Multicontextual correlates of energy-dense, nutrient-poor snack food consumption by adolescents

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BACKGROUND

• Energy-dense, nutrient-poor snack food consumption may contribute to obesity and supplant foods that are recommended for good health.

• There is a need for information to direct the development of strategies to reduce energy-dense snack food consumption. Few studies have made use of the social-ecological model to inform the investigation of influences on consumption among ethnically/racially diverse adolescents.

PURPOSE

• Identify individual-level personal and behavioral factors; characteristics of proximal environments (home/family, peer), and characteristics of distal environments (school, neighborhood, media) that are associated with energy-dense snack food consumption.

• Determine the overall and relative contributions made by individual and environmental contexts for explaining energy-dense snack food consumption among ethnically/racially diverse adolescent sample.

METHODS & DESIGN

• As part of the EAT 2010 (Eating and Activity in Teens) study, surveys and food frequency questionnaires were completed in 2009-2010 by 2,540 adolescents (54% girls, mean age=14.5±2.0, 80% nonwhite) enrolled at Minneapolis-St. Paul, Minnesota public middle schools and high schools.

• Data representing characteristics of adolescents’ environments were collected from parents/caregivers, friends, school personnel, Geographic Information System sources, and a content analysis of favored TV shows.

• Daily servings of energy-dense snack food were estimated by reported consumption of 21 common snack food items, including potato chips, cookies, and candy.

• Multiple regression models were used to simultaneously examine a total of 34 factors in terms of their association with estimated daily servings. Models stratified by gender were controlled for adolescent age, ethnicity/race, and socioeconomic status; an overall model was also examined that additionally included gender as a covariate.

RESULTS

• Adolescents reported consuming a mean of 2.2 daily servings of common energy-dense snack foods.

• The factors found to be significantly associated with higher energy-dense snack food intake represented individual attitudes/behaviors and characteristics of home/family, peer, and school environments. Statistically significant associations are summarized in the Figure.

• All together, the 34 variables included in the overall mutually adjusted model explained 25.5% of variance in adolescent consumption of energy-dense snack foods. The proportions of variance explained by each block were as follows: 21.6% individual, 16.0% home/family, 9.3% peer, 9.0% school, 7.5% neighborhood, and 7.3% screen media.

APPLICATIONS

• Results suggest that nutrition professionals should work with young people to support them in preparing low-cost, nutrient-dense snacks and limiting overall screen time as well as the consumption of snacks while watching television.

• Nutrition professionals should also work with parents to help them avoid restrictive feeding practices and instead consider targeting peer norms to encourage the selection of nutrient-dense snack food choices and policies that limit access to nearby fast-food restaurants.

• In school-based settings, nutrition professionals should consider targeting peer norms to encourage the selection of nutrient-dense snack food choices and policies that limit access to nearby fast-food restaurants.

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Figure

Statistically significant associations are shown in bold font; a direct association is indicated by a “+” sign and an inverse association by a “-” sign. Associations that were found only in a gender-stratified model are indicated by “boys” or “girls”. All analyses were adjusted for ethnicity/race, age, and socioeconomic status.