

No Time for Family Meals? Parenting Practices Associated with Adolescent Fruit and Vegetable Intake When Family Meals Are Not an Option



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ARTICLE INFORMATION

Article history:

Submitted 19 May 2016
Accepted 25 October 2016
Available online 15 December 2016

Keywords:

Adolescence
Family meals
Fruit and vegetable intake
Parenting practices

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Nutrition and Dietetics.
<http://dx.doi.org/10.1016/j.jand.2016.10.026>

ABSTRACT

Background Despite research linking family meals to healthier diets, some families are unable to have regular meals together. These families need guidance about other ways to promote healthy eating among adolescents.

Objective Our aim was to examine the association between various parenting practices and adolescent fruit and vegetable (F/V) intake at different levels of family meal frequency.

Design We conducted a cross-sectional, population-based survey of influences on adolescent weight-related behaviors using Project EAT (Eating and Activity in Teens) 2010.

Participants/setting Participants were 2,491 adolescents recruited from middle/high schools in Minneapolis/St Paul, MN.

Measures Adolescent F/V intake was ascertained with a food frequency questionnaire. Survey items assessed frequency of family meals and F/V parenting practices (availability, accessibility, parent modeling, parent encouragement, and family communication).

Statistical analyses Linear regression models were used to examine associations with and interactions among family meals and parenting practices. Models were adjusted for age, sex, socioeconomic status, race/ethnicity, and energy intake (kilocalories per day).

Results Family meals, F/V availability, F/V accessibility, F/V modeling, and encouragement to eat healthy foods were independently associated with higher F/V intake. Of the 949 (34%) adolescents who reported infrequent family meals (≤ 2 days/wk), mean F/V intake was 3.6 servings/day for those with high home F/V availability vs 3.0 servings/day for those with low home F/V availability. Similar differences in mean F/V intake (0.3 to 0.6 servings/day) were found for high vs low F/V accessibility, parental modeling, and parent encouragement for healthy eating. Frequent family meals in addition to more favorable parenting practices were associated with the highest F/V intakes.

Conclusions Food parenting practices and family meals are associated with greater adolescent F/V intake. Longitudinal and intervention studies are needed to determine which combination of parenting practices will lead to improvements in adolescent diets.

J Acad Nutr Diet. 2017;117:707-714.

FAMILIES HAVE AN IMPORTANT INFLUENCE ON adolescent health behaviors, including fruit and vegetable (F/V) intake. Parents shape the home environment in which many food choices are made and employ a variety of intentional or unintentional practices that can contribute to their child's intake, such as modeling, setting routines, and establishing rules.^{1,2} There is currently a need to identify what parents can do to promote F/V intake among adolescents because adolescent obesity has risen dramatically in the last several decades, F/V are critical for adequate nutrition, and many adolescents do not meet F/V guidelines.³⁻⁵ A key factor that has been identified and recommended as a high priority for parents is to have regular

family meals. This recommendation is based on cross-sectional and longitudinal research that links frequent family meals with improved dietary practices, particularly F/V intake.⁶

Positive associations between frequent family meals and adolescent F/V intake have been consistently identified across studies with diverse samples.⁷⁻¹¹ In addition, more frequent family meals in adolescence predicts greater F/V intake into young adulthood.¹² Although the nutritional benefits of family meals are well documented,^{9,13} many families do not sit down for regular family meals for a variety of reasons. Barriers to regular family meals include conflicting work schedules, before- and after-school activities, stress, financial

resources, and a lack of suitable space to sit and eat together,^{14,15} many of which are difficult to overcome. This mismatch between recommendations and the reality experienced by many families may lead parents to feel helpless, frustrated, or guilty. Sociologists and the popular media have also pointed out that this message may lead to unwarranted stress and extreme expectations for caregivers working outside the home.^{16,17} The present study was designed to address some of these concerns. Parents who are unable to provide regular family meals need alternative strategies they can use to promote healthier diets among adolescents.

In addition to regular family meals, a variety of other parenting practices have been identified in the literature to promote healthy diets and may act as alternative strategies for parents to employ when they are unable to have regular family meals.^{1,2} These practices include home F/V availability and accessibility (ie, in plain view, ready to eat), and parental encouragement and modeling of healthy eating.^{1,2} Adolescent participants in Project EAT (Eating and Activity in Teens) 2010 were previously found to eat more F/V when these foods were present in the home, easily accessible, and when parents modeled or encouraged healthy eating.^{11,18} Broader practices related to the family climate were also associated with higher adolescent F/V consumption.¹¹ For example, strong parent–adolescent communication may contribute to an adolescent’s willingness to undertake health-promoting behaviors like eating nutrient-dense foods.¹⁹ However, it remains unclear to what extent these parenting practices are important for promoting F/V intake in the absence of regular family meals.

