



## **Research and Professional Briefs**

# Time 2 tlk 2nite: Use of Electronic Media by Adolescents during Family Meals and Associations with Demographic Characteristics, Family Characteristics, and Foods Served

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#### **ABSTRACT**

We examined the frequency of adolescents' use of electronic media (ie, television/movie watching, text messaging, talking on the telephone, listening to music with headphones, and playing with hand-held games) at family meals and examined associations with demographic characteristics, rules about media use, family characteristics, and the types of foods served at meals using an observational, cross-sectional design. Data were drawn from two coordinated, population-based studies of adolescents (Project Eating Among Teens 2010) and their parents (Project Families and Eating Among Teens). Surveys were completed during 2009-2010. Frequent television/movie watching during family meals by youth was reported by 25.5% of parents. Multivariate logistic regression analyses indicated significantly higher odds of mealtime media use (P < 0.05) for girls and older teens. In addition, higher odds of mealtime media use (P < 0.05) were also seen among those whose parents had low education levels or were black or Asian; having parental rules about media use significantly reduced these odds. Frequent mealtime media use was significantly associated with lower scores on family communication (P<0.05) and scores indicating less importance placed on mealtimes (P<0.001). Furthermore, frequent mealtime media use was associated with lower odds of serving green salad, fruit, vegetables, 100% juice, and milk at meals, whereas higher odds were seen for serving sugar-sweetened beverages (P<0.05). The ubiquitous use of mealtime media by adolescents and differences by sex, race/ethnicity, age, and parental rules suggest that supporting parents in their efforts to initiate and follow-through on setting mealtime media use rules may be an important public health strategy. J Acad Nutr Diet. 2013; ■: ■-■.

ESEARCH HAS DEMONSTRATED THAT FAMILY meals promote healthful adolescent diets, 1-4 emotional well-being, 5.6 and fewer unhealthy weight-control behaviors. 7-9 Family meals are also associated with important family characteristics such as making family meals a priority, 10 general family functioning, 11,12 and communication. 13 Research has shown that young people consume more unhealthful foods and beverages when eating meals in front of the television, 14-16 with possible associations with overweight status. 16,17 Thus, the high prevalence of mealtime television watching is concerning. Whereas studies have shown high prevalence rates of computer use, video game playing, 18 and texting 19 among adolescents, their increasing rates over time, 18 and the ubiquitous nature of mobile devices, 18,19 little is known about the prevalence of electronic media use other than television viewing among adolescents during family meals. Moreover, demographic characteristics such as sex (males), age (11 to 14 years), and race/ethnicity (black and Hispanic), 18 as well as

few parental rules around media use, <sup>20,21</sup> have been shown to be associated with higher media use, but associations with mealtime media use have not been examined and may have implications for interventions. Our study addresses these gaps by assessing media use during family meals and extending the type of media investigated beyond television to include hand-held games, text messaging, talking on the telephone, and listening to music with headphones. This study further examines associations between media use during family meals and adolescent and parent demographic characteristics, parental rules about mealtime media use, family mealtime characteristics, and foods served at meals.

## **METHODS**

## **Study Design and Participants**

Data were drawn from two coordinated, population-based studies: Eating and Activity in Teens (EAT 2010) was a population-based study of 2,793 adolescents, and Families

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and Eating and Activity Among Teens (Project F-EAT) was a study of parents (n=3,709) of the adolescents in EAT 2010. Adolescents and parents completed surveys in 2009-2010. Adolescents and parents of adolescents in Project EAT 2010 were invited to participate in Project F-EAT. Parents received a mailed invitation, survey, consent form, \$2 bill, and a postage-paid envelope to participate. Parents could complete the survey by mail or telephone interview (available in seven languages). The response rate of invitees was 77.6%. Most parents (78%) completed the survey by mail; all participants received a gift card. The University of Minnesota Institutional Review Board approved all study procedures. Additional details can be found elsewhere. 11,25

For our study, only data from one parent for each adolescent were used (n=2,281). In selecting one parent for inclusion, preference was given to parents who reported living with the adolescent most of the time, when all else was equal, and to mothers, because research indicates that women are more often in charge of the family meal environment. In addition, the family meal questions assessed in our study came after a skip pattern in the parent survey that allowed parents to check "we never eat family dinners" (n=423). Thus, the final analytic sample included 1,858 parents.

