EFFECT OF SWIMMING TRAINING PROGRAMME ON MASCULAR FLEXIBILITY AMONG THE MIDDLE AGE SWIMMERS

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***Abstract*- Swimming includes the use of one's own body to propel oneself through water or some another fluid substance. It can be done for a numerous reason, including as a form of exercise, to improve physical fitness, for recreation or leisure or as a competitive sport. Swimming can also helpful for health benefits including cardiovascular system, muscle strength and endurance and also helpful for coordination and flexibility. Through the facilitation of the development of appendages and the body, velocity is achieved. After birth, people may cease their breathing while immersed and accept easy training swimming as an endurance reaction. Swimming is consistently one of the most popular games for spectators, and in some countries swimming lessons are required as part of the academic curriculum.**

In the present research study, middle age swimmers from Shree Hanuman Vyayam Prasarak Mandal's Aquatic Center, Amravati was the source of data. In the present research study, middle age swimmers who did the daily practice in Shri. H. V. P. Mandal's Swimming Pool, Amravati, was inclusion criteria. Our study shows an age range of participants between 35 to 44 years.

A simple random group design including a pre-test and post-test had been proposed for the current study. For control group no specific training was given, except their daily work. The training given as per scheduled to the experimental groups only. The training period was 60 minutes/day, 6 days in a week up-to 90 days. When statistical analysis done with control and experimental group, study findings shows there was statistically significant difference observed in post-test. Therefore, swimming training programme administered on experimental group improves muscular arm strength of the swimmers.

Keywords: **Swimming, exercise, endurance, training.**

INTRODUCTION:

A gurgling movement in swimming is the precursor to breathing out submerged: Blowing bubbles out of your mouth teaches you to exhale. It is basically that, whenever your face is submerged in water, you constantly and easily exhale. As you breathe out, you release any tension in your body and you are able to hold back from worrying about the future. You have a choice between exhaling by your mouth, nose, or both. Make an effort to create an even, smooth stream of air pockets. In free-form swimming, you breathe continuously through your mouth or nose into the water, except when you turn your head out of the water and breathe in. Except when you turn your head out of the water to breathe in, you breathe constantly via your mouth or nose into the water while free-form swimming. They wait as long as they can before exhale a sizable air pocket into the water, causing a splash. You are compelled to continually give air by percolating underwater. When you raise your head from the water, you are free and ready to take a breath.

Abundance Carbon Dioxide: Stress is a threat when swimming. In the unlikely circumstance that you discontinue breathing, your body begins to worry. An increase in carbon dioxide in your lungs and circulatory system, coupled with an inadequate supply of oxygen, causes distress and leads you to inhale slowly. During swimming, you have a constant flow of air pockets, which means CO2 won't build up in your framework and you won't feel nervous during the next breath. In the rare circumstance that you make an effort to breathe in and out while your head is above water, you are cramming a lot of actions into a small amount of time.

Weave and Bubble: With breathing air pockets submerged, you can engage in activities to improve your happiness while working on your technique. A technique to practise breath control is to bounce, where you submerge yourself and slowly exhale a rush of air pockets via your mouth and nose.

When you come back, take a breath when you are at the surface, then exhale as you descend back into the water. According to Janet Evans' autobiography, "Janet Evans' Total Swimming," Evans used a technique in which she clung to the side of the pool, took deep breaths, and then plunged her head and torso under the water. She would then blow the air out of her nostrils and rise to clear her lungs before she surfaced. The tactic is a simple but effective way to become an expert foamer.

The study reveals that-

The effect of preparation on swimmers' exhibitions was examined by Hough. The gurgling preparation was given to the swimmers for a half-month. As a result, there significant improvement was observed in swimmers' performance after preparation for swimming.

According to study done by Lepore, Gayle and Stevens (2007) reported that, drenching in water up to your chest can have a positive impact on lymphatic pressure, venous pressure, expanded focal blood volume, expanded heart volume, increased oxygen supply, increased blood flow, weight offloading, diminished joint pressure with growth.

