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Introduction

Childhood obesity has emerged as a national epidemic – and one with serious short- and long-term personal health, medical system and economic consequences. The prevalence of obesity more than doubled among U.S. children ages 6 to 11 between 1980 and 2006, while the rate for those from ages 12 to 19 more than tripled.1

One of the states that has been most affected by this increase is Kentucky. Its 2007 adolescent obesity rate of 15.6 percent exceeded all but one border state (see Figure 1) and was the fifth-highest nationally.2 The literature suggests that participation in school-based physical education (PE) helps improve students’ overall well-being, particularly with regard to controlling weight and reducing fat.3 However, as of 2006, Kentucky and seven other states – Alaska, Colorado, Florida, Michigan, Oklahoma, Oregon and South Dakota – did not require that physical education be taught in elementary or middle schools.

This study analyses whether required physical education in elementary and/or middle school is associated with lower rates of obesity among U.S. high school students, with an emphasis on those living in Kentucky, a primarily rural state.

Figure 1: High School Students’ Obesity Rates in the U.S., Kentucky and Nearby States, 2007

Table 1: Bivariate Correlations Between Selected Nutrition and Physical Activity Behaviors and Obesity Among U.S. High School Students, 2007

Findings

No significant difference was detected between the mean adolescent obesity rates in states that require physical education in lower grades and those that do not (t = 2.61, p = .01). In fact, a higher mean adolescent obesity rate was found among states that require physical education in elementary and/or middle schools (12.6 percent, n = 34) than those that do not (12.3 percent, n = 6).

Explanations for this finding include skewed data related to the small sample of states that do not require PE in lower grades; physical education being offered at many schools in which it is not required; and a somewhat recent increase in the proportion of school districts requiring physical education for preschoolers within certain states.

The results presented here suggest there is no relationship between required physical education in lower grades and states’ adolescent obesity rates. Also, the study found a lesser association between obesity rates and adolescents’ daily participation in physical education classes than attending a PE class only one or more times per week. The latter result might be partly attributable to a comparatively small sample, as less than a quarter of U.S. high school students attend a physical education class five times per week.

These findings indicate that adolescent obesity is multifactorial. That is, high school students’ prior and current participation in required physical education are just two of many aspects to consider. Indeed, significant associations were found between adolescent obesity and two additional physical activity-related behaviors: watching TV for three or more hours per day (positive) and meeting recommended levels of physical activity, regardless of the setting (negative).

This study emphasizes the need to increase children’s levels of physical activity in all settings. It also demonstrates the need for county-level adolescent obesity data, which would allow public officials to target interventions to the areas of greatest need.

Table 2: A Comparison of Nutrition and Physical Activity Behaviors Between Kentucky and U.S. High School Students, 2007

Table 3: Nationwide Ordinary Least Squares Regression Results – Adolescent Obesity Rates

Conclusions/Recommendations

Background

The Kentucky General Assembly did not pass bills filed in 2006, 2007 or 2008 that would have required specific amounts of physical activity within the state’s public elementary and middle schools. Most of Kentucky’s elementary schools offer physical activity and physical education, “but some do not and there is a great deal of variation in the amount and quality from school to school.”4 Reports further indicate that most students take one semester of PE while in middle school, although it is not a requirement. Two school-based physical activity bills introduced during the 2009 legislative session did not advance beyond their respective chamber’s Education Committee.

Figure 2: States’ Adolescent Obesity Rates as a Function of Students’ TV Viewing Habits, 2007

Works Cited


Table 4: Nationwide Ordinary Least Squares Regression Results – Adolescent Obesity Rates

Note: For each test of statistical significance, p ≤ .01.


Note: Virginia did not participate in the survey.


Figure 3: A 20-Year Projection of Kentucky High School Students’ Obesity Rates

Note: For each test of statistical significance, p ≤ .01.


