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Impact of Different Modes of Aquatic Training Protocol on Muscular Endurance Variables among University Swimmers

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Abstract

The purpose of the study is to find out the impact of different modes of aquatic training protocol on muscular endurance among university swimmers. This method designed to develop the Muscular endurance of Swimmers for a long time plan for the development of swimming Performance. To achieve the purpose of the study, the investigator randomly select thirty male University swimmers at the age of 18 -21 years from Academy of Maritime Education and Training University in Chennai. The selected subjects divided in to Experimental group I (Aquatic training –Package I), Experimental group II (Aquatic training –Package II) and Control group. Each group consist of 10 subjects are considered as Independent variables. Muscular endurance was selected as Dependent Variable. The experimental training programmes are scheduled five days per week for a period of 4 weeks. To examine the hypothesis of the study the collected data will be treated with ANCOVA and Scheffe's post hoc test. The level of significance will be tested as 0.05. The results proved that there was a significant improvement on Health Related Fitness due to Aquatic training.

Keywords: Aquatic training drills, Deep breath relaxation technique, Positive self-talk and Muscular endurance.

Introduction

Swimming is the best and most complete form of exercise. It provides the same aerobic benefits that running and other activities. But unlike running and other forms of exercise, it works all the muscles of the body. Since it does not put the strain on connective tissues that running and jogging do, it rarely leads to injury, and it provides numbers psychological benefits as well from increased self-esteem to an enriched love life. Swimming is really the best all-around exercise, there is especially as you grow older. Swimming drills are excellent tools to focus a swimmer's effort toward swimming efficiency. They can be strategically incorporated into any swim session. A routine that includes specific practice, like drills, rather than just work out, allows a swimmer to experience long term swimming improvement by building efficient swimming from the technical side and the conditioning side simultaneously. Muscular Endurance deals with the ability of the muscle to exert force for a brief time period, while endurance is the ability of a muscle, or group of muscles, to sustain repeated contractions or to continue to apply force against an inert object.

The ability of a muscle or muscle group to exert force repeatedly is known as muscular endurance.

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Muscular endurance also refers to the capacity of a muscle or muscle group to sustain a contractive state over a period of time. Muscular strength and endurance are specific to each muscle or muscle group. That is, different muscles in the body can have different levels of strength and endurance. Moreover, muscles used more frequently are stronger and have greater endurance than the muscles used less frequently. Maintenance of strength and endurance requires that the muscles be used. When muscles are not used, strength and endurance decrease. Self-talk is an effective technique to control thoughts and to influence feelings. Thoughts and feelings can influence, self-confidence as well as performance. Self-talk can be in the form of words actually spoken, or in the form of thoughts that come into one's mind. These thoughts can be either positive or negative. As a psychological method for improving self-confidence, self-talk must be positive in nature and lead to positive feelings about a swimmer's ability. Evidence exists to support the use of self-talk is a strategy used by both junior and professional tennis player (De-Francesco & Burke, 1997; Gould, Russell, Damarjian & Lauer, 1999).

Statement of the Problem

The purpose of the study was to find out the impact of different modes of aquatic training protocol on muscular endurance among University swimmers.

Review of Literature

Antonis Hatzigeorgiadis (2006) conducted a

study on "Instructional and Motivational self-talk: An investigation perceived functions of self-talk". Twenty six physical education students participated in an intervention study using an experimental task in swimming. The study lasted five consecutive days. On the first day participants were tested on a breaststroke leg drill. For the three following days participants practiced the use of different types of self-talk on breaststroke arm drills. On the last day participants repeated the test of the first day, using instructional and motivational self-talk, and reported their perceptions regarding the functions of self-talk. The results revealed that according to participants' perceptions both types of self-talk helped them mainly to improve their attention to the task. Furthermore, participants reported that the motivational self-talk cue had greater impact on effort, than the instructional self- talk cue, whereas effects on attention, confidence, anxiety control, and automaticity were similar when using instructional and motivational cues. The results suggest that the effectiveness of self- talk is attributed mainly to its attention function, at least in the case of novel tasks. Furthermore, preliminary evidence suggests that different types of self-talk serve different functions depending on the content of the self-talk cues.

