



Research report

Family meals. Associations with weight and eating behaviors among mothers and fathers [☆]

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ABSTRACT

Few studies have looked at the relationship between family meals and adult weight and health behaviors. The current study investigates the association between frequency of family meals and mothers' and fathers' body mass index (BMI), dietary intake, dieting behaviors and binge eating. Data from Project F-EAT (Families and Eating and Activity in Teens) were used for the current analysis. Socio-economically and racially/ethnically diverse mothers and fathers ($n = 3488$) of adolescents participating in a multi-level population-based study (EAT 2010) completed surveys mailed to their homes. Predicted means or probabilities were calculated for each outcome variable at each level of family meal frequency. Interactions between race/ethnicity and marital status with family meals were evaluated in all models. Overall, results indicated that having more frequent family meals was associated with increased consumption of fruits and vegetables for mothers and fathers, after adjusting for age, educational attainment, marital status and race/ethnicity. Other findings including less fast food intake for fathers and fewer dieting and binge eating behaviors for mothers were significantly associated with family meal frequency, but not consistently across all family meal categories or with BMI. Interactions by race/ethnicity and marital status were non-significant, indicating that family meals may be important for more healthful dietary intake across race and marital status. Future research should confirm findings in longitudinal analyses to identify temporality and strength of associations.

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Introduction

The high prevalence of obesity and its related negative health outcomes has led to an increased interest by researchers to identify predictors of obesity (Keith et al., 2006). Family meals have been suggested as one potential factor that may be protective against obesity (Chan & Sobal, 2011; McIntosh, 1999; McIntosh et al.,

2009). This may be because family meals tend to be healthier than other meals because vegetables and fruits are commonly served during family meals (Chan & Sobal, 2011; McIntosh, 1999; Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003; Neumark-Sztainer, Larson, Fulkerson, Story, & Hannan, 2010; Neumark-Sztainer et al., submitted for publication) and family meals provide an opportunity for family members to emotionally connect (Videon & Manning, 2003). To date the majority of research looking at the association between family meals and body weight has been conducted with children and adolescents. Several of these studies have shown an inverse relationship between the frequency of family meals and child and adolescent body mass index (BMI) (Anderson & Whitaker, 2010; Gable, Chang, & Krull, 2007; Gillman et al., 2000; Sen, 2006; Taveras et al., 2005; Yuasa et al., 2008), with some studies finding that the inverse relationship was specific to one gender (Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Gundersen, Lohman, Eisenmann, Garasky, & Stewart, 2008; Mikkilä, Lahti-Koski, Pietinen, Virtanen, & Rimpela, 2003), race/ethnicity

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(Rollins, Belue, & Francis, 2010), or social class (Belue, Francis, & Colasco, 2009). Other studies have shown no association between family meal frequency and child BMI (Mamun, Lawlor, O'Callaghan, Williams, & Najman, 2005; Utter, Scragg, Schaaf, & Mhurchu, 2008; Woodruff, Hanning, McGoldrick, & Brown, 2010; Wurback, Zellner, & Kromeyer-Hauschild, 2009).

Although there have been inconsistent findings related to child and adolescent BMI and family meals, numerous studies over the last decade have consistently shown that family meals are associated with more healthful dietary intake, higher levels of emotional well-being, and fewer weight control behaviors in youth. Cross-sectional and longitudinal studies with boys and girls from diverse ethnic/racial backgrounds have found that family meals are associated with increased fruit and vegetable intake (Gable & Lutz, 2000; Gillman et al., 2000; Neumark-Sztainer et al., 2003), calcium and whole grains (Larson, Neumark-Sztainer, Hannan, & Story, 2007; Neumark-Sztainer, Story, Ackard, Moe, & Perry, 2000; Neumark-Sztainer, Wall, Story, & van den Berg, 2008) lower levels of extreme weight control behaviors and binge eating, (Haines, Gillman, Rifas-Shiman, Field, & Austin, 2010; Neumark-Sztainer, Eisenberg, Fulkerson, Story, & Larson, 2008) and better psychosocial health independent of socio-economic status (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004).

