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Impact of Rhythmic Exercises on Physical and Anthropometric Parameters in Adolescentobese Boys

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Abstract

This research includes 45 obeseadolescent boys aged 13-19 years only. The author analyzed the impact of selected rhythmic exercise on physical and anthropometric variables are such as flexibility and body mass indexon adolescent obese boys were randomly selected from U.T. Jammu&Kashmir. They were assigned into three groups. each group consists of forty-five subjects. The three groups are namely Group I acted as Experimental Group (Rhythmic exercise) Group II acted as Experimental Group (Suryanamasker exercise) Group III control group without exercise. The duration of the exercise period was 12 weeks. This final test score is from the as post-test score of the subjects. To find out the significant differences between the groups, an analysis of covariance (ANCOVA) was applied. When the f-ratio of adjusted post-test mean was found to be significant, Scheffe's post hoc test was employed to find out paired mean differences. The level of confidence was fixed, at 0.05 level of significance.groups to study the significance of improvement in physical and physiological parameters as a result of the exercise in all cases 0.05 of significance was fixed to test the hypotheses. The result suggests that rhythmic exercise was more effective than Suryanamasker exercise in retaining rhythmic exercise participating and improving physical and anthropometric improvement in adolescent obese boys.

Keywords: *rhythmic exercise, Suryanamasker exercise, flexibility, body mass index.*

Introduction

Because of modern man's high level of automatization, he is experiencing a high level of inactivity, which is becoming an increasingly significant factor in the emergence of a wide range of illnesses. In today's world, where technological advancement has shifted man's activities from physical to intellectual labour, modern man is becoming increasingly susceptible to a sedentary lifestyle. This leads to a decrease in physical activity, which compromises the health and normal functioning of organs and organ systems.Sedentary people's health is put at risk due to a decrease in the functioning of the locomotor, cardiovascular, and respiratory systems, as well as other organs and organ systems. Physical inactivity and a sedentary lifestyle hurt almost all of the

human body's systems, particularly cardiovascular functions. The decline in the functional abilities of the human body in the modern world, as well as the development of hypertension and obesity, are just a few of the issues that can be solved through regular physical activity**(**Rana, M. S., & Sharma, R. (2008).Obesity is on the rise worldwide, and it has been identified as a critical public health issue. Obesity is related to physical and physiological factors in the same way. Obesity and overweight have an impact on joint wear and tear, exercise capacity, and the prevalence of chronic diseases such as cardiovascular disease, diabetes, and arthritis, resulting in physical disability.As a result, physical activity has a preventive value and is recommended as the first step in preventing osteoporosis, increasing muscle strength, and lowering the risk of falls and fractures. (Monleón, C., et al (2014).Medical experts are unanimous in their belief that exercise aids in the maintenance of good health, and that a person in good health is less prone to disease. Unfortunately, proper exercise is one of the most overlooked aspects of a healthy lifestyle, which is one of the main reasons why obesity is on the rise. The majority of people do not get enough exercise to balance their calories. They should be familiar with the fundamentals of good health exercise as well as how regular exercise can benefit the body. The greatness of a nation is heavily reliant on the overall fitness of every citizen. (Vairavasundaram,C., et al (2020).Higher levels of obesity in childhood and later adolescence increase the risk of being overweight in adulthood. (Guo ss, et al(2016).being excessively fat as a result, it has been identified as a significant risk factor for chronic diseases such as arteriosclerosis, ischemic heart disease, and diabetes, all of which are major causes of morbidity and mortality. (Abraham s.et al., 2016).Adolescent obesity has social, economic, and psychological consequences, including effects on academic performance and psychosocial functioning. (Nikki Mr et al.,2016).Rhythmic is the basics of music and dance all body movements to be rhythmic, throwing a ball, clapping jumping.Rhythmic is a combination of tones a form of expression and it is a compliment to any activity. Vinu, w (2018).Rhythmic exercise is a movement performed with light portable apparatus such as a towel, flags,dowels, balls, etc.The apparatus promotes unconscious movement of limbs through the range of motion performed to music.Besides encouraging the increased use of fingers, hands, arms, etc.The natural rhythmic flow of motion can develop good posture, strength,flexibility,balance, coordination,and can provide outlets for expression and socialization. Since the exercise promotes natural unconscious body movements. Those with varying degrees of ability can safely participate.(Larocque p., et al (1983).