Methodology

Thirty University swimmers were selected at random from AMET University, Chennai. Their age ranges from 18 to 21 years. They were divided into three equal group's consists of fifteen in a group, namely experimental group I, experimental group II and control group. Experimental Group I exposed to Aquatic training (Package-I), Experimental group II exposed to Aquatic training (Package –II), and control group was restricted from participating in the training Programme. The Training progamme was allotted for three alternate days per week (Monday, Wednesday, Friday for experimental group I and Tuesday, Thursday and Saturday for experimental group II in the evening sessions, between 4.30 pm to 5.30 pm. To assess the effect of 4weeks training programme. Muscular endurance is chosen as dependent variables for this study.

Criterion Measures

Muscular Endurance – One minute sit-up test. Further the collected data were analyzed by ANCOVA and followed by Scheffe's post hoc test

Table 1
Aquatic Training (Drills Package -I)

Sl.No	Drill	Sl.No	Drill
1.	Flutter kick deck drill	9.	Controlled breaststroke
2.	Push and float on back	10.	Breastrstroke pull and dolphin kick-head up
3.	Inverted Dolphin kick	11.	Dolphin drill with breathing
4.	Streamline back kick	12.	Power fly
5.	One-arm extended back kick	13.	Controlled butterfly
6.	Guided one-arm backstroke	14.	Freestyle-to-backstroke turn
7.	Breathe, Kick, Slide	15.	Two – Hand touch turn
8.	Slide-stroke-slide breaststroke drill	16.	Freestyle finish

Table 2
Aquatic Training (Package -II)

Sl.No	**Drill**	**Deep Breath Relaxation Technique**	**Positive self-talk**	**Sl.No**	**Drill**	**Relaxation Technique**	**Positive self-talk**
1.	Flutter kick deck drill			9.	Controlled breaststroke		
2.	Push and float on back			10.	Breastrstroke pull and dolphin kick-head up		
3.	Inverted Dolphin kick			11.	Dolphin drill with breathing		
4.	Streamline back kick			12.	Power fly		
5.	One-arm extended back kick			13.	Controlled butterfly		
6.	Guided one-arm backstroke			14.	Freestyle-to-backstroke turn		
7.	Breathe, Kick, Slide			15.	Two – Hand touch turn		
8.	Slide-stroke-slide breaststroke drill			16.	Freestyle finish		

Computation of Analysis of Covariance and Post Hoc Test

The statistical analysis comparing the initial and final means of Muscular Endurance among University Swimmers is presented in Table 3.

Table 3.
Computation of analysis of covariance on muscular endrunace variables (Score in Seconds, Number of Counts)

Variables	Test	Aquatic Training (Package-I)	Aquatic Training (Package-II)	Control Group	SV	SS	df	MS	F	TF
Muscular Endurance	Pre Test	31.20	34.80	29.20	B	161.07	2	80.53	9.34*	3.22
					W	232.80	27	8.62		
	Post Test	35.90	40.70	32.60	B	331.80	2	165.90	**25.25***	3.22
					W	177.40	27	6.57		
	Adjusted Means	36.31	38.32	34.56	B	42.30	2	21.15	14.62*	3.23
					W	37.61	26	1.45		
	Mean gain	4.70	5.90	3.40						

***Significant at 0.05 level**

Table 4
Ordered scheffe's test of experimental groups and control groups

Variables	Aquatic Training (Package-I)	Aquatic Training (Package-II)	Control Group	Mean Difference	Scheffe's test F Ratio
Muscular Endurance	36.31	38.32	-	2.01*	1.37
	36.31	-	34.56	1.75*	1.37
	-	38.32	34.56	3.76*	1.37

***Significant at 0.05 level**

Discussion on Findings

The results presented in Table 4 proved that due to Aquatic training drills (package-I) and Aquatic training (package-II) among University swimmers were significantly improved over the control group. Further the Aquatic training (Package-I) was significantly better than Aquatic drills (Package-II) in improving Musuclar Endurance of University Swimmers.

Conclusion

It was concluded that there was significant improvement in Muscular Endurance among University Swimmers due to Aquatic training (Package I) compared to Aquatic training drills (Package-I) and Control group.

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