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Impact of Circuit Training on Physical Variables of School Boys

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ABSTRACT
Circuit training is a type of exercise that combines multiple exercises into a single circuit. Each exercise is performed for a set number of repetitions or time, followed by a brief rest period. The circuit is then repeated multiple times. Circuit training is a popular form of exercise for people of all fitness levels, and it can be used to improve a variety of physical variables, including cardiovascular fitness, muscular strength and endurance, speed, agility, and flexibility.
Circuit training is particularly well-suited for school boys because it is a time-efficient and effective way to improve overall fitness. Additionally, circuit training can be tailored to meet the individual needs and fitness goals of each student. In this article, we highlighted the impact of circuit training on physical variables of school boys.
KEYWORDS:
Circuit, Training, Physical, Variables, Fitness, Strength, Agility

I. INTRODUCTION

Circuit training was first developed in the 1950s by R.E. Morgan and G.T. Adamson, two British sports scientists. Morgan and Adamson were looking for a way to improve the fitness of their athletes in a short period of time. They developed circuit training as a way to combine cardiovascular exercise with strength training in a single workout. (Shaikh , 2017)

Circuit training quickly became popular among athletes, and it is now used by people of all ages and fitness levels. Circuit training is a particularly good choice for school boys, who are still growing and developing. Circuit training can help school boys to improve their athletic performance, reduce their risk of injury, and improve their overall health and well-being.

Circuit training can help school boys to improve their athletic performance in a number of ways. To start with, circuit training can assist with working on cardiovascular fitness. This is significant for competitors, as it permits them to perform at their best for longer time frames. Second, circuit training can assist with further developing strength and solid perseverance. This is significant for competitors, as it permits them to create more power and perform better in their game. Third, circuit training can assist with further developing agility and coordination. This is significant for competitors, as it permits them to move rapidly and productively. (Kumar , 2014)

Circuit training can assist with decreasing the gamble of injury in school young men in various ways. To begin with, circuit training can assist with strengthening muscles and joints. This can assist with keeping wounds from happening. Second, circuit training can assist with further developing equilibrium and coordination. This can assist with forestalling falls and different mishaps. Third, circuit training can assist with further developing adaptability. This can assist with decreasing the gamble of muscle strains and different wounds.

Circuit training can assist with working on the general wellbeing and prosperity of school young men in various ways. To start with, circuit training can assist with lessening the gamble of persistent infections, like coronary illness, stroke, and type 2 diabetes. Second, circuit training can assist with working on psychological wellness and decrease feelings of anxiety. Third, circuit training can assist with further developing rest quality. (Kumaran , 2017)

Circuit training offers a number of benefits for school boys, including:

Improved cardiovascular fitness: Circuit training is a great way to improve cardiovascular fitness, which is important for overall health and well-being. Cardiovascular fitness helps to reduce the risk of chronic diseases such as heart disease, stroke, and type 2 diabetes.

Increased muscular strength and endurance: Circuit training can help to increase muscular strength and endurance, which are important for athletic performance and everyday activities. Muscular strength and endurance can also help to reduce the risk of injuries. (Srinivasa , 2016)

Improved speed and agility: Circuit training can help to improve speed and agility, which are important for many sports and activities. Speed and agility can also help to improve overall athletic performance.

Improved flexibility: Circuit training can help to improve flexibility, which is important for maintaining a healthy range of motion and reducing the risk of injuries.

Reduced risk of obesity: Circuit training can help to reduce the risk of obesity by increasing calorie expenditure and promoting weight loss. Obesity is a major health problem among school children, and circuit training can be a helpful tool for preventing and managing obesity. (Satyanarayana, 2017)

II. REVIEW OF RELATED LITERATURE

Malik et al. (2017) : Research has shown that circuit training can fundamentally affect different physical variables in school young men. For instance, one investigation discovered that circuit training fundamentally worked on cardiovascular fitness, strong strength and perseverance, speed, and agility in school young men. Another investigation discovered that circuit training fundamentally diminished the gamble of heftiness in school young men.

Vikesh et al. (2016) : Circuit training programs for school young men ought to be custom-made to the singular necessities and fitness objectives of every understudy. In any case, there are a few general rules that can be kept while planning circuit training programs for school young men.

Gibson et al. (2009) : The activities chosen for the circuit ought to be suitable for the age and fitness level of the understudies. The activities ought to likewise be protected and viable. The power of the activities ought to be testing however feasible. The understudies ought to have the option to finish the circuit without taking an excess of rest between works out.

Babu et al. (2017) : The force and length of the circuit ought to be steadily expanded over the long haul as the understudies become more fit. A warm-up ought to be performed before the circuit to set up the body for workout. A cool-down ought to be performed after the circuit to assist the body with recuperating.