Methods and Materials

The purpose of the study was to find out the impact of selected rhythmic exercise on physical andanthropometric changes in adolescent obese boys.Such as flexibility andBody mass index. School-going boys were selected randomlyfor forty45 obese from UT Jammu & Kashmir. The age of the subjects was between13 to 19 years only. They were assigned into threegroups. Each group consists of fifteen (15)subjects. The groups are namely Group I- acted as Experimental group (Rhythmic exercise),Group II-acted as Experimental group(Suryanamasker exercise). Group III-acted as a control group. The research design of the study was a random

group design. The duration of the experimental training period was 12 weeks. After the experimental treatment, all forty (45) subjects were administered on the selected physical and anthropometric variables. To find out the significant differences between the groups, Analysis of covariance (ANCOVA) was applied. When the f-ratio of adjusted post-test mean was found to be significant, Scheffe's post hoc test was employed to find out paired mean differences. The level of confidence was fixed, at 0.05 level of significance.

Variables selected &tools usedfor Physical &Anthropometric Parameters.

Physical variables:

F**lexibility:** Sit and reach was used to access the flexibility (measured in centimeters)

Anthropometric Variables:

Body Mass index: Stadiometer (BMI=Wg/Ht^2)

Rhythmic activity practices.

The selection of rhythmic exercise namely, aerobic exercise and was made based onexperts'advice. the aerobic exercise selected for the study were accepted as a rationale for the study, as per the available literature and expert guidance on the theory and practice of aerobic exercise. the aerobic exercise was scheduled for Group I. Group II can take Suryanamasker exercise. Group III- as control groupwithout exercise.The duration of aerobic exercise and Suryanamaskerexercise. 5minutes warm-up 45-minute exercise and 10 minutes body cool down.

Statistical Analysis:

To find out the significant differences between the groups, Analysis of covariance (ANCOVA) was applied. When the f-ratio of adjusted post-test mean was found to be significant, Scheffe's post hoc test was employed to find out paired mean differences. The level of confidence was fixed, at 0.05 level of significance.

Results:

Analysis of Flexibility.

The descriptive analysis shows mean, percentage of improvement, and 't' ratio of the collected data on flexibility among experimental and control groups are presented in the table-1.

Table-1

Analysis of Covariance on the flexibility of Experimental and Control Groups.

Test	Rhythmic exercise	Suryanamaskerexercise	CG	SOV	S O S	DF	MS	F-ratio

Pretest Mean	20.55	20.82	21.44	BG	6.13	2	3.06	0.77
SD (±)	1.73	2.41	1.73	WG	166.06	42	3.95	
Post-test Mean	24.60	22.84	21.64	BG	66.65	2	33.32	9.04*
SD (±)	1.62	2.21	1.74	WG	148.78	42	3.54	
Adjusted Post-test Mean	24.81	22.90	21.37	BG	86.18	2	43.09	17.59*
				WG	100.40	41	2.44	

**Significant, Table value, 2 to 42 & 2 to 41 is 3.22 &3.23*

Table-1 shows that the pre-test means values of the flexibility of the rhythmic exercise group, Suryanamasker exercise group, and control group are 20.55, 20.82, and 21.44 respectively. The obtained 'F' ratio of 0.77pre-test score was lesser than the required table value of 2.14 for df 2 and 42 for significance at 0.05 level of confidence on flexibility. The post-test means values on the flexibility ofthe rhythmic exercise group, Suryanamasker exercise group, and control group are 24.60, 22.84, and 21.64 respectively. The obtained 'F' ratio value of 9.04 for the post-test score was greater than the required table value of 3.22 for the df of 2 and 42 for significance at 0.05 level of confidence on flexibility.

The adjusted post-test means of rhythmic exercisegroup, Suryanamasker exercise group, and control group are 24.81, 22.90, and 21.37 respectively. The obtained 'F' ratio value of 17.59 for the adjusted post-test score was greater than the required table value of 3.22 for df 2 and 41 for the significance at 0.05 level of confidence on flexibility. It was concluded that differences subsist among the adjusted post-test means of rhythmic exercise group, Suryanamasker exercise group, and control group on flexibility. The 'F' value in the adjusted post-test means was found significant, hence Scheffe's test was applied to assess the paired mean difference and the results are presented in table -2.

