Healthier Options for Public Schoolchildren Program Improves Weight and Blood Pressure in 6- to 13-Year-Olds

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ABSTRACT
Childhood obesity and related health consequences continue to be major clinical and public health issues in the United States. Schools provide an opportunity to implement obesity prevention strategies to large and diverse pediatric audiences. Healthier Options for Public Schoolchildren was a quasiexperimental elementary school-based obesity prevention intervention targeting ethnically diverse 6- to 13-year-olds (kindergarten through sixth grade). Over 2 school years (August 2004 to June 2006), five elementary schools (four intervention, one control, N = 2,494, 48% Hispanic) in Osceola County, FL, participated in the study. Intervention components included integrated and replicable nutrition, physical activity, and lifestyle educational curricula matched to state curricula standards; modified school meals, including nutrient-dense items, created by registered dietitians; and parent and staff educational components. Demographic, anthropometric, and blood pressure data were collected at baseline and at three time points over 2 years. Repeated measures analysis showed significantly decreased diastolic blood pressure in girls in the intervention group compared to controls (P<0.05). Systolic blood pressure decreased significantly for girls in the intervention group compared to controls during Year 1 (fall 2004 to fall 2005) (P<0.05); while not statistically significant the second year, the trend continued through Year 2. Overall weight z scores and body mass index z scores decreased significantly for girls in the intervention group compared to controls (P<0.05 and P<0.01, respectively). School-based prevention interventions, including nutrition and physical activity components, show promise in improving health, particularly among girls. If healthy weight and blood pressure can be maintained from an early age, cardiovascular disease in early adulthood may be prevented.


The prevalence of obesity remains high among all age and racial groups in the United States, with a disproportionate rise among African Americans and Hispanic/Mexican Americans (1-3). Because obesity and related chronic disease risk factors are relatively stable characteristics that track from childhood into adulthood (4-10), the identification of children and adolescents with elevated risk factors is of great interest from both clinical and public health standpoints. Childhood weight gain, even among children considered in the normal weight category, is strongly associated with risk of future cardiovascular disease (11,12). In addition, childhood obesity can lead to neurologic, endocrine, cardiovascular, pulmonary, gastrointestinal, renal, and musculoskeletal complications (13), and children with overweight and obesity are more likely to have low self-esteem, higher rates of anxiety disorders, depression, and other psychopathology, which in turn may affect academic performance (14-17).

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