November, R.V. & Leach, L.L. (2016). Physical and performance measures of university cricket players.
African Journal for Physical Activity and Health Sciences, 22(4:2), 1140-1156.
http://hdl.handle.net/10520/EJC200146

Physical and performance measures of university cricket players

R.V. November and L.L. Leach

Abstract

The ability to throw a ball at high velocity and with great accuracy is critical for successful performance in many ball sports. This study examines the physical characteristics and performance measurements amongst university cricketers. A convenient sample of 40 male cricketers from four teams at the University of the Western Cape was tested. Physical characteristics comprised stature, body mass, skinfold thickness, girth circumferences and limb lengths. Isokinetic strength was measured at $60^{o}\bullet sec^{-1}$ and $90^{o}\bullet sec^{-1}$using the Biodex Pro System 4 isokinetic dynamometer. Throwing velocity was measured using a calibrated Speed Gun. The fourth team had a significantly shorter arm length than the other teams. Player experience also differed significantly between the first team and the other three teams. Age and body fat percentage correlated significantly with throwing velocity, but in the first team only. Significant correlations were found for the following variables, i.e., between age and strength ratio in the first team; between hip circumference and peak torque during internal rotation at $90^{o}\bullet sec^{-1}$ in the second team; between body mass and peak torque during internal rotation at $60^{o}\bullet sec^{-1}$ in the third team; between total arm length and peak torque during internal rotation at $60^{o}\bullet sec^{-1}$ in the fourth team. In conclusion, this study found that various physical characteristics such as age and body fat percentage significantly influenced throwing velocity, while body mass, hip circumference and total arm length had a significant influence on peak torque.

Introduction

Various physical and anthropometric characteristics of athletes play an important role in determining success in sport (Koley et al., 2012). It has been reported in the literature that specific physical characteristics indicate whether a player would be suitable for high level competition in a specific sport (Gutnik et al., 2015; Bennur, 2016).

The isokinetic dynamometer is useful in characterizing an athlete's muscular status, since it provides information about strength, power, endurance, and strength ratios. Isokinetic evaluation is an extensively used tool for studying the shoulder muscle performance of both healthy and injured athletes (Steulcken et al., 2008; Stickley et al., 2008; Saccol et al., 2010).

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