Less is known about whether having frequent family meals is similarly associated with better dietary intake and other weight-related behaviors in adults, due to limited research and inconsistent findings across existing studies. One study found that there was no association between frequent family meals and mothers' dietary intake (e.g. fruit, vegetables, fat) (Boutelle, Birkeland, et al., 2007; Boutelle, Fulkerson, Neumark-Sztainer, Story, & French, 2007), while other studies have found that there was a significant inverse relationship between frequency of family meals and body mass index (BMI) for parents, (Sobal & Hanson, 2011) and for children and their parents (Chan & Sobal, 2011). In addition, a study primarily of mothers of adolescents, found that parents who purchased fast food for family meals three or more times per week were significantly heavier than parents who did not purchase fast food for family meals (Boutelle, Birkeland, et al., 2007; Boutelle, Fulkerson, et al., 2007). Although these previous studies suggest that there is an association between the frequency of family meals and lower BMI for parents, there are limitations with the studies including small sample sizes and low racial/ethnic and socio-economic diversity. In addition, limited outcomes (e.g. BMI) were measured in past studies, leaving important unanswered questions about the association between family meal frequency and other important outcomes such as dietary intake, fast food intake, and disordered eating behaviors which could provide a more comprehensive picture of parent weight-related health behavior outcomes.

There is also limited research looking at the association between family meal frequency and weight and weight-related behaviors in parents across race/ethnicity or by parent marital status (LaVeist, Zeno, & Fesahazion, 2010). Identifying whether there are differences by race/ethnicity or marital status (e.g. dual-headed versus single-headed households) of the parent will provide important insights related to factors that may moderate the strength of the association between family meal frequency and parent weight and weight-related health outcomes. Although previous research on family meals and parent weight and weight-related outcomes has not looked specifically at racial/ethnic differences, studies using child and adolescent samples have. These studies have shown that the association between the frequency of family meals and more healthful dietary intake and less disordered eating behaviors in adolescents holds above and beyond racial/ethnic differences in youth (Gable & Lutz, 2000; Gillman et al., 2000; Neumark-Sztainer et al., 2003; Dianne Neumark-Sztainer et al., 2000), while other

research has shown differences in family meal frequency and obesity across race/ethnicity in children (Rollins et al., 2010). In addition, the majority of research on dual-headed versus single-headed households and family meal frequency has focused on perceived barriers to family meals. This research has shown that married mothers report lack of time, limited cooking skills, and the effort involved in carrying out the meal (e.g. children's picky eating, family conflict) as barriers to family meals, whereas single mothers report the cost of the meal as a major barrier and lack of time and cooking skills as secondary barriers (Berge, Arikian, Neumark-Sztainer, & Doherty, *in press*; Fulkerson, Story, Neumark-Sztainer, & Rydell, 2008; Fulkerson et al., 2011). Thus, research looking at whether the association between family meal frequency and parent weight and weight-related outcomes differs across race/ethnicity or by dual-headed versus single-headed households would be a next step in furthering the family meals literature.

In addition, more research is needed to examine both mothers' and fathers' weight and weight-related health behavior outcomes in connection with family meal frequency because very few studies have included data on fathers (Sobal & Hanson, 2011). Research on male and female adolescents suggests that family meal frequency benefits males and females equally in relation to certain dietary behaviors (Fulkerson, Neumark-Sztainer, & Story, 2006; Fulkerson, Story, et al., 2006; Gillman et al., 2000; Neumark-Sztainer et al., 2008), but not disordered eating behaviors (Neumark-Sztainer, Wall, Story, & Fulkerson, 2004), thus it would be important to identify whether the same associations hold for mothers and fathers.

Thus, given the increase in prevalence of obesity for adults in the US over the last two decades (Ogden et al., 2006) and the limited state of the research related to family meals and parent weight and weight-related health outcomes, investigating whether family meals are associated with parent weight and a variety of weight-related health behaviors is of high importance. In addition, given the evidence to-date showing positive weight and weight-related health outcomes (e.g. more healthful dietary intake) for youth, identifying whether family meal frequency is associated with more positive health-related measures in parents will be a first step in identifying whether family meals may benefit the entire family. The current study, therefore, aims to address the following research questions: (1) are more frequent family meals associated with lower body mass index (BMI), more healthful dietary intake (fruit and vegetable intake), less unhealthy dietary intake (fast food consumption), and less dieting and binge eating behaviors in mothers and fathers? (2) does race/ethnicity or marital status of parent modify the association between family meal frequency and parent weight and weight-related outcomes?

Methods

Study sample and design

Data for the current study were drawn from Project F-EAT (Families and Eating and Activity in Teens), a population-based study of parents of adolescents. Project F-EAT surveys were completed by a sample of 3709 parents or other caregivers of adolescents enrolled in EAT 2010 (Eating and Activity in Teens). The EAT 2010 study sample included 2793 adolescents from 20 public middle and high schools in the Minneapolis/St Paul metropolitan area of Minnesota. Adolescent participants completed surveys during the 2009–2010 school year. As part of this survey process, adolescents were asked to provide contact information for up to two parents or other persons whom they perceived to be their main caregivers (e.g., grandparent, foster parent, aunt or uncle). Approximately 30% of the

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