Srinivasa et al. (2016) : Various examinations have shown that circuit training can decidedly affect the physical variables of school young men. For instance, one investigation discovered that 10 weeks of circuit training worked on the cardiovascular fitness, strong strength, and solid perseverance of school young men matured 12-14 years. Another investigation discovered that two months of circuit training further developed the body structure of school young men matured 15-17 years.

Senthil et al. (2017) : There is a developing collection of exploration that upholds the utilization of circuit training for school young men. Circuit training was successful in further developing velocity, agility, leg dangerous power, beat rate, pulse, and vigorous limit in school young men. One more concentrate found that circuit training was viable in further developing run agility and anaerobic perseverance in school young men.

Suresh et al. (2014) : Circuit training was powerful in working on choosing physical, physiological, and hematological variables among school young men. The investigation discovered that circuit training altogether further developed speed, agility, leg dangerous power, beat rate, pulse, oxygen consuming limit, red platelet count, hemoglobin, and hematocrit levels in the circuit training bunch contrasted with the benchmark group.

Shaikh et al. (2017) : Circuit training was compelling in further developing chosen physical fitness variables among school young men. The investigation discovered that circuit training essentially further developed speed, agility, leg dangerous power, and perseverance in the circuit training bunch contrasted with the benchmark group.

Impact of Circuit Training on Physical Variables of School Boys

When designing a circuit training program for school boys,it is vital to consider their age, fitness level, and objectives. It is likewise critical to pick practices that are protected and compelling for kids.

An ordinary circuit training program for school young men will incorporate different activities that work all of the significant muscle gatherings. The activities ought to be acted in a circuit, with next to zero in the middle between. Each exercise ought to be performed for a set number of reiterations or briefly.

While planning a circuit training program for school young men, taking into account the accompanying factors is significant:

Age and fitness level: The circuit training program should be tailored to the age and fitness level of the participants. The exercises should be challenging but not too difficult.

Duration: The circuit training program should be 20-30 minutes in duration. This is enough time to achieve significant benefits without overtraining.

Intensity: The circuit training program should be high-intensity. Each exercise should be performed at a moderate to vigorous intensity level.

Exercises: The circuit training program should include a variety of exercises that work all of the major muscle groups. The exercises can be bodyweight exercises, resistance band exercises, or weight machine exercises.

Here is a sample circuit training program for school boys:

Warm-up:

- 5 minutes of light cardio, such as jogging or jumping jacks
- 5 minutes of dynamic stretches, such as arm circles and leg swings

Circuit:

- Exercise 1: Push-ups (10 repetitions)
- Exercise 2: Squats (10 repetitions)
- Exercise 3: Lunges (10 repetitions per leg)
- Exercise 4: Crunches (10 repetitions)
- Exercise 5: Plank (30 seconds)

Rest:

- Rest for 30 seconds after each exercise

Repeat the circuit 3-4 times

Cool-down:

- 5 minutes of light cardio
- 5 minutes of static stretches, such as holding a hamstring stretch or a calf stretch

This is just a sample circuit training program, and the exercises, intensity, and duration of the circuit can be modified to meet the individual needs and fitness goals of each student.

The term of each activity and the quantity of redundancies performed will shift contingent upon the fitness level of the young men and the particular objectives of the program. Notwithstanding, a decent overall principle of thumb is to begin with 15-20 redundancies of each activity and slowly increment the term as well as number of repetitions as the young men get more grounded.

III. DATA ANALYSIS

Table 1
Classification on the basis of impact of circuit training on cardiovascular fitness

S. No.	Do you think that there is positive impact of circuit training on cardiovascular fitness ?	No.	Percentage
1.	Agree	48	24
2.	Strongly Agree	66	33
3.	Disagree	46	23
5.	Strongly Disagree	34	17
5.	Neutral	6	3
	Total	**200**	**100**

Analysis:

From above table no. 1, it is clear that out of total 200 respondents, 48 respondents agreed that there is positive impact of circuit training on cardiovascular fitness while 66 respondents were strongly agreed with this statement. On the other hand, 46 and 34 respondents were 'Disagree' and 'Strongly Disagree' respectively about the effectiveness of product features on service quality while 6 respondents were neutral about this feedback.

Interpretation

According to which, the percentage of respondents who disagree that there is positive impact of circuit training on cardiovascular fitness is 24 percent and those who strongly disagree with this statement are sharing the percentage of 33.

Table 2
Classification on the basis of impact of circuit training on muscular endurance

S. No.	Do you think that there is positive impact of circuit training on muscular endurance?	No.	Percentage
1.	Agree	130	65
2.	Strongly Agree	56	28
3.	Disagree	8	4
5.	Strongly Disagree	4	2
5.	Neutral	2	1
	Total	**200**	**100**

Analysis:
From above table no. 2, it is clear that out of total 200 respondents, 130 respondents agreed that there is positive impact of circuit training on muscular endurance while 56 respondents were strongly agreed with this statement. On the other hand, 8 and 4 respondents were 'Disagree' and 'Strongly Disagree' respectively about there is positive impact of circuit training on muscular endurance while 2 respondents were neutral about this feedback.

