Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

HHS Public Access

Author manuscript

J Nutr Educ Behav. Author manuscript; available in PMC 2022 April 11.

Published in final edited form as:

J Nutr Educ Behav. 2019 October ; 51(9): 1113–1120. doi:10.1016/j.jneb.2019.05.598.

Examining predictors of watching television during family meals in a diverse sample

Amanda C. Trofholz, MPH, RD[1], **Susan Telke, MPH**[1], **Katie Loth, PhD, MPH, RD**[1], **Allan Tate, PhD, MPH**[2], **Jerica M. Berge, PhD, MPH, LMFT, CFLE**[1]

[1]Department of Family Medicine and Community Health, University of Minnesota, Minneapolis, MN

[2]Department of Epidemiology and Biostatistics, University of Georgia, Athens, GA

Abstract

Objective: To identify the predictors associated with television (TV) watching during family meals.

Methods: Parents of racially/ethnically diverse 5–7-year-old children (n=150) completed eight days of ecological momentary assessment surveys. After each meal they shared with their child, parents answered meal-related questions (e.g., who was present). Adjusted generalized estimating equations were used to estimate probabilities of watching TV during family meals for individual predictors.

Results: Number of adults present, location, outside influences (e.g., planned meal, stress), and time to prepare the meal, were independently predictive of TV watching during the meal ($p<0.001$).

Conclusion and Implications: As watching TV during family meals has been associated with negative dietary outcomes in prior research, families may need assistance in addressing the factors that are associated with predictors of watching TV during family meals. Future research should investigate other factors that may also influence watching TV at family meals.

Keywords

family meals; ecological momentary assessment; television; family meal characteristics

Introduction

Previous cross-sectional research has found that between a quarter to one third of family meals are eaten while watching TV.[1–3] In addition, prior research has shown that watching television (TV) during family meals is associated with negative dietary outcomes in children

Corresponding Author: Amanda C. Trofholz, MPH, RD, Department of Family Medicine and Community Health, 717 Delaware St, SE, Minneapolis, MN 55414, 612-624-7129, trofh002@umn.edu.

Author Contact Information:

Amanda Trofholz is a research director; Susan Telke is a PhD student; Katie Loth is an assistant professor, and Jerica Berge is a full professor in the Division of Family Medicine and Community Health, University of Minnesota, Minneapolis.

Allan Tate is an assistant professor, Department of Epidemiology & Biostatistics, University of Georgia, Athens.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

and adolescents, including overall diet quality,[3–6] lower intake of fruits and vegetables,[3,5,6] higher intake of fast food, and higher consumption of sugar-sweetened beverages (SSB).[3,5] Television watching during family meals has also been associated with serving family meals with less nutritional quality (e.g., lower fruits and vegetables[2,7], increased fast food,[4] and higher SSB)[2], as well as a negative emotional atmosphere at the meal.[4] Furthermore, one study found that never or rarely watching TV during family meals was associated with increased overall fruit and vegetable intake and decreased SSB and chips consumption.[8] Associations with TV watching during family meals and weight status in children have been mixed.[4,9]

Previous research also suggests similar poor dietary outcomes for adults when the TV is watched during family meals.[10] Additionally, research has shown negative household-level outcomes when the TV is on. For example, one study found lower quality dietary healthfulness and emotional atmosphere of the family meal when the TV was on (e.g., in the background) during family meals, regardless of whether the family was paying attention to the TV.[4]

While there is research on the outcomes of watching TV at family meals,[1–10] the authors were not able to identify published research that studied the *predictors* associated with TV watching during family meals. Family meals may be a natural intervention point when attempting to improve family meal healthfulness or diet quality for family members. Thus, it is important to first identify the predictors associated with TV watching during family meals in order to identify intervention targets.

The current study advances the state of the literature by investigating the predictors of watching TV during family meals. Using ecological momentary assessment (EMA), participants provided in the moment, meal-level details about each family meal they shared with their child for eight days. As TV watching during meals is associated with poorer dietary outcomes, *it was* hypothesized that serving a less healthy family meal (e.g., fast food) and having a meal that is less family-oriented (e.g,. less people present, meal eaten on the couch) will be predictors of TV watching during family meals. This hypothesis is consistent with the theory that guides the study design, Family Systems Theory (FST).[11] FST supports the importance of family meals and the premise that family meals provide an atmosphere for promoting dietary healthfulness and family connectedness. Knowing what predicts families watching TV during family meals will allow practitioners and interventionists the ability to develop recommendations to disrupt the patterns that lead to TV watching during family meals and offer relevant suggestions for ways to reduce TV watching during family meals.

