

## DIFFERENCES IN BODY COMPOSITION AND PREVALENCE FOR POSTURAL DEVIATIONS IN GIRLS FROM TWO RACIAL GROUPS IN SOUTH AFRICA

Suzanne STROEBEL\*; J. Hans DE RIDDER\*\*; Cilas J. WILDERS\*\* &  
Suria M. ELLIS\*\*\*

\*Department of Sport, Rehabilitation and Dental Sciences, Tshwane University of Technology,  
Pretoria, Republic of South Africa

\*\*School of Biokinetics, Recreation and Sport Science, North-West University, Potchefstroom,  
Republic of South Africa

\*\*\*Statistical Consultation Service, North-West University, Potchefstroom,  
Republic of South Africa

### ABSTRACT

Little is known about ethnic differences in developing countries such as South Africa, particularly with regard to prevalence of postural deviations and body composition profiles. The aim of this study is to compare the prevalence rate for postural deviations and body composition status among two racial groups in South Africa. The sample ( $n = 216$ ) consisted of 89 African girls and 127 Caucasian 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. Independent t-tests and effect sizes demonstrated that in the 11 and 13 year old group the Caucasian group had a significantly higher ( $p < 0.05$ ) BMI and percentage body fat than the African group. There were no statistical and practical significant differences in prevalence rate between age groups. The African group had higher prevalence rates in most of the deviations, with winged scapulae, kyphosis, protruding abdomen and lordosis demonstrating a statistical significance ( $p < 0.05$ ) and practical significance (large effect) with regard to the Caucasian group. The higher prevalence rate for uneven shoulders in the Caucasian group was statistically significant ( $p < 0.05$ ) and also visible (medium effect) with regard to the African group. The higher prevalence rate for pronated feet in the African group was statistically significant ( $p < 0.05$ ), and also visible (medium effect) with regard to the Caucasian group. The prevalence rate was high in both groups and the lack of awareness and the results of this study should support the development of more responsible educational and screening programmes in both rural and urban school environments. The identification of postural deviations is important for prevention, to encourage a healthier posture for children and to prevent resulting painful syndromes.

**Key words:** Postural deviations; BMI; Fat%; Body composition; Ethnic; South Africa.