INTRODUCTION AND PURPOSE

According to data from the 2006-2007 National Survey of Children’s Health, 31.7% of children in the U.S. had a body mass index for age percentile (BMI percentile) above 85% and 16.2% had a BMI z-score over 95%. The prevalence of overweight and obesity is even higher in minority groups. For children, current physical activity recommendations are to engage in 60 minutes of moderate to vigorous recreational activity daily. Children who are overweight and obese may have difficulty performing recommended levels of physical activity due to musculoskeletal impairments brought on by high BMI and adiposity. The purpose of this study was to examine differences in strength, motor proficiency and walking endurance among healthy weight, overweight and obese children through an extracurricular screening of middle school students in two schools in Miami-Dade County. The relationships between (BMIz-score) and impairment measures were examined as well.

SUBJECTS

Eighty-six middle school children participated in the screening. Inclusion criteria were children between the ages of 10-15, regardless of weight and fitness level, who attended the target schools, and were available and willing to participate in the after-school screening activity. Exclusion criteria included the presence of physical disabilities, congenital cardiovascular pathology, and children with respiratory problems.

METHODS

This study utilized a cross sectional design and was approved by the IRB at the University of Miami's library and corridors by physical therapists and graduate physical therapy students. Children's and the Miami-Dade County Public School Systems. Children were tested in a circuit format in the school's library and corridors by physical therapists and graduate physical therapy students. Children's BMI for-age percentiles were calculated using standard procedures and standardized tables from the Center for Disease Control. Children were categorized as healthy weight if BMI for age was greater than 5%, and less than 85% and overweight if BMI for age was greater than or equal to 85% and less than 95%, and obese if BMI for age was greater than or equal to 95%. ANOVA and chi-square statistics were used to determine differences between study groups. Pearson’s correlation statistic was used to examine the relationship between BMI for age and physical performance measures.

CONCLUSION

This study demonstrated that obese overweight children tend to have greater impairments and activity limitations compared to healthy weight children. Specifically, obese children have greater impairments in motor proficiency, strength, and endurance when compared to healthy weight children. Higher BMI for age percentile had a negative moderate correlation with motor proficiency, trunk strength and lower extremity strength among overweight children. When examining motor proficiency, the trunk percentile for healthy weight children in this sample was 33%, indicating an average ability in motor proficiency while obese children's mean BOT-2 percentile had a negative moderate correlation with motor proficiency, trunk strength and lower extremity strength among overweight children. These findings lend support to the Vision 2020 of the APTA as physical therapists become practitioners of choice by consumers for health and wellness needs and Healthy People 2020 objectives as pediatric obesity continues to be an important public health priority.

CLINICAL RELEVANCE

The findings of this study have important clinical relevance for physical therapists, who are uniquely qualified to assess the need for modifications in activity and exercise for children with musculoskeletal impairments and mobility limitations. Physical therapists may play an important role in the management, reversal and prevention of childhood obesity in the school based setting. They may offer an important contribution in identifying barriers and enabling children to find strategies to change health behaviors. These findings lead support to Vision 2020 of the APTA as physical therapists become practitioners of choice by consumers for health and wellness needs and Healthy People 2020 objectives as pediatric obesity continues to be an important public health priority.

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