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Sathi Pal
PhD. Scholar, Department of Health Sciences L.N.I.P.E, Gwalior, Madhya Pradesh, India

LN Sarkar
HOD of Department of Health Sciences, L.N.I.P.E, Gwalior, Madhya Pradesh, India

Corresponding Author:
LN Sarkar
HOD of Department of Health Sciences, L.N.I.P.E, Gwalior, Madhya Pradesh, India

Analyze the effect of six week water exercise programme on selected health related fitness component on obese children

Sathi Pal and LN Sarkar

Abstract
Objective: To examine the effect of six week water exercise on fat percentage and cardiovascular endurance among 20 obese boys aged 8-14y from Greater Gwalior, Madhya Pradesh.
Methods: The subjects were selected using random sampling method. The bicep, triceps, suprailiac and sub- scapular skin fold were recorded for the fat percentage. The cardiovascular endurance was measured on total distance covered in six minutes run and walk in water. The data obtained was analyzed using paired't' test.
Results: There was a significant improvement in the Cardio vascular endurance (p=0.00), and significant depletion in fat percentage (p=0.00) was found after undergoing six weeks of water exercise programme.
Conclusions: This study suggested a clear evidence of change in the body fat percentage and in the cardiovascular ability of obese boys after the completion of six week water exercise programme.
These results are important for future investigations in clinical studies to identify better ways for improving health condition of obese children.

Keywords: Cardiovascular endurance, percent of body fat, obese boys

1. Introduction
A low degree of bodily health and lifestyle-associated diseases in childhood are associated with an accelerated chance of cardiovascular disfunctioning in adulthood. Recent estimates propose that many kids do no longer gain the endorsed stage of bodily activity that is required to discount the chance of cardiovascular disease and physiological disorders in childhood.
Studies investigating the health-related physical fitness benefits of normal physical participation have focused in most cases on an aerobic workout, together with a treadmill or outdoor running and cycling. However, adherence to these modes of physical interest (e.g., non-stop walking) in the well-known populace, and specifically in kids, is quite low, perhaps because such sports are perceived as isolating and dull. There is, therefore, a need to locate greater fun modes of physical activity that elicit superb adherence through optimizing intrinsic motivation while supplying health advantages that in shape the ones finished by means of treadmill and cycling programs. In this context, recreational swimming may be a popular alternative for those in search of to enhance their cardiovascular, metabolic, and musculoskeletal health.
It should be noted here that advanced research on exercise types related with obesity widely recommends aerobic exercise. However, this type of exercise is difficult for an obese person to participate in because excessive weight-bearing causes the joints to press together and thus aggravates pain.
Aquatic exercises, which use the water's buoyancy, can help decrease body fat while maintaining superior stability compared with ground exercises Aquatic exercise is thus highly recommended for patients suffering from obesity.
Other than general endurance, one should not expect great improvement in physical strength factors with long-term aerobic exercises, for the latter has certain insufficient aspects. In contrast, aquatic exercises with resistance, such as swimming, can partly improve physical strength factors, along with endurance. These exercises do not only improve the functions of the respiratory system and the circulatory system, they also help develop muscular strength,

endurance, and flexibility, effectively affecting changes in one's body composition. Advanced research concerning other variables related with obesity also shows that the vascular compliance of obese children, in particular, is related with increased blood pressure and circulatory disorders.

The aims of the existing observation had been therefore to (1) look into the results on fitness-related fitness measures of a short-term (six weeks) recreational swimming intervention finished with untrained obese boys.

2. Methods and Materials

2.1 Participants

Total number of 20 obese boys were randomly selected from the aged ranged from 8-14y from Greater Gwalior, Madhya Pradesh. To be included, participants were healthy, not suffering from any acute or chronic disease, and were not receiving any kind of medical treatment. All the participants were fully informed of the risks and discomforts associated with the experimental procedures, and the children and their parents had signed an informed consent form for their boys to participate in the study. Baseline testing was done by using BMI Index

2.2. Procedures

2.2.1 Training intervention

The boys participated in 5 sessions of regular swimming classes per week over 6 weeks. Training usually took place from Monday to Friday. Each session was comprised of a short dynamic warm-up followed by 30–45 min of water exercise and swimming drills. The small-sided games were also included on alternate days with varying rules.

2.2.2 Measurements and testing

The pre test was taken before the intervention and post data was collected after six weeks

2.2.3 Aerobic fitness

Aerobic fitness was evaluated using 6min run and walk test inside the water at the shallow end where the water level was up to the chest level. The total distance was covered in six minutes was calculated as the measure of aerobic fitness.

2.2.4 Body composition

The 4 skinfolds (biceps, triceps, suprailiac, and subscapular) were obtained by the same investigator using a Harpenden skinfold caliper (Lange, Cambridge, MA, USA). Skinfold thickness was then used to calculate body fat percentage.

