Relationships between body composition, physical fitness and Developmental Coordination Disorder among 10-12 year old girls in a diverse African nation: Thusa Bana-study

Running title: Body composition, physical fitness and DCD

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ABSTRACT

The objective of the study was to determine relationships between body composition, physical fitness and Developmental Coordination Disorder (DCD) among 10-12 year old girls. A cross sectional design, including a stratified random sampling of girls within each age and ethnic group living in the North-West province of South Africa. The participant consisted out of 346 females, aged 10 to12-years, proportionally representing all ethnic groups. Developmental Coordination Disorder was determined by the Movement Assessment Battery and arm strength endurance by flexed arm hang. Body mass index and percentage body fat determined overweight and obesity. Percentage body fat had the biggest contribution to the Developmental Coordination Disorder classification in white and Indian girls and their fat percentages were the highest within the moderate and severe classification groups. Girls without Developmental Coordination Disorder showed the best arm strength, while the white and coloured girls showed a tendency that the more severe the motor problem, the poorer the arm strength endurance. Fat percentage might play a role in Developmental Coordination Disorder in girls. Associations between weight and Developmental Coordination Disorder are bigger in some ethnic groups, while this relationship is negatively associated with motor competency although not different in each of the ethnic groups in the different classifications.

Keywords: obesity; girl; motor; Developmental Coordination Disorder