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Obesity Prevention in Early Adolescence: Student, Parent, and Teacher Views

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ABSTRACT

BACKGROUND: Obesity is a significant health problem among today's youth; however, most school-based prevention programs in this area have had limited success. Focus groups were conducted with seventh- to eighth-grade students, parents, and teachers to provide insight into the development of a comprehensive program for the prevention of adolescent obesity: the Teen Eating and Activity Mentoring in Schools project (TEAMS).

METHODS: Questions addressed (1) beliefs about the relationship between early adolescent behavior and health; (2) early adolescents' physical activity habits, preferences, influences, and barriers; (3) early adolescents' dietary habits, preferences, influences, and barriers; and (4) recommendations for interventions to promote physical activity and healthy eating in early adolescence.

RESULTS: Qualitative analyses revealed that early adolescents had a good understanding of the relationship between their behavior and their health, although they had a limited understanding of what constitutes healthy eating. Youth participants reported preferences for a number of healthy foods and physical activities, but identified numerous barriers preventing their engagement. The major difference between students, parents, and teachers reflected the operation of the fundamental attribution error with early adolescents attributing their unhealthy behaviors to situational factors, teachers blaming parents, and parents blaming their children.

CONCLUSIONS: Implications of these findings for the development of school-based, integrated strategies for obesity prevention among early adolescents are discussed.

Keywords: obesity, adolescence, parents, school teachers, focus groups

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Overweight and obesity pose significant health problems for adolescents. Approximately 17% of US youth are overweight, and 16% are at risk of becoming overweight.[1] Rates of overweight children have increased 45% in the last decade and 3-fold since 1980.[2] The consequences of adolescent obesity are well known, including risk for numerous medical conditions, dysfunctional eating behaviors, and impaired social/emotional development.[3]

Given the impact of overweight and obesity on today's adolescents, programs have been developed to prevent adolescent obesity. Most are school-based, focusing on influencing physical activity and/or dietary habits. Such interventions have had limited success. They may demonstrate short-term effects on the targeted behavior(s), but rarely demonstrate sustained behavioral change or positive impacts on youth weight.[4–6] In a recent meta-analysis of 64 prevention programs, 79% showed no statistically significant effects on body mass index (BMI).[5] The average effect size across all studies was $r = .04$, an effect size ''which would be considered trivial by most researchers and clinicians''[5(p681)].

Reviewers examining the characteristics of successful programs draw different conclusions.[5–7] However, most agree that successful programs intervene at multiple levels including schools, families, and communities.[4,8,9] This is supported by the success of a recent comprehensive intervention for first- to third-grade children that significantly impacted BMI. The intervention involved school food services, classroom teachers, after-school programs, parents, medical professionals, media, and local restaurants.[10]

Although numerous focus group studies have examined nutritional and physical activity issues in adolescence (see discussion), no study has directly compared the responses of adolescents, parents, and teachers on the issues relevant to the proposed intervention. The purpose of the current study was to inform the development of a multistrategy, school-based obesity prevention program for early adolescents (seventh and eighth graders). Bioecological systems theory[11] and self-determination theory[12] will guide interventions designed to prevent obesity that will engage early adolescents, parents, and teachers. Therefore, the focus groups explored influences on eating behavior and physical activity at various levels identified in Bronfenbrener's[11] bioecological theory (ie, micro-system, meso-system, exo-system, and macro-system). Specifically, we assessed individual influences (eg, taste preferences), social influences (eg, parent and peer influences), and larger contextual influences (eg, school and community influences) on early adolescent health. Self-determination theory guided the development of questions as well, examining possible environmental factors that contribute to intrinsic versus extrinsic motivations for engaging in healthy behaviors. Separate focus groups were conducted with seventh- to eighth-grade boys, seventh- to eighth-grade girls, teachers, and parents.

METHODS

Subjects

Eight focus groups were conducted with seventh to eighth-grade boys, seventh- to eighth-grade girls, teachers, and parents from 2 middle schools in the Pacific Northwest (4 groups per school) in spring 2007. These schools are representative of the 6 middle schools in the urban school district. The participants were 5 boys, 11 girls, 11 teachers, and 6 parents (2 fathers and 4 mothers), and they were obtained through the assistance of the school principals. Children and parents were from different families. Consistent with the school populations, most participants were middle-class and European American. Three students were African American. Although physical measurements were not obtained, most students appeared to be of normal weight with 2-3 students appearing overweight. Students ranged from 12-14 years of age. Participants per group ranged from 2-8 (mean = 4).