3. Results

Table 1: Paired Samples Statistics

		Mean	N	Std. Deviation
Pair 1	6min distance	3.0550E2	20	31.49352
	postdisyance	3.7725E2	20	29.40081

Table 1: The values of the mean, standard deviation, and standard error of the mean for the data on aerobic fitness components on before and after the water exercise programme are shown in the table 1. These values can be used to draw the conclusion as to whether the 6 weeks water exercise programme was effective or not.

Table 2: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre6min distance - post 6 min distance	-7.17500E1	17.64228	3.94493	-80.00684	-63.49316	-18.188	19	.000

Table 2: It can be seen from the above table that the value of the t- statistics is 18.188. this t – value is significant as the p – value is 0.000 which is less than .05. thus, the null hypothesis of equality of average values aerobic fitness on before and after the water exercise programme is rejected and therefore it may be concluded that the average effect on the aerobic fitness on before and after the water exercise programme is not the same.

Further, by looking to the values of the mean of the aerobic fitness on before and after the water exercise programme in table 1 one may note that the average aerobic fitness have improved before the after the water exercise programme. Since the null hypothesis has been rejected, it may be concluded that the improvement in the aerobic fitness has been significantly improved due to the water exercise programme.

Table 3: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pre fat percentage	38.2700	20	4.52037	1.01079
	post fat percentage	37.0700	20	4.50229	1.00674

Table 3: The values of the mean, standard deviation, and standard error of the mean for the data on body composition on before and after the water exercise programme are shown in the table 3. These values can be used to draw the conclusion as to whether the 6 weeks water exercise programme was effective or not.

Table 4: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre fat percentage - post fat percentage	1.20000	.11239	.02513	1.14740	1.25260	47.749	19	.000

Table 4: It can be seen from the above table that the value of the t- statistics is 47.749. this t – value is significant as as the p – value is 0.000 which is less than .05. thus, the null hypothesis of equality of average values body composition on before and after the water exercise programme is rejected and therefore it may be concluded that the average effect on the body composition on before and after the water exercise programme is not the same.

Further, by looking to the values of the mean of the body composition on before and after the water exercise programme in table 3. One may note that the average body composition have improved before and the after the water exercise programme. Since the null hypothesis has been rejected, it may be concluded that the improvement in the body composition has been significantly improved due to the water exercise programme.

4. Discussion

Post-intervention effect on selected health related fitness components like the aerobic fitness and body composition had shown a significant change after the water exercise programme of obese boys when compared with baseline values that were observed in the study.

The significant change that had taken place in the case of aerobic fitness due to the water exercise programme for the duration of 6 weeks among the obese children can be attributed to the fact that water provides 12 times more resistance of air, so as we exercise we strengthen the muscles thus improving the cardiovascular fitness, balance and range of motion of an individual.

The remarkable changes in the case of body composition after the water exercise programme for the duration of 6 weeks among the obese boys can be as water also has greater resistance than air, which means exercising in water requires more effort and ultimately burns more calories than exercising on land.

5. Conclusion

In the study "analysis of the effect of six week water exercise programme on selected health related fitness component on obese boys" it can be understood that the effect water exercises on selected health related fitness components like the aerobic fitness and the body composition had shown positive effect after the duration of 6 weeks.

6. References

1. Evans, Gethin H, Shirreffs, Susan M, Maughan, Ronald J. Acute effect of Ingeting glucose solution on blood and plasma volume, british journal of nutrition Cambridge university press, 2008.
2. Passé D *et al*. voluntary dehydration in runners despite favorable conditions for fluid lntake, international journal of sports nutrition and exercise metabolism, 2004, 17.
3. Brown A Rivera *et al*. exercise tolerance in a hot and humid climate in heat- acclimatize girls and woman, international journal of sports medicine, 2006, 27.
4. Baker LB, Munce TA, Kenney WL. Sex differences in voluntary fluid intake by older adult during exercise, international journal of sports medicine, 2006, 27.
5. Wilmore H Jack, Costill L David. Physiology of sport and exercise third edition, 308-315, 425-432.
6. William D, Mcardle, Katch, Frank. Exercise physiology forth edition, 18-20.
7. Fox. Bowers, Foss the physiological basis of physical education and athleties fourth edition, 487.
8. Morimoto T, ltoh T. thermoregulation and body fluid osmolality journal of basic clinical physiology pharmacology, 1998, 9.
9. Aggarwal, Sapna. Fluid facts for swimmers", unpublished master's project, Lakshmibai national university of physical education, Gwalior.
10. Amri Hammami *et al*, Effects of soccer training on health-related physical fitness measures in male adolescents Journal health sports science. 2018; 7(2):169-175.
11. Shirreffs SM. symposium on performance, exercise and health hydration, fluids and performance proc nutrition soc, 2008, 1.
12. Brown A, Riveera *et al*. Exercise Tolerance in Hot and Humid Climate in Heat-Acclimatized Girls and Woman international journal of sports medicine. 2006, 27.
13. Wilk B, Bar O. Effect of Drink Flavor and Nacl on Voluntary Drinking and hydrationin boys exercising in the heat."journal of applied physiology, 1997, 31.
14. Sapana Aggarwal. fluid loss among swimmers during different duration water workouts british Journal of sports medicine. 2011, 44.