

**Associations Between Physical Activity and Obesity in a Multi-Ethnic Sample of Adolescent Girls**

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ABSTRACT

**Background:** The increasing prevalence of obesity and low participation in physical activity among young racial/ethnic minorities constitute serious public health issues. Research has shown that "overweight" and "obese" individuals have increased risks for the following conditions: coronary heart disease, Type 2 diabetes, cancers (endometrial, breast, and colon), hypertension, dyslipidemia, stroke, liver and gallbladder disease, sleep apnea and respiratory problems, osteoarthritis (a degeneration of cartilage and its underlying bone within a joint), and gynecological problems (abnormal menses, infertility). **Purpose:** Because chronic diseases disproportionately impact ethnic and racial minorities, this study examined the association between physical activity and body mass index (BMI) in a multi-ethnic group of adolescent girls. **Methods:** In this cross-sectional study of 188 adolescent girls ages 14-17 years, BMI was calculated as body weight in kilograms divided by height in meters squared. Energy expenditure of activity was measured using a 24-hour recall self-administered activity checklist (SAPAC). **Results:** Analysis of variance showed a significant inverse association between BMI and vigorous physical activity ( $p = 0.02$ ), no significant associations with light ( $p = 0.84$ ), and moderate ( $p = 0.68$ ) physical activity. There was an 11% difference between obese and normal weight, and 4% difference between overweight and normal weight groups in weighted vigorous physical activity participation. Ethnic differences indicated that non-Hispanic white girls participated more in vigorous physical activity than both Mexican American and African American girls. **Conclusion:** Physical activity programs should focus on promoting moderate to vigorous activities among adolescent girls taking into consideration sociocultural and economic factors that appear to influence levels and types of activity in this population. In addition, supportive social networks consistent with physical activity contexts of this age group should be promoted.

KEY WORDS: Self-Administered Physical Activity Checklist (SAPAC), Metabolic Equivalents