Methods

Data for this study come from *Family Matters*, a two-phased, five-year study exploring home environment factors that serve as risk or protective factors for childhood obesity.[12] *Family Matters* is conducted in homes of racially/ethnically and socioeconomically diverse families with young children. Phase I included direct in-home observations of 150 families; Phase II is a longitudinal cohort study with 1200 diverse families. An online survey and one week of

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

EMA is being administered to participants, and is currently ongoing. Further details about both Phases of the *Family Matters* study can be found elsewhere.[12] Data for the current analysis come from Phase I of *Family Matters*.

Participants for the *Family Matters* study were recruited between 2015–2016 from primary care clinics in Minneapolis-St. Paul, Minnesota. Families with 5–7 year old children who had recently had a well-child visit were sent a letter inviting them to participate in the *Family Matters* study; all families received a follow-up call from study staff. Eligibility criteria included: having a 5–7 year old child (target child) who lived full-time with the primary parent/guardian (parent) as well as another sibling between the ages of 2–12 y. The target child needed to be away from home during the day (e.g., at school, daycare) but needed to share at least one meal/day with the parent. In addition, the parent needed to be able to read and speak English, Hmong, Somali, and/or Spanish. In order to optimize a racially/ethnically diverse sample, participants were intentionally recruited so that there were equal numbers of families representing White, African American, Hmong, Somali, Native American, and Latino homes (25 each, total of 150). Additionally, in order to assess associations by weight status, purposeful recruitment resulted in half of the families having target children who were normal weight (5^{th} – $\leq 85^{th}$ Body Mass Index (BMI) percentile), and half with target children who were overweight or obese ($>85^{th}$ BMI percentile).[13]

Data for Phase I were collected through two in-home visits conducted 8–10 days apart, with additional data collected from participants during the time between home visits (e.g., EMA, dietary recalls. In between home visits, the parent and target child (5–7 years old) wore an accelerometer to track physical activity. Additionally, the parent completed eight days of ecological momentary assessment (EMA) surveys.[12] Data for the current study come from the EMA surveys. All procedures were approved by the University of Minnesota Institutional Review Board.

Procedures

At the first home visit, the parent verbally responded to questions regarding the household structure (e.g., number of people in household). In addition, household members were asked their relationship to the target child.

Ecological Momentary Assessment surveys: At the first home visit, parents were provided a study iPad and trained on how to complete EMA surveys. There were three types of surveys parents responded to: 1) signal-contingent (four surveys sent randomly throughout the day); 2) event-contingent (completed after the parent ate a meal with the 5–7 year old child); and 3) end-of-day. Parents needed to complete eight full days of EMA surveys; a complete day included at least two signal-contingent, one event-contingent, and the end-of-day EMA survey. Participant's observational windows were extended by a day each time the daily minimum amount of EMA messages was not met to ensure eight full days of EMA were collected. This study focuses on data from the event-contingent surveys. While research exists on family meals (e.g., associations with dietary intake in children and adolescents)[3–8], very little information exists on how family meals are specifically carried out (e.g., meal logistics, who is present, who prepared the meal).[14–16] The event contingent

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

surveys were designed to fill the gaps in this research area. Detailed information about the signal-contingent and end-of-day EMA surveys have been published elsewhere.[17]

Event-contingent surveys were either 1) self-initiated by parents after eating a meal with their child, or 2) prompted before a signal contingent survey (i.e., parents were reminded to fill out an event survey at the beginning of their signal contingent survey if they had a meal with their child and had forgotten to self-initiate a survey). Event-contingent surveys asked about meal-related details, such as who was present at the meal, meal atmosphere, and additional meal logistics (e.g., where the meal occurred). At the beginning of each event-contingent survey, the parent was also asked to identify the meal being eaten as a breakfast, lunch, dinner, snack, or a group celebration. Participants completed a total of 2,759 event contingent (e.g., meal occasion) surveys.

Measures: A description of the measures used in this study can be found on Table 1, which includes the meal characteristics (e.g., location of the meal, type of food served) that were evaluated for this study. A description of variable creation (e.g., stressed and/or tired response) is also included in Table 1.