Procedures

Focus group data were collected from students, teachers, and parents during the formative stage of the Teen Eating and Activity Mentoring in Schools (TEAMS) project. The TEAMS project will involve nutrition education, programs to increase physical activity, and school environmental changes. Focus groups were conducted at the schools and facilitated by the researchers. Standard focus group procedures were followed.[13] Participants read and signed assent forms (early adolescents) or consent forms (parents and teachers). Ground rules for the focus groups were discussed (eg, value the comments of all and allow all to speak). Participants were informed there were no ''right or wrong answers'' and their responses would be kept confidential. Groups were tape recorded and transcribed verbatim. Focus groups lasted about 1 hour. Parent and youth participants received a nominal gift for their participation (a choice of items from the university bookstore—eg, mug, water bottle). All procedures were approved by the university's institutional review board. The focus group questions are in Table 1.

Transcripts were independently coded by 3 investigators. Investigators identified general coding categories and placed utterances into these categories. Coding was an emergent process and new categories were added as identified.[14] The investigators identified a final list of categories by consensus, and participant responses were sorted into these categories independent of the questions that elicited the

Table 1. **Focus Group Questions**

I. Conceptions of Health and Wellness
   a. What does it mean for a seventh to eighth grader to be healthy?

II. Relationship Between Behavior and Health
   a. What can you do to help yourself (your child) be healthy? (children and parents only)
   b. Are there things that prevent you from helping your child be healthy? (parents only)

III. Adolescents' Physical Activity Habits, Preferences, Influences, and Barriers
   a. How important is it for your child to be physically active to be healthy? (parents only)
   b. Are you (Is your child, Are youth in this school) physically active? Why or why not?
   c. Which physical activities do you like? Not like? (children only)
   d. What are some things that you do to help your child be physically active? (parents only)
   e. What keeps you (teens in this school, from helping your child) from being physically active sometimes?
   f. Describe any physical activities you do together as a family. (parents only)
   g. Who mostly decides how active you are—your family, the school, yourself, or your friends? (children only)
   h. How much is your physical activity affected by your friends? Teachers? Parents? TV? (children only)

IV. Adolescents' Dietary Habits, Preferences, Influences, and Barriers
   a. How important is it for your child to eat well to be healthy? (parents only)
   b. What foods do you like that are healthy for you? (children only)
   c. What are some examples of healthy and unhealthy foods? (children only)
   d. Do you (your child, students in this school) try to eat healthy foods? Why or why not?
   e. What are some things that you do to help your child eat more healthy foods? (parents only)
   f. What keeps you (teens in this school, from helping your child) from eating healthy sometimes?
   g. Who mostly decides what you eat—your family, the school, yourself, or your friends? (children only)
   h. How much is your eating affected by your friends? Teachers? Parents? TV? (children only)

V. Interventions
   a. What are some ways we might help you (your child, students in this school) be healthier?
   b. What could we do to help you (your child, teens in this school) be more physically active?
   c. What could we do to help you (your child, students in this school) eat more healthy foods?
   d. Is there anything else you would like to tell us about health, physical activity, or eating?

responses. The general categories corresponded to the sections of the results section below (eg, ''healthy and unhealthy foods''). The subcategories are described within each section (eg, ''food preferences''). Because no systematic differences emerged between boys' and girls' focus groups, gender differences are not presented.

RESULTS

Concepts of Health and Wellness

Definitions. Members of all groups focused on lifestyle factors in their definitions of health, expressing that healthy adolescents were those who ate right, were active, and got enough sleep. Unhealthy adolescents were those who were overweight, underweight, tired, or who had little energy. In discussing the relationship between behavior and health, adolescents focused on short-term consequences such as energy level, athletic performance, and appearance. No students mentioned the long-term health consequences of eating and activity patterns.

Healthy and Unhealthy Foods

Definition of Healthy and Unhealthy Foods. Early adolescents gave examples of healthy and unhealthy foods. Unhealthy foods included energy-dense and/or high-fat snack foods such as candy, cookies, ice cream, potato chips, and sweetened drinks, and high-fat entrées such as pizza, tacos, burritos, burgers, and macaroni and cheese. Students also mentioned low-nutrient, high-salt, high-carbohydrate snacks such as popcorn and pretzels as examples of unhealthy foods. Most examples of healthy foods were fruits and vegetables. Less frequent examples were ''healthy'' snacks (ie, granola bars, crackers, peanut butter), selected dairy products (ie, cheese, milk, and yogurt), breads (ie, bagels, bread), soups, and a few dinner entrées (ie, steak and shrimp, seafood, Chinese food). Students disagreed about whether juices, milk, and ''energy drinks'' were healthy or unhealthy foods.

