

Effect of Aqua Exercises on the Sit Ups Test of School Going Girls

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Abstract: *In India school, in academic curriculum physical education is involved as a compulsory subject. After independence Kothari commission (1964-1966), Mudaliar Commission (1952-53) had given suggestion and emphasis in the compulsory program for them and also National policy on education (1986 and 1996) they have given importance regarding physical education program in school going children still is not been executed properly at school level, number of physical activities involved in curriculum of the school level, like sports & games, Gymnastics, formal and informal activities as well. Exercise enthusiasts, athletes, elderly and the physically challenged are discovering aquatic exercise programme that suit their fitness desires. Sit ups are the most popular, convenient and perhaps an ideal mode of aerobic exercise since it involves the maximum number of the body's muscle and abdominal.*

Keywords: Aqua exercises, Sit ups.

1. Introduction

In India school, in academic curriculum physical education is involved as a compulsory subject. After independence Kothari commission (1964-1966), Mudaliar Commission (1952-53) had given suggestion and emphasis in the compulsory program for them and also National policy on education (1986 and 1996) they have given importance regarding physical education program in school going children still is not been executed properly at school level, number of physical activities involved in curriculum of the school level, like sports & games, Gymnastics, formal and informal activities as well. In school program some training method going to adopt but results are not revealed proper. In the school program the different training program should be used.

“Aqua exercises are the exercises that are performed in deep or shallow water.”

Water exercise is rapidly growing in popularity. Exercise enthusiasts, athletes, elderly and the physically challenged are discovering aquatic exercise programme that suit their fitness desires. An advantage of aquatic exercise is that it can involve the upper and lower extremities through optimal ranges of motion while minimizing joint stress. The aquatic medium is eight hundred times as dense as air.

Sportsmen are trained scientifically with the latest training method and sophisticated instruments for improvement in their performance in different sphere of sports. Sport science have enabled sportsman to develop physical capacities beyond anything imagined. Sports have become highly competitive and records are being broken at a greater speed.

The physical capacities of strength, power and speed are important qualities for many sports. Maximum strength and/or power can clearly discriminate athletes of different performance levels in certain sports such as Basketball, Volleyball Swimming and sprint running. As such any sport involving jumping, throwing and striking depends much on the power of musculature. Consequently, the quest for the

optimal power training method has led to the development of various training modes.

Sit ups are the most popular, convenient and perhaps an ideal mode of aerobic exercise since it involves the maximum number of the body's muscle and abdominal. Another mode of aerobic exercise is resistance work for maintaining bodily strength in order to gain and retain leg & abdominal muscle mass and have mass.

Due to changed perception of the forces acting on the body, movement in water is something special. On the one hand, each movement require greater exertion because of the need to overcome water resistance, the movements are more difficult than on land (as you will quickly see if you try to jog through thigh deep water). On the other hand the buoyancy (lift) in water makes it possible for everyone, including heavy people to float or glide peacefully almost without effort.

The benefits of exercising in water have been well known since Greek and Roman times. Examples are:

- 1) Exercising in water is easier: it supports body weight (up to 85% in water up to chest level).
- 2) Water acts as a shock absorb, reducing stress on joints.
- 3) Water allows a full range of movement without excessive strain. Less coordinated individuals can carry out movements in water without the embarrassment they may feel with exposed land-based classes.
- 4) The massaging effect of water increases circulation and promotes relaxation.
- 5) Aqua fitness is a novel and enjoyable way to become and stay fit.
- 6) For these reasons aquatic exercises is one of the most useful and recommendable form of training.

Objective of the Study

To determine the effect of aqua exercise on Bent Knee Sit ups test performance of a school going girls.

Assumptions

- 1) It is assumed that aqua exercise would help to improve physical fitness of school going girls.

- 2) It is assumed that the school girls will take part actively and enthusiastically in whole programme.
- 3) Further it will assume that the effect of aqua exercises may be of immense use for improving physical fitness of school girls.
- 4) It is assumed that trainees were not familiar with aqua exercises.

Though scientific method of research is used, it is assumed that the effect of dependent variable after experiment will be because of independent variable

HYPOTHESIS

Non-Directional Research Hypothesis

H₁: There would be significant change in Bent Knee Sit ups test performance of school girls due to aqua exercise.

$$H_1 : M_1 \neq M_2$$

2. Materials and Methods

The methodology of this study consisted of one experiment using one experimental and one control group for testing the effects of selected aqua exercises on the AAHPER physical fitness test. The purpose of the present study to gather scientific evidence in connection with the utility of aqua exercises in the promotion of Physical Fitness.

For the study experimental method was used. All the 50 subjects were divided randomly into two equal groups viz group I is experimental and group II is control consisted of 25 subjects each. Training intervention was delimited to aqua exercises. The group I receives training of aqua exercises for a total period of 24 weeks, whereas group II (i.e. control group) did not participate in any training program. However, all the subjects participated in their regular school activities as per daily timetable of the school.

The design of the experiment was **pre test post test random group design** and has been planned in three phases:

Phase I: Pre test

Phase II: Aqua training program

Phase III: Post Test

3. Analysis and Interpretation of Results

After the data collection was over, the data were analyzed by using **Independent 't' Test** the results have been narrated, interpreted and discussed logically with scientific reasoning to arrive to conclusion.

Table 1: Sit ups Group Statistics

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	25	3.24	4.14	.8292
Control	25	0.2	3.61	.7234

Table 2: Sit ups Independent Samples Test

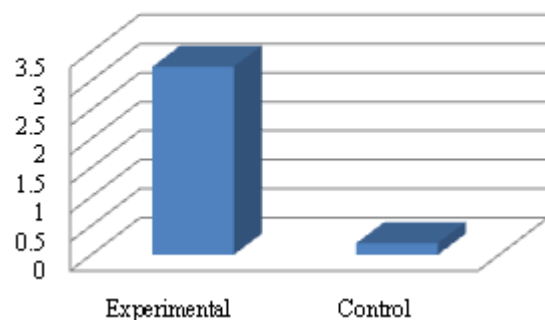
	Leven's Test for Equality of Variance		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error of Diff.
Equal variances assumed	.021	0.88	2.76	48	0.008	3.04	1.1
Equal variances not assumed			2.76	47.13	0.008	3.04	1.1

Sit ups Group Statistics:

Change in sit ups performance of experimental group was 3.24 and standard deviation 4.14 and that for control group it was 0.02 and standard deviation 3.61. Change of performance was compare with independent sample 't' test. Equality of variances was tested by Levenes's test for equality of variances 'F' value .021 which was not found statistically significant at 0.05 significance level. (p=0.88) This indicates that Variances was equal mean difference between change sit ups score of experimental and control group was 3.04.

The mean difference between control and experimental was tested by Independent sample 't' test where 't' value was 2.76 (df=48) which was statistically significant at 0.05 significance level(p=0.008). This indicates that Experimental group has shown significant growth in Sit ups performance than control group.

Sit ups



Graphical representation Mean Difference of Sit ups

4. Conclusion

The observation of the experimental data, within limitations, help to conclude that –

There was significant improvement in Bent knee Sit ups performance of school going girls age between 14 to 16 years who underwent the Aqua training programme.

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