Statistical Analysis

Only families who reported having a TV in the home were included in the current analysis (n=136). Descriptive analyses were performed to describe the sample of families and to evaluate modeling assumptions. Adjusted generalized estimating equations with a Poisson error structure, log link, independent working correlation structure, and Huber-White robust standard errors were used to estimate probabilities and 95% confidence intervals of the associations between meal characteristic predictors and the prevalence of television (dichotomous dependent outcome variable) at meals. All models are adjusted for child's race, as household race and the number of times the TV was on during a meal were not independent (Chi-square test for independence; p-value, 0.001), suggesting that adjustment for race was advised in the generalized estimating equation analysis. Analysis was also adjusted for household structure where participant's home were characterized to be either: one parent and no other adults; one parent with other adults; two parents with no other adults; or two parents with other adults. The number of children living in the household (1,2,3,4+) was also used for adjustment. Models were initially fitted separately for breakfast, lunch and dinner meals and again with all meal occasions combined. Patterns in TV watching were visually similar, and the combined meal occasions were retained for analysis. Meals categorized as snacks or group celebrations were not included for the current analysis. For ease of the reader, the term family meals will be used throughout the paper without clarifying that these meals only consist of breakfast, lunch, and dinner (i.e., not snacks). An example interpretation of results is included in Table 3. All analyses were performed in Stata 15.SE, StataCorp LLC, College Station, TX, 2017.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Results

Description of Study Sample:

The majority of parents were female (91%), and the average age of parents was 34.5 years (SD=7.1). Regarding household structure, the average number of adults in the home was 2.0 (SD=1.1), and the average number of children was 3.3 (SD=1.4). One quarter of the homes were single-parent households, and over half (52%) were two-parent households. Twelve percent of homes had a parent with other adults present; eleven percent had two parents with other adults present. The sample was primarily low income, with 70% of households having an income <$35,000/year.

Frequency of TV at family meals:

Overall, TV was watched during fourteen percent of family meals (i.e., breakfast (14.6%), lunch (18.6%), and dinner (11.9%)) (Table 2). Analysis of household race and television use during meals, taking into account number of reported meals, indicated differences by race ($p<0.001$). For example, Hmong families had TV present at over a quarter (26.7%) of reported meals and African American families reported TV at over one fifth (22.8%) of reported meals. By contrast, White families reported TV at 7.4% of family meals, and Native Americans at 6.4% of family meals.

The average number of daily meal occasions reported through EMA was 2.28 (SD: 0.73). During the eight days of EMA follow-up, the median number of total times the parent reported watching TV during family meals was two. About a quarter (26%) of the 150 families did not report watching TV during any meal. Data for this analyses are not presented.

Predictors of TV at family meals:

After adjustment, the following mealtime variables were significant predictors associated with watching TV during family meals ($p < 0.05$): the number of adults present at the meal ($p < 0.001$), the location of the meal ($p < 0.001$), factors influencing foods served at meals ($p < 0.001$), and the time needed to prepare the meal ($p < 0.001$) (Table 3). Specific factors associated with watching TV during family meals was highest if there was only one adult present, if the meal took place on the couch, if the parent reported being stressed and/or tired was the influential factor on parent's choice of food for the meal, and/or if the meal took less than fifteen minutes to prepare.

Whether or not the meal took place on a weekend or weekday, the type of food served (e.g., homemade, fast food), the person preparing the meal (e.g., primary guardian, another parent in household), and the number of children present were not significant predictors associated with watching TV during family meals.

Discussion

The goal of this study was to evaluate the frequency of watching TV during family meals in a racially/ethnically diverse sample and to identify predictors associated with watching TV during family meals. Overall, TV was watched during 14.3% of family meals. This

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

prevalence is lower than previous literature assessing TV watching during family meals, which found TV watching occurring during about one quarter to one third of family meals.[1–3,10] One study that used direct observational methods (i.e., two video-recorded family meals) found that one quarter of the sample had TV on during one of the meals, and 43.3% had TV on both observed meals.[4] The sample for the current study were families with 5–7 year old children, whereas previous research was with older children (6–12 years old),[4] middle and high school students,[1–3] and adults.[10] It may be that families with younger children watch less TV during family meals compared to families with older children.

There were also racial/ethnic differences in watching TV during family meals. A separate paper using the same *Family Matters* dataset examining TV watching by children during *any* meal (i.e., not necessarily family meals) also found racial/ethnic differences.[18] For example, TV watching during *any* meal was highest among African American (57%) and Hmong (46%) children, and lowest among Somali (9%) children.

