

ANTHROPOMETRIC, PHYSICAL AND MOTOR PERFORMANCE DETERMINANTS OF SPRINTING AND LONG JUMP IN 10-15 YEAR OLD BOYS FROM DISADVANTAGED COMMUNITIES IN SOUTH AFRICA

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ABSTRACT

The most talented subjects (N = 39) were selected from 66 boys by means of a Talent Search testing protocol and then subjected to a sport specific test battery consisting of 5 anthropometric and 16 physical and motor variables. The results indicated that mean anaerobic power output, acceleration, body mass, reaction time, iliopsoas flexibility, speed endurance, sitting height, age and push-ups contributed to 86.5% of the total variance to performance in the 100 meter sprint. Horizontal jump, age, acceleration and ankle flexibility contributed to 81.5% of the total variance in the performance of the long jump. These anthropometric, physical and motor abilities can enable the coach and Sport Scientist to classify the talent of 10-15 year-old boys for sprinting and long-jumping athletes, and then to develop the potential of the athlete accordingly.

Key words: Talent identification; Sprinting; Long-jump; Prediction of performance; Physical and motor fitness; Kinanthropometry.

INTRODUCTION

The outcome of competitions is often seen to be the best form of talent identification, seeing that the most talented will normally excel in competitions (Peltola, 1992). The possibility of the child from a disadvantaged background participating in competitions is often limited due to a factor such as lack of transport (Burnett & Hollander, 1999). It can therefore cause potential athletes from these communities to not receive the necessary exposure to sports gatherings; and therefore they can become lost for sport. In addition, the poverty-stricken circumstances in disadvantaged communities also further contribute to a lack of sport development. Chappel (2004) points out that communities, especially those in rural areas, are often limited to self-made facilities in that financial resources are needed to address the immediate social crises.

Since development of sport talent takes several years and specialization in sprinting and long-jump can start at ages 14-16 and 17-19 respectively (Bompa, 1999), it is important to already establish at these ages which physical, motor or anthropometric determinants contribute to performance ability in sprinting and long-jump. In so doing, the talented can be identified and exposed to appropriate development programmes. Several studies regarding prediction functions on different sports codes for boys have already been documented. This includes football (Sawyer *et al.*, 2002) soccer (Badenhorst & Pienaar, 2000) and rugby (Carlson *et al.*, 1994; Pienaar *et al.*, 1998; Gabbett, 2002). When it comes to athletics, only one study could be found which was done on 12-18 year-old boys (Headley, 2000) and a few on adult and/or