

Research and Professional Briefs

Are Adolescents' Perceptions of Dietary Practices Associated with Their Dietary Behaviors?

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ABSTRACT

Despite interventions designed to change behavior, many adolescents continue to consume unhealthy foods. Dietary patterns are important for disease prevention, making it necessary to understand the reasons for these poor choices. This cross-sectional study explored the relationship between perception of dietary practices and dietary behaviors among adolescents. Participants (n=15,283; mean age=15 years; 50.7% female) completed the 2004-2005 Texas School Physical Activity and Nutrition survey. Perception of dietary practices included fat content of foods usually eaten and healthiness of usual eating habits. Dietary behavior was measured by self-report of foods eaten the day before survey administration. Composite scores of unhealthy and healthy eating were created. Regression analyses examined whether perception of dietary practices was consistent with actual dietary behavior, controlling for sex, grade, and race/ethnicity, and accounting for the complex sampling design. Higher perceived fat content was associated with increased consumption of unhealthy foods, while higher perceived healthiness of eating was associated with increased consumption of healthy foods. For perceived fat content, the difference in the Healthy Eating Index between extreme categories was 26% ($P<0.001$), while the difference in the Unhealthy Eating Index between extreme categories was 81% ($P<0.001$). For perceived healthiness, the difference

in the Healthy Eating Index between extreme categories was 23% ($P<0.001$), while the difference for the Unhealthy Eating Index was 44% ($P<0.001$). Self-perceptions of dietary practices were significantly associated with dietary behaviors, indicating awareness about the relative nutrient content of foods consumed. Interventions that move beyond dietary knowledge and create changes in the social and physical environment are needed.

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Prevention of overweight and obesity has been a goal of national public health policy for several years, yet prevalence rates continue to remain high among youth (1). Recent data suggest that 31.7% of children and adolescents between the ages of 2 and 19 years are classified as either overweight or obese (1). Overweight and obesity have many health consequences, making prevention particularly important. Studies have shown that overweight youth are more likely to be overweight or obese in adulthood (2,3), which, over time, increases an individual's risk of developing chronic diseases. For example, type 2 diabetes, heart disease, and certain forms of cancer have all been associated with obesity (4,5).

Dietary behavior is closely related to overweight and obesity among children (6,7). Establishing healthy dietary patterns at an early age is particularly important because behaviors initiated in childhood and adolescence are likely to be carried into adulthood (8). Dietary guidelines for healthy eating have been established (9) and encouraged in interventions that have been designed to improve nutrition knowledge. However, research has found that unhealthy eating among children and adolescents remains problematic because many youth continue to choose food and beverage items that are of poor nutritional value (10-13).

Many youth consume diets that are too high in fat, saturated fat, cholesterol, added sugars, and sodium, and too low in fruits and vegetables (10-12). Data from the 2009 Youth Risk Behavior Surveillance System found that only 22.3% of youth met the recommendations for fruit and vegetable intake (13). Recent longitudinal research found that fruit and vegetable consumption decreased by an average of 0.6 servings per day between middle to late adolescence, among both girls and boys (12). Moreover, data has shown that only 14.5% of youth report consuming three or more glasses of milk per day, whereas 29.2% of youth report drinking at least one can of soda per day (13).

Given that many adolescents eat unhealthy diets, it is

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important for researchers to understand why dietary behaviors remain poor despite interventions designed to change behavior. Past research has found that adolescents appear to have considerable knowledge regarding healthy dietary behaviors, yet having this knowledge does not always translate into healthy food choices (14,15). A greater understanding of why some students continue to have unhealthy dietary behaviors would be useful for intervention development because these individuals may have barriers to healthy eating that are particularly salient and unique from their peers.

Because dietetics practitioners continue to promote the importance of dietary behavior through nutrition education programs, it is important to learn whether adolescents are aware of the nutrient content of the foods they eat and, consequently, whether they believe they are making healthy food choices. This information will help to determine the appropriate next steps for nutrition interventions that can help reduce the prevalence of obesity among youth. Thus, research that explores whether perception of dietary practices is in alignment with actual dietary practices is needed. The purpose of this study was to explore the relationship between self-perception of dietary practices and actual dietary behaviors among 8th- and 11th-grade students from a large, multiethnic statewide surveillance system. It was hypothesized that adolescents' perceptions of their dietary practices would be associated with their actual dietary behaviors.

