# EFFECTS OF AQUA AEROBICS AND FLOOR AEROBICS ON BREATH HOLDING TIME AMONG SCHOOL GIRLS

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**Abstract**

*The purpose of the study was to find out the effects of aqua aerobics and floor aerobics on breath holding time among school girls. To achieve this purpose of the study, ninety school girls were selected as subjects who were studied Cornation Higher Secondary School, Sivakasi. The selected subjects were aged between 15 to 17 years. The selected subjects were randomly divided into three groups of 30 subjects each group. Group one acted as experimental group I and group two acted as experimental group II and group three acted as control group. Group one underwent floor aerobics, group two underwent aqua aerobics training for eight weeks and group three underwent routine physical exercise. The subjects were tested on selected criterion variables such as breath holding time prior to and immediately after the training period. The selected criterion variables such as breath holding time was measured by using stop watch. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental group and control group on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. The result of the present study has revealed that there was a significant difference among the experimental and control group on breath holding time.*

***Key words:*** *aqua aerobic, floor aerobic, breath holding time*

Physical Education aims to keep people "healthy". The Physical Education / health programmed provide boys and girls with accurate and significant knowledge related to their individual needs and interest. There is also concern for health services and healthy physical and emotional environment. Physical fitness is more than is not being sick or merely being well. It is different from resistance or immunity from disease. Physical fitness therefore is an essential quality in humans.

Aerobic exercise comprises innumerable forms. In general, it is performed at a moderate level of intensity over a relatively long period of time. For example, running a long distance at a moderate pace is an aerobic exercise, but sprinting is not. Playing singles tennis, with near-continuous motion, is generally considered aerobic activity, while golf or two person team tennis, with brief bursts of activity punctuated by more frequent breaks, may not be predominantly aerobic. Aqua fitness is the latest fad in the world of fitness. Aqua exercise is any exercise done in water to complement and enhance your regular training and exercise. Aqua aerobics is refreshing as water calm and relaxes one's body. As a low impact exercise, anyone can do aqua aerobics. The body remains submerged in water and this acts a cushion and prevents any form of injury. Aerobic exercise performed in water, known as aqua aerobics. Water aerobics or "waterobics" is the performance of aerobic exercise in shallow water such as a swimming pool. In some areas it is known as Aqua Fit or "Aqua aerobics", and is a type of resistance training. Some of other benefits of aerobic exercise include the ability to utilize more oxygen during exercise, a lower heart rate at rest, the reduction of less lactic acid, greater endurance. Also may exercise physiologist have found that it reduces blood pressure and changes blood chemistry. It also improves the efficiency of the heart. More evidence is needed to substantiate the belief by some persons that aerobic exercise is reasonable for the development of supplemental blood vessels to heart which would be held in the event of the heart attack, and also that such exercise results in increasing the size of coronary arteries and thus assisting the flow of blood to the heart if the artery is narrowed by a clot.

Positive breath holding time has been defined as an individual's ability to hold breath after a voluntary forced maximal inhalation. Negative breath holding time has been defined as an individual's ability to hold breath after a voluntary forced maximal halation. The breath holding time is measured to the nearest second.

**Methodology**

The purpose of the study was to find out the effects of aqua aerobics and floor aerobics on breath holding time among school girls. To achieve this purpose of the study, ninety school girls were selected as subjects who were studied Cornation Higher Secondary School, Sivakasi. The selected subjects were aged between 15 to 17 years. The selected subjects were randomly divided into three groups of 30 subjects each group, Group one acted as experimental group I and group two acted as experimental group II and group three acted as control group. Group one underwent floor aerobics, group two underwent aqua aerobics training for eight weeks and group three underwent routine physical exercise. The subjects were tested on selected criterion variable such as breath holding time prior to and immediately after the training

period. The selected criterion variable such as breath holding time was measured by using stop watch. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental group and control group on selected criterion variables separately. Scheffe's post hoc test was used to find out the paired adjusted mean difference when the study was significant. In all the cases, 0.05 level was used to test this significance.