In addition to providing insight into predictors associated with TV watching during family meals, results also provided some explanation for why TV during family meals has been previously associated with negative outcomes, including serving meals with less nutritional quality,[2,4,7] and having a lower emotional atmosphere at the family meal.[4] It may be that the presence of TV does not itself lead to a lower emotional atmosphere; rather, a meal around the couch with a single parent present who is reported to be stressed and/or tired may not provide the opportunity for interaction and engagement that would boost the emotional atmosphere and, perhaps, make the meal more beneficial for the child.[19] Additionally, serving a quick meal (i.e., prepared in less than fifteen minutes), may explain why family meals while watching TV tend to have less nutritional quality.[2,4,7] It was unexpected that fast food was not a predictor associated with TV watching during family meals given TV's association with negative meal and dietary outcomes.[2–8] It may be that fast foods have been replaced with other quick, easy-to-make foods that offer the same convenience of fast foods

There were limitations of the current study. One limitation was related to how a family meals was counted. A meal was counted as a "family meal" if it included at least the parent and 5–7 year old target child. This definition of a family meal may differ from the parent's interpretation of family meals asked on a survey, which may explain why there are discrepancies in the frequency of TV during family meals reported from past research. Additionally, it is likely that not all predictors associated with watching TV at family meals (e.g., using TV as a distraction to avoid interaction with an abusive spouse/parent or upset child) were captured in this study. Other limitations to this study include the limited geographic area of the study sample, which may affect generalizability of results.

Implications for Research and Practice

Watching television during family meals was shown to have negative dietary outcomes for children. Families may need assistance finding strategies to address the factors that lead to watching TV during meals, such as the parent being stressed and/or tired. In addition, parents may need suggestions for how to include their children or other household members in food preparation so that the burden of meal preparation is spread out, which may reduce

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

the need for a very quick—and possibly more unhealthy—meal. Families may also need assistance managing busy family schedules to help more adults be present at the meal, if possible.[20] Future research should consider other variables that may influence watching TV at family meals and the ways in which these factors distract from or promote the family meal being a family-focused event.

Practitioners and interventionists working to improve family meals—and thereby child health—may want to assess parent's stress level and offer strategies for having a high quality family meal (both in terms of meal quality and the emotional atmosphere) and/or strategies to help reduce parent stress.

This study also provides recommendations for future research. It is likely that eating a family meal on the couch is a predictor for watching TV in that it is a more convenient place; however, future research may also want to investigate if the location of the family meal (e.g. on the couch, around a table) has different dietary benefits for children. Finally, future research may want to investigate what kinds of quick meals parents prepare when they are stressed or tired. This would open new opportunities for the development of interventions to improve the healthfulness of these quick meals.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements:

Research is supported by grant number R01HL126171 from the National Heart, Lung, and Blood Institute (PI: Berge). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Heart, Lung and Blood Institute, the National Institute of Child Health and Human Development or the National Institutes of Health.

References

1. Eisenberg ME, Neumark-Sztainer D, Feldman S. Does TV viewing during family meals make a difference in adolescent substance use? Prev Med (Baltim). 2009;48(6):585–587. doi:10.1016/j.ypmed.2009.04.002
2. Fulkerson J a., Loth K, Bruening M, Berge J, Eisenberg ME, Neumark-Sztainer D. Time 2 tlk 2nite: Use of electronic media by adolescents during family meals and associations with demographic characteristics, family characteristics, and foods served. J Acad Nutr Diet. 2014;114(7):1053–1058. doi:10.1016/j.jand.2013.10.015 [PubMed: 24361006]
3. Feldman S, Eisenberg ME, Neumark-Sztainer D, Story M. Associations between Watching TV during Family Meals and Dietary Intake Among Adolescents. J Nutr Educ Behav. 2007;39(5):257–263. doi:10.1016/j.jneb.2007.04.181 [PubMed: 17826345]
4. Trofholz AC, Tate AD, Miner MH, Berge JM. Associations between TV viewing at family meals and the emotional atmosphere of the meal, meal healthfulness, child dietary intake, and child weight status. Appetite. 2017;108:361–366. doi:10.1016/j.appet.2016.10.018 [PubMed: 27756638]
5. Coon KA, Goldberg J, Rogers BL, Tucker KL. Relationships between use of television during meals and children's food consumption patterns. Pediatrics. 2001;107(1):1–11. [PubMed: 11134427]
6. Sweetman C, McGowan L, Croker H, Cooke L. Characteristics of family mealtimes affecting children's vegetable consumption and liking. J Am Diet Assoc. 2011;111(2):269–273. doi:10.1016/j.jada.2010.10.050 [PubMed: 21272701]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

