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Relationship between Selected Anthropometric Parameters and 50m Freestyle Swimming Time in Teenage Swimmers

RMUS Sugathadasa[1#], MRMA Jayasinghe [1] and RMKT Rathnayaka[1]

[1] *Department of Sports Sciences and Physical Education, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka, P.O. Box.02, Belihuloya, Sri Lanka*

[#] saubhagyasugathadasa6@gmail.com

Swimming is an Olympic sport, and it is a very popular endurance development activity around the world. Anthropometry is one of the main factors that influence the swimming performance of teenagers. This study aimed to examine the relationship between selected anthropometric parameters and 50m freestyle swimming time in teenage swimmers. The sample was thirty (n=30) provincial level male swimmers 13-17 years of age. Their body weight, height, and BMI were 35.0-96.5 Kg, 136.0-181.9 cm, and 21.81 Kgm^{-2}. The dependent variable was 50m freestyle swimming time and the independent variable was anthropometric parameters including; body weight, height, length measurements (upper arm, lower arm, hand, upper leg, lower leg, foot, arm span), circumference (chest, abdomen) and skinfold measurements (bicep girth, tricep girth). Data were collected from a 50m freestyle swimming race and measuring thirteen anthropometric parameter sites of the body. Stadiometer, digital weighing scale, skinfold caliper, measuring tape, and the stopwatch was used as measuring instruments. Pearson correlation coefficient in SPSS 26.0V was applied to determine the relationship between 50m freestyle swimming time and anthropometric parameters of sample swimmers at $P<0.05$ level of significance. As a result, the mean values of swimming time, body weight, and height were 39.9±7.30 seconds, 57.65±15.91 Kg, and 162.56±9.74 cm. The body weight ($r=0.376$, $P=0.041$), height ($r=0.375$, $P=0.041$) and hand length ($r=0.397$, $P=0.030$) had a significant positive moderate correlation with 50m freestyle swimming time. The study concludes that some anthropometric parameters influence the swimming time of teenage male swimmers. Therefore, they have to manage the anthropometric parameters of the body, to achieve their target apart from the other influencing factors related to swimming.

Keywords: *anthropometric, freestyle, swimming, teenage male swimmers*