**Findings:** The mean and standard deviation scores of pretest, posttest and adjusted posttest of breath holding time on aqua aerobics, floor aerobics and control group are given in table I. 'F'ratio test computed in regards to the breath holding time on aqua aerobics, floor aerobics and control group in the pretest, posttest and adjusted post test are also presented in table I.

Table I shows the analysed data of breath holding time. The breath holding time pre means were 30.08 for the aqua aerobic training group, 30.03 for the floor aerobic training group and 29.12 for the control group. The resultant 'F' ratio of 0.009 was not significant at .05 levels indicating that the three groups were no significant variation. The post test means were 33.65 for the aqua aerobic training group, 31.71 for the floor aerobic training group and 29.15 for the control group. The resultant 'F' ratio of 64.84 at .05 level indicating that it was significant. The difference between the adjusted post-test means of 33.61 for the aqua aerobic training group, 31.72 for the floor aerobic training group and 29.13 for the control group yield on 'F' ratio 186.23 which was significant at.05 level.

The result of this study showed that there was a significant difference between floor aerobic training, aqua aerobic training and control groups on breath holding time. Further to determine which of the paired means had a significant difference Scheffé *S* test was applied and the result was presented in Table II.

The mean differences of breath holding time between the aqua aerobic training group and control group, aqua aerobic training group and floor aerobic training group and floor aerobic training group and control group were 4.48, 2.1.89 and 2.59 respectively. The results of the study shows that eight weeks of training produced significant improvement in breath holding time for both aqua aerobic training group and floor aerobic training group, and also significant variation in the improvement of breath holding time between the experimental groups.

**Table II: SCHEFF— *S* TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST-TEST MEAN OF BREATH HOLDING TIME**

| Variables | Adjusted Post Test means | | | Mean Difference | Confidence Interval at .05 |
|---|---|---|---|---|---|
| | Aqua Aerobic Group | Floor Aerobic Group | Control Group | | |
| Breath Holding Time | 33.61 | | 29.13 | 4.48* | 0.60 |
| | 33.61 | 31.72 | | 1.89* | 0.60 |
| | | 31.72 | 29.13 | 2.59* | 0.60 |

## Conclusions

The findings of the study showed that there was no significant difference between the pretest of breath holding time.

The findings of the study showed that there was a significant difference between the posttest and adjusted posttest of breath holding time.

The results on breath holding time assessed by stopwatch was presented in table I, proved that there was a significant difference between post test means and the adjusted means. Thus, comparing to control group, floor aerobics and aqua aerobics exercises significantly improved the breath holding time of the school girls. Scheffe's post hoc analysis presented in table II proved that aqua aerobics was better than floor aerobics in improving the breath holding time among school girls. The results by and large are in conformity with findings of Uppal, Cummings and Faith Newman.

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**Table I**
**MEAN STANDARD DEVIATION AND 'F' RATIO OF AQUA AEROBICS FLOOR AEROBICS AND CONTROL GROUP ON BREATH HOLDING TIME**

| | A A Group | F A Group | Control Group | Source of Variance | Sum of Squares | Df | Mean Squared | 'F' ratio |
|---|---|---|---|---|---|---|---|---|
| | Breath Holding Time | | | | | | | |
| Pre test Mean | 30.08 | 30.03 | 29.12 | Between | 0.16 | 2 | 0.08 | 0.009 |
| S D | 11.88 | 7.18 | 8.56 | Within | 7712.47 | 87 | 88.65 | |
| Post test Mean | 33.65 | 31.71 | 29.15 | Between | 8755.49 | 2 | 4377.74 | 64.84* |
| S D | 9.37 | 7.13 | 8.00 | Within | 5874.17 | 87 | 67.52 | |
| Adjusted posttest Mean | 33.61 | 31.72 | 29.13 | Between | 8712.22 | 2 | 4356.36 | 186.23* |
| | | | | Within | 2011.76 | 86 | 23.39 | |

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