

INFLUENCE OF BODY COMPOSITION ON THE PREVALENCE OF POSTURAL DEFORMITIES IN 11 TO 13 YEAR OLD BLACK SOUTH AFRICAN CHILDREN IN THE NORTH WEST PROVINCE

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ABSTRACT

The aim of this study is to investigate the influence of body composition on the prevalence of postural deformities among Black South African children aged 11 to 13 years in selected schools in the Potchefstroom area in the North West Province. The sample (n = 168) consisted of 47 eleven year olds, 58 twelve year olds and 63 thirteen year old school children. Of the total number of students examined (168), 79 were boys, and 89 were girls. Anthropometric (BMI and percentage body fat) and body posture measurements were performed. A posture grid and the New York Posture test were used for all postural assessments. In boys, Spearman Rank Order Correlations demonstrated a statistical significant ($p < 0.05$) association between protruding abdomen and BMI, and also for the association of winged scapulae and protruding abdomen with percentage body fat. A large practical significant difference ($d \approx 0.8$) in BMI and percentage body fat was demonstrated between the different categories of winged scapulae and lordosis. In girls, Spearman Rank Order Correlations demonstrated a statistical significant association ($p < 0.05$) between BMI and percentage body fat with winged scapulae, protruding abdomen and flat feet. A large practical significant difference ($d \approx 0.8$) in BMI was demonstrated between the different categories of winged scapulae and flat feet and also in percentage body fat with regards to the different categories of flat feet. In summary the findings suggest that, winged scapulae and lordosis in boys, and flat feet in girls, are the postural deformities with the strongest association with BMI and percentage body fat. This study illustrates the need for a further investigation of more profound studies investigating factors such as BMI and percentage body fat.

Key words: Postural deformities; BMI; Fat%; Body composition; South Africa.

INTRODUCTION

Good posture is considered to be a measure of good musculoskeletal health (Banfield, 2000; McEvoy & Grimmer, 2005). Bad posture can alter the joint load distribution and the loading on these joints that are not normally aligned can lead to articular cartilage degeneration and