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Association between Swimming Performance and Selected Psychological Variables of Indian Male Swimmers

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Abstract

The aim of this study was find out the association between swimming performance and selected psychological variables such as mental toughness and stress among Indian male swimmers. To achieve this purpose of the study fifty Indian male swimmers who had attended coaching Camps at NIS Patiala were selected as subjects. The subjects selected were in the age group between 18 to 23 years. Swimming performance were determined through freestyle 100 M swim and the time was recorded. Mental toughness was measured through Mental Toughness Questionnaire and stress was measured through "Stress scale. The questionnaire on mental toughness and stress were scored based on the key for this purpose suggested by the authors and validated for this purpose during pilot study. Pearson correlation coefficient was used to determine the association between swimming performance (timing for 100 M swim) and the psychological variables selected mental toughness and stress of the Indian male swimmers. The results showed the descriptive statistics on swimming performance, mental toughness and stress. The association of swimming performance with selected psychological variables proved that there was significant relationship between swimming performance and psychological variable mental toughness of swimmers as the obtained 'r' value of 0.765 was greater than the required 'r' value to be significant at 0.05 level. It was also found that the swimming performance of swimmers was not related with psychological variable stress as the obtained 'r' value 0.018 was less than the required 't' value to be significant at 0.05 level. It was concluded that mental toughness of Indian male swimmers was significantly associated with swimming performance.

Keywords: Swimmers, Mental Toughness, Stress.

Introduction

Sport plays a very prominent role in the modern society. It is important to individuals, a group, a nation and indeed the world. Throughout the world, sport has a popular appeal among people of all ages and both sexes. Much of the attraction of sport comes from the wide variety of experience and feeling that result from participation such as success, failure, exhaustion pain, relief and feeling of belonging (Mathews, 1973). Swimming is an individual or team racing sport that requires the use of one's entire body to move through water. The sport takes place in pools or open water. Competitive swimming is one of the most popular Olympic sports, with varied distance events in butterfly, backstroke, breaststroke, freestyle, and individual medley. In addition to these individual events, four swimmers can take part in either a freestyle or medley relay. A medley relay consists of four swimmers who will each swim a different stroke, ordered as backstroke, breaststroke, butterfly and freestyle.

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The usual observations from swimmers and coaches regarding improving their mental training is a lack of time. Normally after 8-10 sessions in the water, along with a couple dryland sessions, it's understandable that most swimmers and coaches feel like they have little left over to spend on sharpening their mental skills. Hence, studies found adding regular mental training work to a group of 36 nationally ranked age group swimmers over a 7-week period found performance improvements in the pool, while also significantly impacting the swimmer's positive psychological profiles (Oliver, 2018).

Shilo J Dormeh et.al. (2017) evaluated the efficacy of existing performance models to assess the progression of male and female adolescent swimmers through a quantitative and qualitative mixed methods approach. The study found higher levels of retrospective motivation appeared to be synonymous with higher-level career performance. This mixed-methods approach helped confirm the validity of the models that were found to be applicable to adolescent swimmers at all levels, allowing coaches to track performance and set goals. The value of the models in being able to account for the expected performance gains during adolescence enables quantification of peripheral factors that could affect performance. Jennifer Meggs and , Mark A Chen

(2010)[2] assessed the effect of two different psychological methods of skills training-self-talk and goal setting-on the swim ming performance of youth swimmers. Both self-talk (η^2 = .50; ±0.48) and goal setting (η^2 = .71; ±0.4) showed a small and moderate positive effect, respectively, relative to the control group. A social validation check confirmed that the swimmers found the intervention to be relevant, beneficial, and meaningful for improving performance. Psychological skills training may be effective in improving youth swimming performance; specific mechanisms underlying these benefits need further exploration. Ludovic Seifert et.al. (2014) documented that in a biophysical approach to the study of swimming performance (blending biomechanics and bioenergetics), inter-limb coordination is typically considered and analysed to improve propulsion and propelling efficiency. This perspective explains how behaviours emerge from a set of interacting constraints, which each swimmer has to satisfy in order to achieve specific task performance goals and produce particular task outcomes. This overview updates understanding on inter-limb coordination in swimming to analyse the relationship between coordination variability and stability in relation to interacting constraints (related to task, environment and organism) that swimmers may encounter during training and performance.

The swimmers did 45 minutes of psychological skills work per week. Training included teaching goal setting, how to use visualization, relaxation and concentrating techniques, as well as teaching the swimmers how to manage their self-talk. Swimmers reported improvements in self-esteem, mental toughness, and dispositional optimism contributed for improvement in performance in the pond. For the purpose of the study, mental toughness and stress were considered to find out the association with swimming performance of Indian male swimmers.

Methodology

Fifty Indian male swimmers who had attended Indian coaching Camps in NIS Patiala . The subjects selected were in the age group between 18 to 23 years. Swimming performance the swimmers were determined through freestyle 100 M swim and the time was recorded. Mental toughness was measured through Mental Toughness Questionnaire and stress was measured through "Stress scale" The questionnaire on mental toughness and stress were scored based on the key for this purpose suggested by the authors and validated for this purpose during pilot study. Pearson correlation coefficient was used to determine the association between swimming performance (timing for 100 M swim) and the psychological variables selected, mental toughness and stress of the Indian male swimmers.

Results

Table 1. *Descriptive statistics on swimming performance selected psychological variables of the subjects*

S.No	Variables	N	Mean (M)	Standard Deviation (SD)
1	Swimming	50	108.72	14.234
1	Mental Toughness	50	13.90	2.943
2	Stress	50	20.70	3.448

The descriptive statistics presented in Table 1 shows the swimming performance of 100 M swimming mean was 108.72 with standard deviation ± 14.234. The psychological variable mental toughness mean was 13.90 with standard deviation of ± 2.943, stress of the subjects was 20.7 with standard deviation of ± 3.448. The association between selected psychological variables with swimming performance was statistically analysed through Pearson Correlation Coefficient and the results presented in Table 2.

Table 2. *Correlation coefficient between swimming performance and selected psychological variables of the subjects*

S.No	Variables	N	Mean (M)	Obtained 'r' value
1	Mental Toughness	50	13.90	0.765*
2	Stress	50	20.70	0.018

* Significant at 0.05 level.

Discussions

The results presented in Table I shows the descriptive statistics on swimming performance, mental toughness and stress. The results association of swimming performance with selected psychological variables presented in Table II proved that there was significant relationship between swimming performance and psychological variable mental toughness of swimmers as the obtained 'r' value of 0.765 was greater than the required 'r' value to be significant at 0.05 level. It was also found that the swimming performance of swimmers was not related with psychological variable stress as the obtained 'r' value 0.018 was at 0.05 level. Jennifer Meggs and , Mark A Chen (2010) assessed the effect of two different psychological methods of skills training-self-talk and goal setting-on the swimming performance of youth swimmers and found psychological skills training may be effective in improving youth swimming performance; specific mechanisms underlying these benefits need further exploration. The results of the study also included psychological variable, mental toughness as one of the predictor variable for swimming performance with obtained 'r' value of 0.765. The finding were in agreement with the findings of Jennifer Meggs and , Mark A Chen (2010).

Conclusions

It was concluded that mental toughness of Indian male swimmers was significantly associated with swimming performance.

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