Food Preferences. When asked about healthy foods they liked to eat, early adolescents mentioned mostly fruits, and some vegetables, including salads. Some of the healthy snacks and dinner entrées listed earlier were mentioned as well. Early adolescents listed many unhealthy foods that they enjoyed, mostly the energy-dense and/or high-fat snack foods mentioned earlier. The ''healthy'' foods that students did not like included certain fruits and vegetables (eg, bananas, grapefruit, tomatoes, asparagus, peas, and cooked carrots), and certain packaged foods (ie, cottage cheese, applesauce, fruit cups, and trail mix). Finally, students made comments (both positive and negative) about school lunches. Positive comments referenced food selections offered (eg, Caesar rolls, pretzels, Sun Chips). Negative comments referenced how some foods were ''greasy'' (eg, fries and pizza). The primary reasons early adolescents gave for food choices were taste and whether or not foods were filling.

Physical Activity Preferences

Early adolescents described the physical activities they enjoyed. The most common activities were organized sports (eg, soccer, basketball, baseball, gymnastics), snow sports (eg, skiing, snowboarding, sledding), bike riding, rollerblading, skateboarding, swimming, trampolines, and walking. Although students varied in the activities they liked, the only activity several students did not like was running. Very few students mentioned exercising—for most, physical activity was done in the context of ''having fun.''

Influences on Health Behaviors

Across all 3 areas (health, healthy eating, and physical activity), parents, teachers, and students identified the same influences on youth's health behaviors: parent, friend, and school influences. Parental influences included modeling, providing opportunities, encouraging healthy eating and physical activity, and setting limits on sedentary behavior and junk food consumption. Several mentioned concerns about parents who provided poor role models of eating and activity. Friends were seen to have their influence through modeling and shared activities (both positive and negative). Schools were seen as providing a role in introducing children to new physical activities and healthy foods. Both students and teachers spoke of the effectiveness of the school's physical education program in increasing physical activity, and several students mentioned how they were introduced to new healthy foods in the school environment. One mentioned that during ''multicultural'' week ''We would have different types of lunches, and there was one where you could, like, make your own little salad and stuff.'' Another stated ''Last year . . . this guy had a counter and there were all these different fruits and flowers and stuff that you could eat. You could just go there and eat it.''

Barriers

Barriers to healthy lifestyles were identified across the 8 focus groups. Students, parents, and teachers made references to the hectic nature of student and family schedules (parents' jobs, children's homework, music lessons, etc) and how this could lead to families eating out, eating poorly (eg, eating prepackaged and junk foods at home), and not getting enough sleep. They mentioned how high levels of screen time (eg, television, videogames, DVDs, instant messaging) could negatively impact physical activity. Other barriers identified across groups included lack of money or transportation for certain activities (particularly organized sports), and that many children do not have the physical skills necessary to participate in sports due to the level of competitiveness of many sports organizations.

Some differences emerged as well. Parents and teachers were most likely to mention the barriers of convenience (eg, fast foods) and child safety (eg, limits on outdoor activity). The early adolescent groups, in contrast, mentioned that some of their friends do not engage in physical activity because of embarrassment about their abilities or because physical activities are not ''cool.''

Significant discussion focused on who was to blame for the unhealthy behaviors of early adolescents. Group members rarely blamed themselves. Teachers, for example, discussed ways poor parenting contributes to unhealthy behaviors (eg, parents not monitoring their children, parents being permissive or inconsistent, parents overscheduling their children's lives). Other parent factors mentioned by teachers included (1) parent work schedules; (2) reliance on fast, takeout, and prepackaged foods; (3) latch-key kids; (4) divorce; and (5) poor parental role models.

Parents, in contrast, often blamed their early adolescents for their unhealthy behavior—making references to poor appetites, picky eating, preferences for junk and fast food, and resistance to parental attempts to encourage healthy behaviors. For example, 1 parent said, ''When they hit junior high, they're starting to stretch, you know, stretch their wings and go, no, no, I'm not eating that, or I don't like that.''

Early adolescents, in contrast, often made situational attributions, stating that it was hard to resist eating junk food because it tasted so good, and that they often ate poorly when they were hungry or bored. For example, 1 remarked, ''When you're like super hungry, you only think about like stuff that really tastes good, which is all the unhealthy stuff.'' However, when asked who had the primary influence on what they ate, early adolescents stated it was their parents, because they were primarily responsible for the food in the home. For example, 1 stated that she ate ''pretty much just what my mom buys at the store. Like I don't really care if it's healthy or junk food, I'll just eat it if she bought it or something.''

