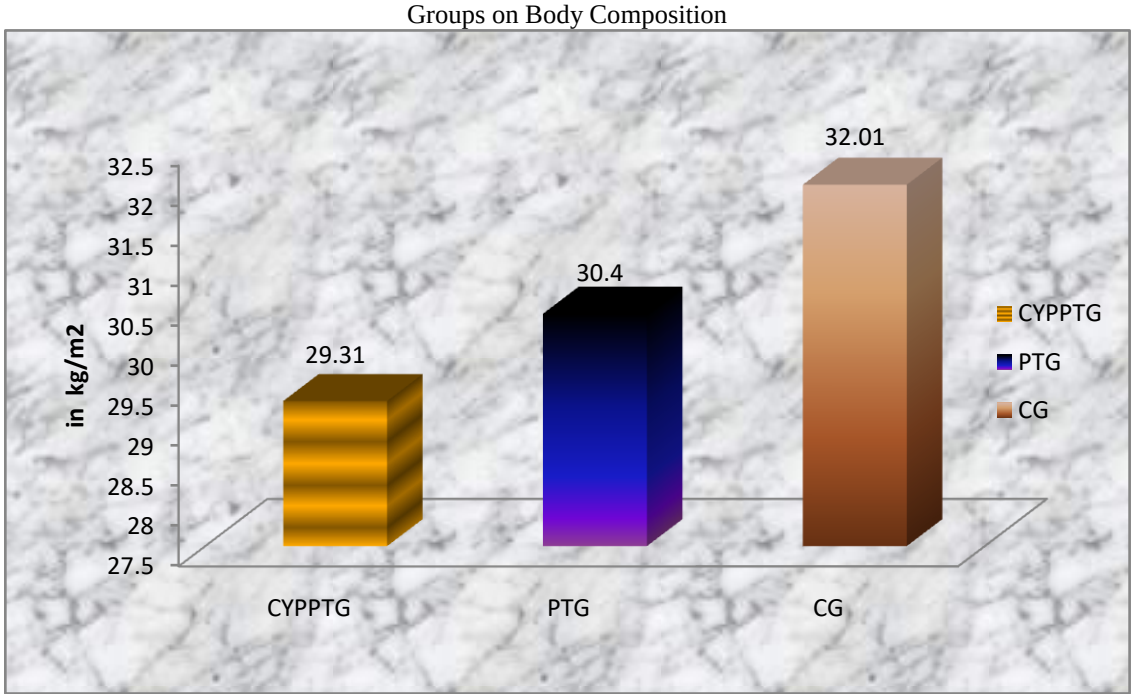

Figure 2: The Adjusted Post Tests Mean Values of Combined Yogic Practices with Physical Training, Physical Training and Control Groups on Body Composition

Conclusion:

- ✓ The combined yogic practices & physical training group had shown significant reduction on body composition.
- ✓ The physical training group had shown significant reduction on body composition.
- ✓ The combined yogic practices & physical training group had shown significant reduction on body composition than the physical training and control group.

References:

1. Andre Van Lysebeth, (1987). Yoga Self – Taught, Delhi: Tarage Paper Back.
2. Clarke, Harrison. H, & Clarke, H. David, (1972). Advanced Statistics with Application to Physical Education, New Jersey: Englewood Cliffs, Prentice Hall, Inc.

3. Chandrasekaran. K (2003). Yoga for Health, Delhi; Khel Sathiya Kendra.
4. Guthold, R., Cowan, M. J., Autenrieth, C. S., Kann, L., & Riley, L. M. (2010). Physical activity and sedentary behavior among schoolchildren: a 34-country comparison. The Journal of pediatrics, 157(1), 43-49.
5. Nordstrand, A., Fridlund, B., & Sollesnes, R. (2016). Implementation of national guidelines for the prevention and treatment of overweight and obesity in children and adolescents: a phenomenographic analysis of public health nurses' perceptions. International journal of qualitative studies on health and well-being, 11(1), 31934.
6. Ogden, C. L., Carroll, M. D., &Flegal, K. M. (2008). High body mass index for age among US children and adolescents, 2003-2006. Jama, 299(20), 2401-2405.
7. Stark, C. M., Devine, C. M., & Dollahite, J. S. (2017). Characteristics associated with the application of an ecological approach to preventing childhood obesity. Public health nutrition, 20(1), 174-182.
8. Wijnhoven, T. M. A., Raaij, J. M. A., Spinelli, A., Rito, A. I., Hovengen, R., Kunesova, M & O'Dwyer, U. (2013). WHO European Childhood Obesity Surveillance Initiative 2008: weight, height and body mass index in 6–9-year-old children. Pediatric obesity, 8(2), 79-97.
9. Yammine, K. (2016). The prevalence of physical activity among the young population of UAE: A meta-analysis. Perspectives in public health, 1757913916675388.