It has been shown by Kay Latto (1981) that swimming is among the best exercises for intellectually disabled people. It has been recognized for quite some time that water is valuable for sports, instruction, and restorative purposes. (Lepore, Gayle and Stevens 2007)

In many articles author reported that, the water climate has been portrayed as one of the best approaches for restoration, treatment, guidance, instruction, relaxation, entertainment, and rivalry. Furthermore, swimming has physiological, mental, and social benefits. Also, it provides a unique opportunity for a long-term sporting outlet with friends and family reported by (Paul Jansma 1988 p.312). The primary objectives of a swimming system for students with disabilities are to appreciate water exercises, to learn how to swim, and to improve their swimming ability.

Methodology:

A systematic method and procedure is required for every research project; therefore, this chapter follows the following procedure with information regarding –

Sources of Data:

In the present research study, middle age swimmers from Shree Hanuman Vyayam Prasarak Mandal's Aquatic Center, Amravati was the source of data.

Selection of Subjects:

In the present research study, middle age swimmers who did the daily practice in Shri. H. V. P. Mandal's Swimming Pool, Amravati, was selected as subjects. In this study, subjects ranging in age from 35 to 44 years were selected as inclusion criteria.

Sampling Procedure:

Procedure adopted for the selection of subjects was purposive sampling method.

Study Design:

This study was designed as a simple random group design with a pre-test and post-test.

For control group no specific training was given, except their daily work. The training given as per scheduled to the experimental groups only. The training period was 60 min/day, 6 days in a week for 90 day's. Exercise was presented in progressive way and adopted simple to complex process. The variables measurement for all four groups in the beginning was pre-test and at the end of the experimental period means after 90 day's again all the variables was measured for all four groups is post-test.

Administration of Test: Sit & Reach Test

Purpose: To measure muscular flexibility of the subject.

Equipments: Sit & Reach test Box, measuring tape, etc

Procedure: The subject asked to remove shoes and place his feet against the testing box while sitting on the floor with straight kneed. Now the subject ask to place one hand on top of the other, so that the middle finger of both hands together at the same length. The tester keeps his hand on the kneed of the subject to keep them straight not allowing any bending of the knee. The subject instructed to lean forwards and place his hands over the measuring scale lying on the top of the box with its 10 inch mark concluding with the front edge of testing box. Then the subject ask to slide his hands along the measuring scale as far as possible without bounding and to hold to further position for at least three second.

Scoring: The score will be noted in centimeters.

Analysis and Interpretation of Physical Fitness Components

Analysis of Covariance (ANCOVA) for Sit & Reach performance of 35-44

ANOVA table for Pre- Test (x) Post Test (y) scores

Source of Variance	d.f.	SSx	SSy	MSSx	MSSy	Fx	Fy
Treatment group means	1	0.4167	120.42	0.4167	120.42	0.014@	7.389*
Error	58	1758.57	945.23	30.32	16.30		

*Significant and @Not Significant at 0.05 Tabulated F0.05(4,58)= 4.00

From above table it is observer that, Fx = 0.014 is not significant indicating the control and experimental groups are homogeneous in pre-test. But Fy = 7.339 is significant indicating in post test there is significant difference in sit & reach performance of control and experimental group.

Analysis of Covariance

Source of Variance	d.f	SSx	SSy	SSxy	SSyx	MSSyx	Fyx
Treatment group means	1	0.4167	120.42	-7.083	130.15	130.15	52.359*

Error	57	1758.57	945.23	1188073	141.69	2.49	

*Significant and @Not Significant at 0.05 Tabulated $F_{0.05(1,57)} = 4.00$

Since Fyx = 52.359 is greater than the tabulated F-value of 4.00 at 0.05 level for 1/57 degrees of freedom, it is quite clear that the swimming training programme is not equally effective in improving the sit & reach performance of control and experimental group. In order to find out which group is more effective, pairwise comparison analysis on adjusted means of post test data would be carried out.