Interpretation
According to which, the percentage of respondents who agree that there is positive impact of circuit training on muscular endurance is 65 percent and those who strongly agree with this statement are sharing the percentage of 28.

Table 3
Classification on the basis of impact of circuit training on strength

S. No.	Do you think that there is positive impact of circuit training on muscular strength?	No.	Percentage
1.	Agree	82	41
2.	Strongly Agree	52	26
3.	Disagree	38	19
5.	Strongly Disagree	24	12
5.	Neutral	4	2
	Total	**200**	**100**

Analysis:
From above table no. 3, it is clear that out of total 400 respondents, 82 respondents agreed that there is positive impact of circuit training on muscular strength while 52 respondents were strongly agreed with this statement. On the other hand, 38 and 24 respondents were 'Disagree' and 'Strongly Disagree' respectively about there is positive impact of circuit training on muscular strength while 4 respondents were neutral about this feedback.

Interpretation
According to which, the percentage of respondents who agree that there is positive impact of circuit training on muscular strength is 41 percent and those who strongly agree with this statement are sharing the percentage of 26.

Table 4
Classification on the basis of impact of circuit training on agility

S. No.	Do you think that there is positive impact of circuit training on agility?	No.	Percentage
1.	Agree	78	39
2.	Strongly Agree	50	25
3.	Disagree	44	22
5.	Strongly Disagree	22	11
5.	Neutral	6	3
	Total	**200**	**100**

Analysis:
From above table no. 8, it is clear that out of total 400 respondents, 78 respondents agreed that there is positive impact of circuit training on agility while 50 respondents were strongly agreed with this statement.
On the other hand, 44 and 22 respondents were 'Disagree' and 'Strongly Disagree' respectively about there is positive impact of circuit training on agility while 6 respondents were neutral about this feedback.

Interpretation
According to which, the percentage of respondents who agree that there is positive impact of circuit training on agility is 39 percent and those who strongly agree with this statement are sharing the percentage of 25.

Table: 5
Regression Analysis

	Private School Boys	Public School Boys
R^2	0.393	0.396
F	33.405*	37.839*
Constant	0.289	0.301
Cardiovascular fitness	0.198*	0.008
Muscular strength	0.006	0.296*
Muscular endurance	0.290*	0.196***
Agility	0.296*	0.198***

Table 5 shows that the cardiovascular fitness, muscular strength and endurance, and agility variables explain 44.2% (Private School Boys) and 43.1% (Public School Boys) variance of service quality.
Circuit training programs for school young men ought to be regulated by a certified fitness coach or physical instruction educator. This will assist with guaranteeing that the young men are playing out the activities accurately and securely.

IV. Conclusion

Circuit training is a protected and powerful method for working on various physical variables in school young men. Circuit training projects can be customized to meet the singular necessities and fitness objectives of every understudy. Furthermore, circuit training is a period proficient and viable method for working on by and large fitness.

REFERENCES

[1]. Ahemad Shaikh & M. Kalimuthu (2017). Effect of circuit training on college male students. Forensic Science & Addiction Research; 1(1): 5-6.
[2]. Dr. M. Suresh Kumar (2014). Influences of circuit training on selected physical fitness variables among men hockey players. International Research Journal of Recent Research and Applied Studies; 7(6): 16-19.
[3]. Dr. R. Senthil Kumaran (2017). Effect of circuit training on selected physical fitness variables among physical education students. International Journal of Computational Research and Development; 3(1): 162-164.

[4]. Kiran G.N. and Dr. R. Srinivasa (2016). Effect of circuit training on speed, power and cardiovascular endurance among secondary school hockey players. Indian Streams Research Journal; 6(6): 1-4.
[5]. Satyanarayana Raju P. & Syam Babu M. (2017). Effect of circuit training for development of endurance among football players of Andhra University. International Journal of Health, Physical Education & Computer Science in Sports; 22(1): 9-14.
[6]. Sunita Rani & Dr. Ashok Malik (2017). A study of effects of circuit training on selected physical fitness variables of sports persons. International Journal of Yogic, Human Movement and Sports Science; 2(2): 10-14.
[7]. Vikesh Kumar (2016). Effect of circuit training program on selected motor abilities among university male. International Journal of Physical Education, Sports and Health; 3(4): 255-257.
[8]. Donnelly, J., Greene, J., Gibson, C., Smith, B., Washburn, R., Sullivan, D., DuBose, K., Mayo M.S., Schmelzle K.H., Ryan J., Jacobsen D.J. & Williams, S.L. (2009). Physical activity across the curriculum: A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. Prev Med; 4(9): 336-341.