

Original Article

Effects of 12-Week Morning Exercises on Anthropometry of School Boys

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Abstract

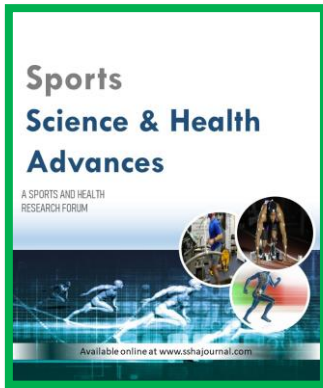
Background of the study: Adults who exercise regularly are more likely to maintain constant fat and avoid fat gain. The study's objective was to assess how morning exercise affected the obesity of high school boys with the orientation of four sites of anthropometric components.

Methodology: Subjects were 20 selected from 4 different high schools under the area of 5km of the district Kulgam and Shopian south Kashmir India. A specific design of the training program was given in 3 months regularly except on Sunday (Holiday) including 10 minutes of walking before the binging of 40 minutes all exercises class.

Results: The Triceps, Biceps, Subscapular and Suprailia of school-going male students were pre-data 6.55, 7.05, 3.40 and 6.15 whereas posttest 5.00, 5.55, 3.40 and 5.05 respectively. There is significant difference which shows that the lipid or fat concentration of the body is decreased.

Conclusion: There is an extremely significance difference with a significant level of 0.05 which shows that the morning activity program is beneficial to decreased lipids storage of the body.

Keywords: Exercise, obesity, high school, triceps skinfold thickness, Kashmir



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Introduction

Obesity is an increasingly prevalent health burden upon modern society. The mechanism through which its effect is exerted is more controversial. Obesity is characterized by excess lipid storage. Definitions of obesity can vary, but the most widely accepted definition adheres to the WHO BMI (kg/m²) criteria. (Balen, 2010) Obesity has been creeping into the lives of Americans, regardless of age, gender, socioeconomic status, and ethnicity in recent years. According to a survey led by the Department of Health and Human Services' Centers for Disease Control and Prevention (CDC, 2007). One health problem that children face today is being overweight or obese. According to the Department of Health and Human Services' Centers for Disease Control and Prevention or CDC (2007), the quantity of overweight and obese children is increasing. Through data collection, the CDC recorded the occurrence of overweight children age six to 11 to total almost 9 million – an increase from 6.5% in the 1980s to 18.8% in 2004 (CDC, 2007). By teaching the 3 exercises that can be done at home and nutritional decisions that they have control over, the nurse hoped to decrease the students' BMI and increase their general health. The nurse

was the only regular leader at the morning exercise program. The principal, vice principal, and researcher also helped when available. During the research period, the program did not receive any funds; however, the nurse sought support from community groups that may provide funding for the morning exercise program students and their parents. If funding is found it could help provide additional equipment for the program, information presentations and material for the parents, and other such resources (Beyerlein, 2008).

BMI was used to categorize students as “unhealthy” for the programme; for the remaining research, health refers to the students’ overall physical wellness, which includes their involvement in an exercise programme, their eating habits, and their overall appearance. A person’s weight status is determined by their body mass index (BMI), which is a measurement of their weight about their height. Body fatness and BMI measures have a strong correlation. Children’s expected BMI measurements are categorized according to their age and gender. (CDC, 2007). Obese and Overweight: Children who are at risk for obesity have a BMI that falls between the 85th and lower 95th percentiles for their age and gender. Children who are overweight have a BMI of six, which is equivalent to or higher than the ninth percentile for their age and gender (CDC, 2007). Children classed as obese for this research have a BMI of 28 or higher (as evaluated by the nurse).

The researcher was going through some recent findings about the epidemiology of obesity, the negative health effects of being overweight, discoveries about the causes of obesity, and novel approaches to treating the condition, such as diet, exercise, medication, and surgery (Bessesen, 2008). Given the link between obesity, ill health, and high medical costs, effective cost-containment measures will require addressing obesity (Finkelstein, 2012).

The stigma around obesity frequently stems from the misconception that poor eating habits and inactivity are the primary causes of the condition. Nonetheless, a wealth of research-based literature characterizes obesity as a complex, long-term medical disorder brought on by the interaction of several genetic, environmental, metabolic, and behavioral variables. “Obesity is a complex condition with many causal contributors, including many factors that are largely beyond individuals’ control; that obesity causes much suffering; that obesity causally contributes to ill health, functional impairment, reduced quality of life, serious disease, and greater mortality; that successful treatment, although difficult to achieve, produces many benefits,” was the conclusion reached in 2008 by an expert panel from the Obesity Society. Thus, obesity was acknowledged as a medical condition. The American Medical Association likewise approved the classification of obesity as a disease in June 2013, recognizing it as a severe danger to public health. Nowadays, several other societies have acknowledged obesity as an illness (Hedley, 1999-2002).