Table -2

Scheffe's test for the Differences between Paired Means on

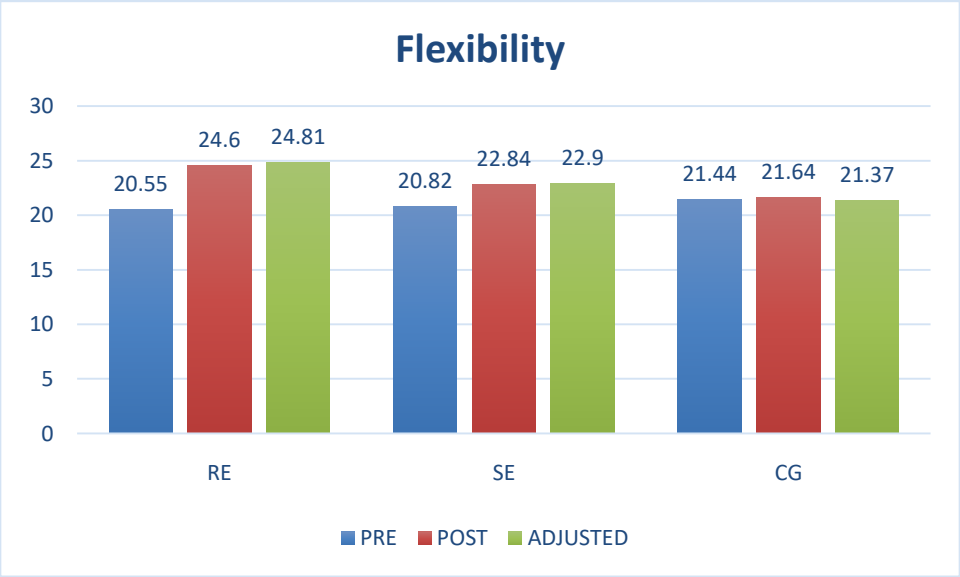
Rhythmic exercise	Suryanamasker exercise	CG	M.D	CI
24.81	22.90		1.91	0.82
24.81		21.37	3.44	

-	22.90	21.37	1.53	

From table-2, it was imperative that both the experimental groups differed significantly from the control group on speed. Significant differences were found between the rhythmic exercise group and the Suryanamasker group in improving flexibility. Therefore, twelve weeks of rhythmic exercise showed greater improvement than Suryanamasker on adolescent obese boys. The findings of the study imply that both the groups improved but rhythmic exercise was significantly better in improving flexibility than other groups confined to this study. The changes in flexibility are presented in figure-1.

Figure-1

The Pre, Post and Adjusted Post Test Means of Experimental and Control Groups on flexibility



Analysis of Body Mass Index

Analysis of Covariance on the Body Mass index of Experimental and Control Groups

Table-3

Test	Rhythmic exercise	Suryanamasker exercise	C G	Sov	SOS	DF	MS	F-ratio
Pre-test	27.47	27.52	27.51	BG	0.21	2	0.01	
Mean	1.49	1.43	1.43	WG	90.95	42	2.16	0.005

Post-test Mean	25.61 1.55	26.46 1.12	27.38 1.68	BG	23.38	2	11.69	5.39
				WG	90.95	42	2.16	
AdjustedPost-testMean	25.63	26.45	27.38	BG	22.96	2	11.48	6.70
				WG	70.23	41	1.71	

**Significant, Table value, 2 to 42 & 2 to 41 is 3.22 &3.23*

Table-3. shows that pre-test mean values on body mass index of rhythmic exercise group, Suryanamasker group, and control group is 27.47, 27.52, and 27.51 respectively. The obtained 'F' ratio of 0.005 pre-test score was lesser than the required table value of 3.22 for df 2 and 42 for significance at 0.05 level of confidence on body mass index. The post-test means values on body mass index of rhythmic exercise group, Suryanamasker exercise group, and control group are 25.61, 26.46, and 27.38respectively. The obtained 'F' ratio value of 5.39, for a post-test score, was greater than the required table value of 3.22 for the df of 2 and 42 for significance at 0.05 level of confidence on body mass index.