METHODS

Study Design

Data for this study are from the School Physical Activity and Nutrition survey conducted by the University of Texas School of Public Health and funded by the Texas Department of State Health Services in the state of Texas in 2004-2005. The School Physical Activity and Nutrition survey is a statewide surveillance system used to monitor the prevalence of overweight and obesity in school-aged children in Texas. The cross-sectional study design used a two-stage, stratified, cluster sample, and was designed to be representative of all 8th- and 11th-grade students attending public schools in Texas. These two grades were selected because they were representative of middle school (middle adolescence) and high school (late adolescence); also, they represented two developmental stages (puberty and post-puberty). In the 2004-2005 academic year, Texas was divided into 11 administrative Health Service Regions (16). Schools that had fewer than 75 students or were charter, magnet, or special schools were excluded from the sampling frame. Each Health Service Region was divided into three strata: urban center, other urban/suburban, and rural (17). Schools were randomly selected from Health Service Regions or from school districts, depending on the strata, and then at least two classes within each school were selected.

Questionnaires consisted of 74 items and were used to collect self-reported data on students' dietary behaviors, nutrition knowledge and perceptions, and physical activity. Versions of these questionnaires, including all measures used in the present study, have been evaluated previously for reproducibility and validity with this age group (18-20). Further details of the School Physical Ac-

tivity and Nutrition study design and questionnaire are available elsewhere (21,22). Active or passive parental consent was obtained prior to survey administration by sending forms home through the school, and children completed a child assent form. Questionnaires were completed by students in their respective classrooms, or where the school had space (ie, library), and collected by staff at completion. The Committee for the Protection of Human Subjects at UT Health (University of Texas Health Science Center at Houston) as well as the Texas Department of State Health Services Institutional Review Board and participating school districts approved the study protocol.

Measures

Demographic Factors. Demographic information was obtained by student self-report. Sex was denoted as male or female and students selected race/ethnicity from a list of seven categories. Grade was denoted as either 8th or 11th. Body mass index was calculated using height and weight (as kg/m²) information collected by trained study staff. The school-level socioeconomic status variable, obtained via the Texas Education Agency using data for the same school year, was defined as the proportion of enrolled students who were eligible for free or reduced-cost meals or who were otherwise economically disadvantaged.

Dietary Behaviors. Dietary behavior was measured by self-report of foods eaten the day before survey administration. Twenty-two items were used to assess consumption of grains, fruits, vegetables, beans, meats, milk, oils and fats, snack foods, and sugar-sweetened beverages. An example item is "Yesterday, how many times did you . . . eat whole wheat or dark bread, buns, bagels, tortillas, or rolls; or corn tortillas?" Response options were "none," "one time," "two times," "three times," "four times," or "five or more times." Composite scores of healthy and unhealthy eating were also created to measure overall healthy and unhealthy eating behaviors. The Healthy Eating Index summed responses to 12 questions measuring consumption of grains, fruits, vegetables, milk, and beans, with a possible response range of 0 to 36. The Unhealthy Eating Index summed responses to nine questions measuring consumption of meats, oils and fats, snack foods, and sugar-sweetened beverages, with a possible response range of 0 to 27.

Dietary Perceptions. Perception of dietary practices included fat content of foods usually eaten and healthiness of usual eating habits. Perception of fat content of foods usually eaten was measured with one question, asking "Are the foods you usually eat . . ." with response options of "high in fat," "some high in fat, some low in fat," and "low in fat." Perception of healthiness of usual eating habits was measured with one question, asking "When you think about the way you usually eat, would you say that your eating habits are . . ." Response options were "much healthier than those of most people my age," "somewhat healthier than those of most people my age," "about the same as those of most people my age," "somewhat less healthy than those of most people my age," and "much less healthy than those of most people my age." Both dietary perception measures were coded so that

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