Exercise has a crucial role in weight control and large quantities of exercise (> 250 minwk⁻¹) are recommended for persons to elicit clinically meaningful weight reduction (> 5%), even though diet is the most effective lifestyle intervention for weight loss (Donnelly, 2009). There hasn’t been much research done on how exercise timing affects weight loss. Research publications on studies examining exercise and weight loss frequently contain insufficient details, which makes it difficult to evaluate the findings, replicate the findings, and put the findings into practice (Slade, 2016).

Anthropometry: By measuring the length, width, and circumference of the body, anthropometry is an easy and trustworthy way to calculate body size and proportions (Wang, 2000). Every person on the planet is a member of the same species, *Homo sapiens*. No two people are completely comparable in every quantifiable way; even monozygotic twins, who have the same DNA, have differences in certain areas. Since skeletal development is influenced by a variety of factors producing differences in skeletal proportions between different geographical areas, these traits tend to change in varying degrees from birth to death, in health and disease. Therefore, it is desirable to have some way of quantitatively expressing the variations that these traits exhibit (Krishan, 2007).

Anthropometric measures are crucial for assessing growth and development, figuring out how much lean (muscle) and fatty tissue there is in the body, and determining how the body’s fat is distributed. Commonly utilized anthropometric measures include measuring body weight, height, head circumference (HC), waist circumference, hip

circumference, and mid-upper arm circumference (MUAC). Adult anthropometric data is a useful tool for assessing and identifying dietary habits and health conditions, assessing the risk of disease, and comparing body types by comparing measures from different body parts (6, 10). Our study aimed to determine reference values for people who are mildly overweight, overweight, skinny, or underweight by comparing the body composition and anthropometric measurements to the reference values based on the participants' status of regular exercise. We also wanted to find out if there was a tendency towards obesity and how well-being was among males aged 18 to 25 (Aksoy, 2018).

Subjects and Methods

Four schools were chosen from two districts in the southern part of Jammu & Kashmir. Every school is affiliated with the Jammu and Kashmir Board of School Education (JKBOSE), sharing the same curriculum and student demographics. I have the approval of the principal and the physical education teachers, who include the training programme in their daily morning routines. We decided to study in the eleventh and twelfth grades based on their advice, and they would work with me without the physical teacher's assistance, which makes it challenging for me to manage the pupils during exercises.

Intervention

The current guidelines for exercise focus on improving physical fitness and reducing body fat. The exercises in the plan, which are broken down into three sections—warm-up, major part, and collapsing phase—take forty minutes in total. Every training session included a minimum of five distinct exercises. The intervention will run for a total of 12 weeks, starting in April 2022 and ending in July 2022 for each school. We didn't obstruct the regular school operations. Every school offered a morning physical education programme for one hour. Additionally, one school (school 1) offered a 40-minute class each week that included an additional lecture and some physical activity for all pupils. The Nutrition was not regulated in this study.

Data collection

Both before and after the training plan was delivered, the data were gathered. After two and a half months, 27 subjects took part in the training; however, 7 subjects left because 3 of them were ill and 4 subjects left the school. Merely 20 participants completed the entire training programme.

Assessment of Anthropometric

Subject anthropometric data from both local schools was gathered. Four skinfold thickness measurements, including the suprailia, biceps, subscapular, and triceps, were taken both before and after the workout regimen. The Training programme was an independent variable and a dependent one.

Table1 Training plan

Warm-up	Demonstration	Interval between exercises	Exercises time	Colling down	Total time
5	5	5	20	5	40 minutes

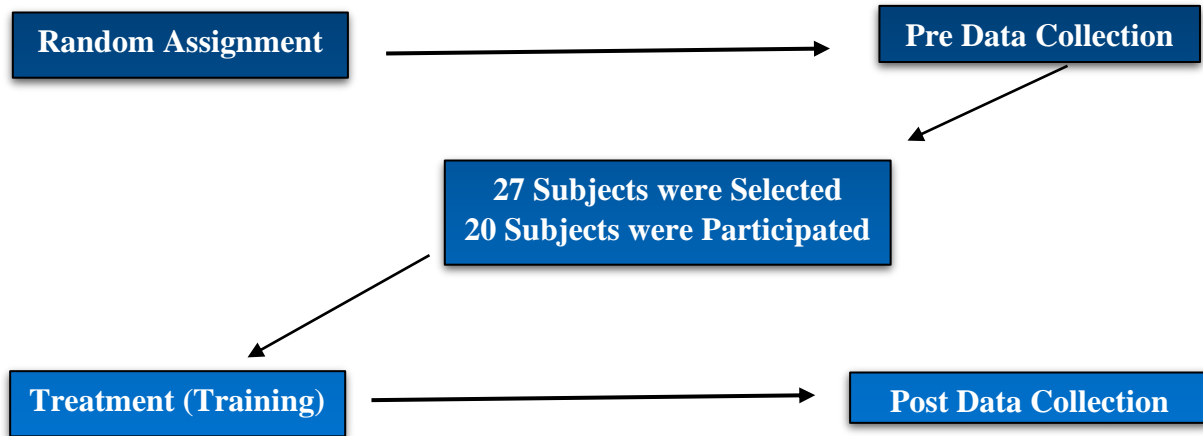


Figure 1 Research Design

Table 2 Comparison between pre and post Anthropometric Variables among High school Children’s