The adjusted post-test means of rhythmic exercise group, Suryanamasker exercise group, and control group are 25.63, 26.45and 27.38 respectively. The obtained 'F' ratio value of 6.70 for the adjusted post-test score was greater than the required table value of 3. 22 for df 2 and 41 for the significance at 0.05 level of confidence on body mass index. It was concluded that differences subsist among the adjusted post-test means of rhythmic exercise group, Suryanamasker exercise group, and control group on body mass index. The 'F' value in the adjusted post-test means was found significant, hence Scheffe's test was applied to assess the paired mean difference and the results are presented in Table – 4.

Table-4.

Scheffe's test for the Differences between Paired Means on body mass index

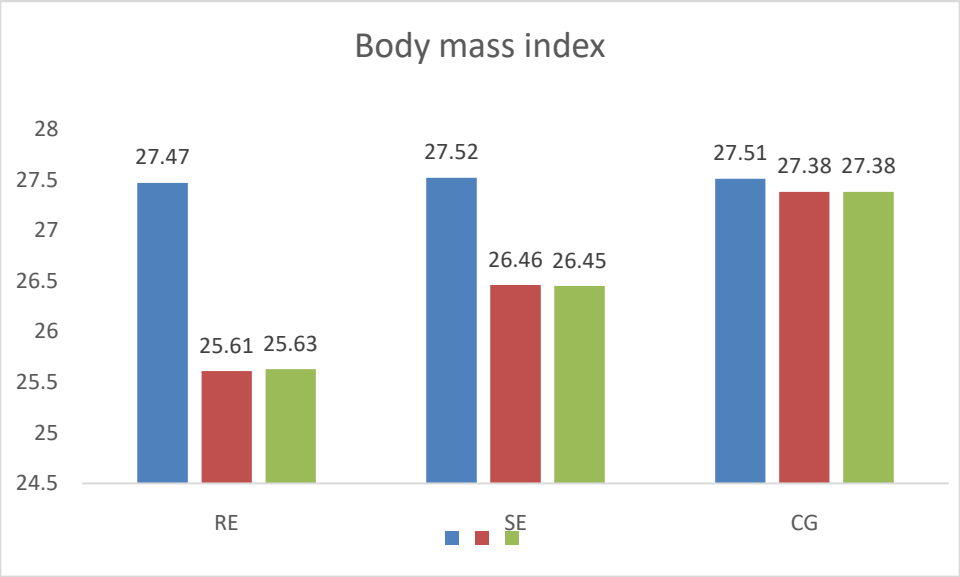
Rhythmic exercise	**Suryanamasker exercise**	**CG**	**M. D**	**C I**
25.63	26.45	_	0.82	0.57
25.63	_	27.38	1.75	
_	26.45	27.38	0.93	

From the table-4. it was imperative that both the experimental groups differed significantly from the control group on body mass index. Significant differences were found between the rhythmic exercise group and the Suryanamasker exercise group decreased body mass index of adolescent

obese boys. Therefore, twelve weeks of rhythmic exercise showed greater improvement than Suryanamasker exercise. The findings of the study imply that both the groups improved but the rhythmic exercise was significantly better in decreasing body mass index than other groups confined to this study. The changes in body mass index are presented in figure-2.

Figure-2

The Pre, Post and Adjusted Post Test Means of Experimental and Control Groups on body mass index



Discussion and Findings:

The findings of this study showed 12-weeks of rhythmic exercise caused an increase in flexibility and decrease body mass index.Suryanamasker the nature and type of rhythmic exercise can increase stretching mobility abilities in joints and develop a range of joint muscle. Rhythmic exercise can decrease body fat in the body. Rhythmic exercise and Suryanamasker exercise will be a significant increase in flexibility and decrease body weight when performing aerobic exercise, marching. Jumping. jogging, walking in Suryanamasker exercise is pranayama, Hasstautthanasan, Anjaneya San, the sufficient exercise for joint muscle and bodyweight to sufficient variety of exercise These findings are similar to (Patel., 2004). Pattabhi&Sri,2005). Garcia, et., al (2021) Monleón, c., t al (2014) Faramarzi, et al (2012) Depspine.et al (2014) Nautiyal. R., et al (2016) Regmi, a, et al.,alsofind changes.

Conclusion: The purpose of this study was to demonstratethe rhythmic exercise and Suryanamasker exercise program on obese adolescent boys. There was a significant effect on rhythmic exercise than Suryanamasker exercise on flexibility and body mass index.Therefore, physical fitness can be achieved with a training program implemented at a school level.So,

twelve-weeks training program was given to increase flexibility and decrease the body mass index among obese adolescent boys.

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