### Measures

The Project F-EAT parent survey was designed to gather information on adolescents' family and home environments with relevance to dietary intake, physical activity, and weight-related health. <sup>11,22-24</sup> Survey items were drawn from a previous Project EAT parent survey, 27,28 corresponding measures from the EAT 2010 student survey, <sup>22</sup> and existing surveys from the scientific literature. <sup>18,26,28-32</sup> The Project F-EAT parent survey underwent extensive pilot testing (ie, expert reviews for face/content validity and cultural relevance and focus groups with economically and racially diverse adults) and test-retest reliability testing over a 2-week period (Pearson product-moment correlations for continuous variables and Spearman correlations for ranklevel response options).<sup>33</sup> Data regarding adolescent report of family functioning, family communication, and demographic characteristics came from the EAT 2010 adolescent survey. EAT 2010 was designed to examine dietary intake, physical activity, weight control behaviors, weight status, and factors associated with these outcomes in adolescents.34

Electronic media use at mealtimes was examined with five items in which parents reported the frequency with which their adolescent engaged in "watching TV or movies," "playing with hand-held games," "talking on the phone," "text messaging," or "listening to music with headphones" during family meals. Response options included never or rarely, sometimes, usually, and always (item test-retest correlations, r=0.61 to 0.75). Frequent use was defined as usually or always. A summary measure was also created, comparing adolescents who did not use any media devices frequently at family meals with those who used at least one device frequently at family meals. Rules regarding mealtime media use was assessed with the question, "Do you set limits (have rules, including no use) on your child's media use (eg, television, cellular telephone, and texting) at family meals?" (answers were yes or no; test-retest r=0.87).

Mealtime importance (or lack thereof) was assessed by parents regarding the importance of eating together (reverse scored), scheduling family meals, perceived difficulty of eating together, and expectations of children being home for dinner (reverse scored) using strongly disagree to strongly agree response options; lower scores reflect greater importance on mealtimes (2-week test-retest r=0.72). Family communication was assessed by adolescents with four items regarding feeling cared for and talking about problems with mother/father. Response options included not at all, a little, somewhat, quite a bit, or very much. Two-week test-retest correlation was high (r=0.81) and reliability was acceptable ( $\alpha$ =.67). Family functioning was assessed with six items from the general functioning scale of the Family Assessment Device 30,35 regarding family member acceptance, decision making, getting along, expressing feelings, misunderstandings, and confiding in one another (strongly disagree to strongly agree), with high validity, test-retest reliability, and internal consistency reliability<sup>11</sup> (in our study sample  $\alpha$ =.70). Higher scores on family relationship scales reflect better communication/functioning. Types of foods served at family dinner assessed the frequency of serving green salad, vegetables other than potatoes, 100% fruit juice, fruit (not including juice), milk, and sugar-sweetened beverages at dinner (never/rarely, sometimes, usually, always; individual item test-retest values ranged from r=0.56 to 0.85). For analysis, response options were combined to never/ rarely/sometimes and usually/always. Fast food for family meals was assessed with the question, "During the past week, how many times was a family meal purchased from a fastfood restaurant and eaten together either at the restaurant or at home (pizza counts)?" Response options ranged from never to three or more times during the past week (test-retest r=0.43). Adolescent demographic characteristics, including grade level in school (6th to 8th grade or 9th to 12th grade), sex, and age were self-reported on the EAT 2010 adolescent survey.

The following demographic characteristics were reported by parents: education ( $\leq$  high school education, some college, and college/advanced degree), household income (<\$20,000, \$20,000 to 49,999, and >\$50,000), work status (eg, working full-time, working part-time, or not working), marital status (eg, married or not married), age (age <36 years, 36 to 40 years, 41 to 46 years, and  $\geq$ 47 years) and race/ethnicity (eg, white, black, Hispanic or Latino, Asian, or mixed/other).

# Statistical Analysis

Bivariate associations between frequent mealtime media use and demographic characteristics were assessed by  $\chi^2$  analysis. To test the strength of these associations, multivariate logistic regression (95% CI) was used to calculate the odds of adolescents' frequent use of mealtime media (while entering demographic variables that were statistically significant for at least one outcome in the bivariate models; bivariate models not shown). A parallel set of models also included the variable assessing parent rule-setting around mealtime media use to assess its contribution. Logistic regression models were run separately for each type of media. Mean differences in family meal importance, family functioning, and family communication by frequent mealtime media use were

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