This study extends previous research on family meals by identifying parenting practices that are associated with adolescent F/V intake independently of family meals and at different levels of family meal participation (infrequent vs frequent family meals). In particular, this study sought to identify parenting practices associated with increased F/V intake among adolescents who have infrequent family meals. It was hypothesized that for adolescents who have infrequent family meals, exposure to other favorable parenting practices—such as strong parent–child communication, F/V that are readily available and accessible at home, and parents who model and encourage healthy eating—would be positively associated with F/V intake.

METHODS

Participants and Procedures

Data were drawn from Project EAT 2010, a diverse population-based cross-sectional study of 2,793 adolescents attending 20 public middle schools and high schools in the metropolitan area of Minneapolis/St Paul, MN, during 2009–2010. Adolescents completed an in-class survey that included questions about their family/home environment, and a food frequency questionnaire (FFQ) to assess dietary intake. Procedures have been described in detail elsewhere.¹¹ Adolescents had the opportunity to provide written assent only if their parent/guardian did not return a signed form indicating their refusal to have their child participate. Among adolescents who were at school on the days of survey administration, 96.3% had parental consent and chose to participate. Procedures were approved by the University of Minnesota’s Institutional Review Board.

Youth and Adolescent FFQ

The 149-item Youth and Adolescent FFQ was used to estimate adolescent F/V and energy intake (kilocalories per day). The tool’s validity and reliability were previously examined for the estimation of mean nutrient intakes in a sample of youth aged 9 to 18 years and found to be within acceptable ranges for dietary assessment.^{20,21} Previous research with the FFQ has found conceptually relevant variables to predict mean F/V intake, and has used mean F/V intake to predict health-related outcomes.^{22,23} Responses to the FFQ were excluded for 123 participants that reported a biologically implausible level of total energy intake (<400 kcal/day or >7,000 kcal/day).

F/V intake was the outcome of interest and was assessed in reference to the past year. Usual intake was estimated based on reported intake of 30 items: raisins, grapes, bananas, cantaloupe/melons, apples/sauce, pears, oranges/grapefruit, strawberries, peaches/plums/apricots, orange juice, apple/other juice, mashed potatoes, tomatoes, tomato/spaghetti sauce, string beans, broccoli, beets, corn, peas/lima beans, mixed vegetables, spinach, greens/kale, green/red peppers, yam/sweet potatoes, zucchini/squash/eggplant, cooked carrots, celery, lettuce/salad, coleslaw, and potato salad. A daily serving was defined as the equivalent of $\frac{1}{2}$ cup of fruits or vegetables or 1 glass of juice (size of glass interpreted by the participant). Mean intakes across the different items ranged from a low of 0.1 servings/day of beets to a high of 0.5 servings/day of apple juice.

Adolescent Survey

The EAT survey is a 235-item, self-report questionnaire assessing factors of relevance to nutrition and weight-related health.²⁴ Estimates of test–retest reliability were determined during a 1-week period in a diverse sample of 129 middle and high school students. For categorical and dichotomous variables, the Spearman correlation (ρ) and percent agreement between the two time points were calculated, respectively, and are presented. A value ≥ 0.6 is considered acceptable reliability.²⁵

Family meals were assessed by asking adolescents: “During the past seven days, how many times did all, or most, of your family living in your house eat a meal together?” Response options included: never, one to two times, three to four times, five to six times, seven times, and more than seven times. Three categories were created to reflect infrequent family meals (≤ 2 meals/wk), occasional (3 to 4 meals/wk), and frequent family meals (≥ 5 meals/wk) ($\rho=0.71$). These cut points have been previously shown to predict adolescent diet, weight, and health outcomes.¹³

Parent communication was assessed with the following items, asked separately for mothers and fathers:²⁶ 1) “How much do you feel your mother/father cares about you?” and 2) “How much do you feel you can talk to your mother/father about your problems?” Response options were: not at all, a little, somewhat, quite a bit, and very much. Responses were averaged across items (range=1 to 5). The internal consistency of the scale (ie, how well the items that make up the scale are correlated to one another and the total scale score) was assessed with Cronbach’s α and found to have an acceptable value of .81. For the analysis described here, a single dichotomous variable was created to allow for comparison between high and low parent communication

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