Interventions

Nutrition. When asked what the school could do to encourage healthy eating habits, members of all groups suggested the schools should offer more healthy food choices as part of the school lunch program, and prominently display such foods. They suggested that schools should offer a variety of new and interesting healthy foods (eg, unique fruits and vegetables) as a way of encouraging healthy eating. Teachers made the additional suggestions of getting families involved, and of eliminating after-school dessert sales, replacing these offerings with healthy alternatives.

Physical Activity. The groups had numerous suggestions for increasing physical activity. These included

extending the successful semester-long physical education program to a year-long program and providing a variety of activities after school (transportation provided). These activities should be fun, not too competitive, and everyone should be able to participate, regardless of skill level. One girl described the ideal activities in this way, ''Just like if you have activities, make sure that they're fun and that everyone is included in them, or else people won't want to do them. And things that you don't have to be really good at them at first, to feel like you could continue playing them.''

In discussions of physical activity, there was a concern that the emphasis on competitive after-school athletics prevented involvement of early adolescents who could most benefit from physical activities. As 1 boy put it, ''But I think it's also hard if you haven't played sports for a while. I mean, by now, most people have been playing sports since they were in third grade at least. And some kids think I'm just not gonna be able to be good enough to do this, so they don't.''

DISCUSSION

These results confirm that early adolescents understand the role of lifestyle factors in health. Consistent with previous focus group studies,[15–18] early adolescents understood the relationship among eating, activity, sleep, and health, although they appeared more motivated by the short-term than long-term consequences of these behaviors—weight control, energy level, and sports performance versus long-term health.[17]

Most early adolescents demonstrated a limited understanding of what constitutes ''healthy eating.'' Consistent with previous research,[17–19] most healthy foods mentioned were fruits and vegetables. Healthy breakfast, lunch, or dinner entrées were seldom mentioned, nor were whole grains, low-fat meats, fish, nuts, or legumes. Early adolescents were confused about the healthiness of beverages such as juices, milk, and ''energy drinks.'' They had a much better understanding of unhealthy foods. Early adolescents mentioned many healthy foods they enjoyed, particularly fruits and vegetables. As found in previous research, children had greater preferences for fruits than vegetables, probably because of the sweeter taste of fruits.[15,20,21] Fruits and vegetables not liked were those with strong or sour tastes (eg, grapefruit, asparagus, peas). Students reported a strong preference for many energy-dense snacks (eg, cookies, candy, ice cream), again mentioning taste as the most important feature. The confusion over the healthiness of beverages such as energy drinks is consistent with other studies finding that youth often believe that ''diet'' and ''natural foods'' are healthy ''regardless of the content of the final product''[22] (p24).

Regarding physical activity, as in previous studies, early adolescents reported numerous sports and outdoor activities they enjoyed such as soccer, basketball, and bike riding.[23] Consistent with Wilson et al[23] students reported they engaged in those physical activities they found fun, whereas only a few reported engaging in ''exercise'' for health benefits.

Early adolescents, parents, and teachers reported that families, friends, and schools were major influences on students' eating and physical activity patterns.[15,17,21,22,24,25] Parental influences were thought to operate primarily through modeling, providing opportunities, and setting limits, peer influences were seen as operating through modeling and shared activities, and schools were seen as having their influence by introducing various physical activities and healthy foods. Early adolescents made numerous positive comments about the physical activity and nutrition education programs in their schools. They thought that improvements could be made in school lunch offerings.

Barriers to healthy lifestyles identified by early adolescents, parents, and teachers were similar to those in previous studies.[17,19,22,24–29] The main barriers were family schedules, media, lack of money/transportation, the competitiveness of children's sports, and the accessibility and desirability of unhealthy foods and activities. Adults mentioned convenience and child safety; early adolescents mentioned lack of interest, boredom, and how it was not ''cool'' to engage in certain physical activities.