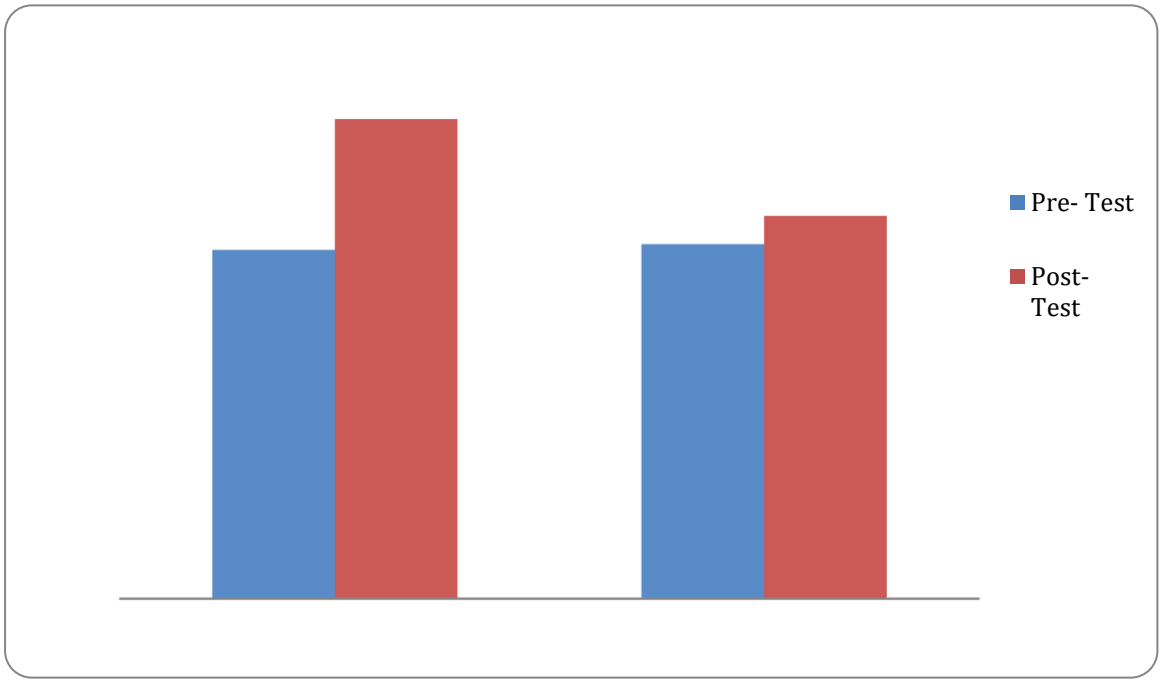
Group Means and Adjusted Final Means

Groups	Sample size	Mx	My	Mean adjusted Myx
Experimental	30	10.23	14.07	14.12
Control	30	10.40	11.23	11.18

Testing Significance of Difference among Adjusted Post Test Means of Experimental and Control Groups using LSD Test

Experimental Group	Control Group	Mean Difference	Critical Difference
14.07	11.23	2.95*	0.81

It is evident that, there is a significant difference in post test means of control and experiment group as MD=2.95 > CD=0.81. Further it is clear that the swimming training programme administered on experimental group improves muscular flexibility of the swimmers.



RESULTS:

According to the analysis, the calculated Fx = 0.014is less than the tabulated F-value of 4.00 at 0.05 level for 1/58 degrees of freedom for (pre-test) experimental and control groups. But Fy = 7.389is significant noted in post-test. Therefore, we stated that, there is significant difference observed in flexibility performance of experimental and control group. Since, the calculated Fyx = 52.359 is greater than Tabulated F0.05(1,57) =4.00, these represented that, the swimming training programme is not equally effective in improving the push-ups performance of control and experimental group.

CONCLUSION:

As a result of the above paper, it is concluded that there is a significant difference observed between control and experimental groups with respect to post-test. Therefore, the swimming training programme administered on experimental group improves muscular flexibility of the swimmers.

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