Variables	Test	N	Mean	SD	SDE	df	‘t’ score	p. value
Triceps	Pre	20	6.55	1.50	0.26	19	5.82	.000***
	Post		5.00	1.02				
Biceps	Pre	20	7.05	1.60	0.11	19	4.81	.000***
	Post		5.55	1.31				
Subscapular	Pre	20	3.40	0.88	0.17	19	6.24	.000***
	Post		3.40	0.59				
Suprailia	Pre	20	6.15	0.74	0.17	19	8.11	.000***
	Post		5.05	0.75				

Primary data significance level 0.05

Table. 2 revealed the Triceps, Biceps, Subscapular and Suprailia of school going male students were pre data is 6.55, 7.05, 3.40 and 6.15 whereas posttest 5.00, 5.55, 3.40 and 5.05 respectively. There is no significant difference which shows that the lipid or lean body mass of the body is decreased.

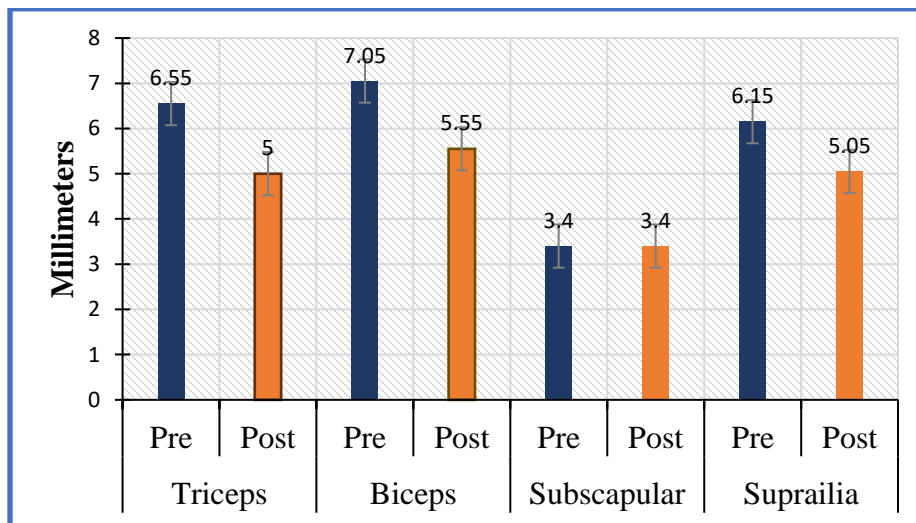


Figure 2 Graphical Representation of Table

Results

The Triceps, Biceps, Subscapular and Suprailia of school-going male students were pre-data 6.55, 7.05, 3.40 and 6.15 whereas posttest 5.00, 5.55, 3.40 and 5.05 respectively. There is no significant difference with 0.05 level of significance which shows that the lipid or fat concentration of the body is decreased. The food, environmental and Socioeconomic background was not in the control of the researcher. It is concluded that the exercises had some possible impacts on body fat.

Discussion

When primary school children engage in regular physical activity together with a nutritious diet, their body weight decreases and their muscle and bone mass grow (jarnig, 2023). Collaboration between the family, the school, and society is always important in order to increase knowledge and abilities in identifying the biological, psychological, and social issues that children may encounter throughout this time. Adolescents who have poor diets, malnutrition's, and little physical exercise may suffer long-term consequences that negatively impact their health and quality of life. A lack of proper physical and mental development results from such impacts. Dietetics that are both effective and ongoing should be used to continuously enhance nutrition knowledge and practices. It may be concluded that children aged 10 to 12 benefits from systematic physical education in terms of their anthropometric measurements and degree of physical fitness (karacabey, 2014). It is possible to implement a 12-week lifestyle intervention in a school context and help kids change their health-related behavior's. Changes in anthropometry and metabolic profile might need a longer intervention period (prabhushankar, 2015). The above discussion is the impact of training on person fat percentage.

Conclusion

There is significant difference with a significant level of 0.05 which shows that the morning activity program is beneficial to decreased lipids storage of the body.

Conflict of Interest: No conflict of interest stated by authors.

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