Unexpected differences emerged in beliefs about who was to blame for unhealthy early adolescent behavior. Teachers often blamed parents (eg, family schedules and poor parental monitoring), parents often blamed early adolescents (eg, poor appetites and picky eating), and early adolescents often blamed their parents or made situational attributions (eg, parents buy the food, unhealthy foods are hard to resist). These differences were found despite the fact that all groups identified a number of barriers that involved early adolescents, parents, and teachers. Hart and colleagues[24] made a similar observation arguing that ''because of low perceived control'' parents often ''absolve themselves of personal responsibility'' in this area and ''construct a major barrier to the impact of intervention campaigns'' (p94). Our findings are consistent with the fundamental attribution error[30]—ie, the tendency for individuals to blame situational factors when explaining their own behavior (eg, early adolescents blaming the foods that are in the house) and to attribute blame to dispositional factors when explaining the behavior of others (eg, teachers attributing early adolescent behavior to poor parenting; parents attributing early adolescent behavior to dispositional factors such as being a picky eater).

Limitations

These findings should be viewed in terms of the population from which the focus groups were drawn. The youth were healthy, normal-weight adolescents from a medium-sized city in the northwest United States. Participants were predominantly European American and middle class. Studies of other populations may yield somewhat different results.

IMPLICATIONS FOR SCHOOL HEALTH

These findings are being used to design the TEAMS intervention, and have implications for other integrated, school-based obesity prevention programs. First, consistent with bioecological theory[11] the most effective programs should intervene at multiple levels and involve students, parents, and the school environment, because each plays an important role in impacting eating and physical activity patterns. Given the tendency for each group to see early adolescent healthy eating and activity as outside the realm of their control, members of all 3 groups need to better understand specific ways they can have a significant impact. Moreover, given the tendency of members of each group to ''blame'' others for unhealthy adolescent eating and activity patterns, parents, teachers, and adolescents should work together to promote healthy adolescent lifestyles. Such collaboration would help dispel misconceptions about the role of the self and others in contributing to unhealthy behavior.

Second, early adolescents need better education on healthy eating. Although the students appeared to understand the healthiness/unhealthiness of sweets, sodas, fruits, and vegetables, their knowledge in other areas was limited. Additionally, given that early adolescents are more concerned about the short-term than the long-term consequences of their eating patterns, educational efforts should focus more on short-term factors such as energy level, success in sports, cognitive functioning, and weight control than on long-term health.

Third, given the large number of healthy foods early adolescents enjoyed, much could be done to increase young peoples' opportunities to consume these foods at home and school settings. Because early adolescents are intrinsically motivated to consume these foods, self-determination theory[12] can provide strategies that help encourage this intrinsic motivation, such as the use nondirective strategies such as modeling and providing opportunities for consumption. Parents, for example, could be given ideas about quick and easy-to-prepare healthy snack alternatives and dinner entrées; school administrators could add more healthy options in the lunch room (eg, fruit and vegetable bars).

Fourth, given early adolescents' strong preferences for unhealthy, high-calorie snacks, parents, early adolescents, and teachers should be given strategies to limit exposure to and consumption of these foods. These could include providing parents and early adolescents training in behavioral techniques to avoid excessive consumption such as self-monitoring and stimulus control.[31–32]

Fifth, interventions to increase physical activity should ensure activities are challenging and fun, and everyone should be able to participate, regardless of initial skill level. Costs should be minimal and transportation provided. Consistent with self-determination theory,[12] emphasis should be placed on exposing early adolescents to intrinsically motivating physical activities they have not yet experienced such as yoga, kick boxing, hip-hop dance, pickle ball, lacrosse, and snowshoeing. To prevent undermining intrinsic motivation, these activities should be introduced in an emotionally supportive, noncompetitive environment that promotes experimentation and enjoyment—not performance and evaluation.

Sixth, different strategies may be necessary to increase activity and to decrease inactivity (eg, television, video games).[33] Families could be given ideas about fun, inexpensive, physical activities they could engage in together, parents could learn how to set and enforce rules regarding media use and screen time, and early adolescents could be encouraged to come up with strategies to address barriers affecting physical activity.

Seventh, effective programs should promote the development of general parenting skills as well. Many of the parenting contributors identified here (eg, poor parental monitoring, latch-key kids, overscheduling of children's activities, parental permissiveness) can lead to poor eating and physical activity habits in early adolescents and contribute to obesity.

Finally, programs should be integrated so that interventions carried out in 1 domain support those in another. For example, by sending consistent messages to early adolescents, parents, teachers, and school administrators, school-wide norms for healthy behaviors could be developed and reinforced leading to healthier lifestyles for all involved. Similarly, by implementing school policies promoting healthy lifestyles (eg, year-long physical education, removal of unhealthy food vending machines, healthy school lunch offerings), while at the same time encouraging healthy eating and activity patterns in the home, early adolescents would receive clear, consistent messages and opportunities that contribute to improved health.

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