7. FitzPatrick E, Edmunds LS, Dennison B a. Positive effects of family dinner are undone by television viewing. J Am Diet Assoc. 2007;107(4):666–671. doi:10.1016/j.jada.2007.01.014 [PubMed: 17383273]
8. Andaya AA, Arredondo EM, Alcaraz JE, Lindsay SP, Elder JP. The association between family meals, TV viewing during meals, and fruit, vegetables, soda, and chips intake among Latino children. J Nutr Educ Behav. October 2010. doi:10.1016/j.jneb.2009.11.005
9. Roos E, Pajunen T, Ray C, et al. Does eating family meals and having the television on during dinner correlate with overweight? A sub-study of the PRO GREENS project, looking at children from nine European countries. Public Health Nutr. 2014;17(11):2528–2536. doi:10.1017/S1368980013002954 [PubMed: 24642340]
10. Boutelle K, Birnbaum A, Lytle L, Murray D, Story M. Associations between perceived family meal environment and parent intake of fruit, vegetables, and fat. J Nutr Educ Behav. 2003;35(1):24–29. [PubMed: 12588677]
11. Whitechurch G, Constantine L. "Systems Theory." Sourcebook on Family Theories and Methods: A Contextual Approach. New York, NY: Plenum Press; 1993.
12. Berge JM, Trofholz AC, Tate AD, et al. Examining unanswered questions about the home environment and childhood obesity disparities using an incremental, mixed-methods longitudinal study design: Protocol for the Family Matters study. Contemp Clin Trials. 2017;62:61–76. [PubMed: 28800894]
13. Body Mass Index BMI (BMI) Percentile Calculator for Child and Teen | DNPAO | CDC. https://www.cdc.gov/healthyweight/bmi/calculator.html. Accessed April 1, 2019.
14. Berge JM, Draxten M, Trofholz A, Hanson-Bradley C, Justesen K, Slattengren A. Similarities and differences between families who have frequent and infrequent family meals: A qualitative investigation of low-income and minority households. Eat Behav. 2018;29(October 2017):99–106. doi:10.1016/j.eatbeh.2018.02.007 [PubMed: 29573602]
15. Berge JM, Jin SW, Hannan P, Neumark-Sztainer D. Structural and interpersonal characteristics of family meals: associations with adolescent body mass index and dietary patterns. J Acad Nutr Diet. 2013;113(6):816–822. doi:10.1016/j.jand.2013.02.004 [PubMed: 23567247]
16. Berge JM, Hanson C, Draxten M. Perspectives about family meals from racially/ethnically and socioeconomically diverse households with and without an overweight/obese child. Child Obes. 2016;12(5):368–376. doi:10.1089/chi.2015.0215 [PubMed: 27045737]
17. Berge JM, Tate A, Trofholz A, et al. Momentary parental stress and food-related parenting practices. Pediatrics. 2017;140(6):e20172295. doi:10.1542/peds.2017-2295 [PubMed: 29167378]
18. Trofholz AC, Tate AD, Loth K, Neumark-Sztainer DR, Berge JM. Watching television while eating: Associations with dietary intake and weight status among a diverse sample of young children.
19. Berge JM, Rowley S, Trofholz A, et al. Childhood obesity and interpersonal dynamics during family meals. Pediatrics. 2014;134(5):923–932. doi:10.1542/peds.2014-1936 [PubMed: 25311603]
20. Trofholz A, Thao MS, Donley M, Smith M, Isaac H, Berge JM. Family meals then and now: A qualitative investigation of intergenerational transmission of family meal practices in a racially/ethnically diverse and immigrant population. Appetite. 2018;121:163–172. [PubMed: 29128396]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 1:

Description of Ecological Momentary Assessment Questions used in Evaluating Predictors Associated with Television Watching at Family Meals

Construct	Question	Response Options	Variable Creation
Ecological Momentary Assessment Variables			
TV in the home	How many TVs are in your home?	0, 1, 2, 3, 4, 5, 6, 7	Families with a response of “0” were excluded from analysis
Watching TV at meal	Which of the following things were happening during the meal or snack? (Select all that apply)	Conversation; Watching TV; TV on in background; Playing a video game; Using a cell phone; Using a tablet; Using a computer; Reading/looking at a book; Listening to headphones; None of the above	If a parent selected "Watching TV" and/or "TV on in background", the meal was coded as having TV; if neither were selected, the the meal was coded as not having TV
# of children present at meal	How many children were present during the meal or snack? (Count target child)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10+	1, 2, 3, 4+
# of adults present at meal	How many adults were present during the meal or snack? (Count yourself)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10+	1, 2, 3+
Who prepared the meal	Who prepared this meal? (Select all that apply)	Myself; My partner/spouse; A child in the household; Another adult in the household; Other person(s) (e.g., potluck, visiting a friend); Food establishment (e.g., fast food, restaurant, grocery store deli); Other	1) Parent; 2) Another adult in household (My partner/spouse; another adult in household); 3) Child helped prepare; 4) Someone outside home (Other person, food establishment, other)
Location of meal	Where did this meal or snack take place?	Around a table or counter at home; On couch/chair in living area; Scattered throughout house; Standing up; In the car; At a restaurant; Other	1) Around a table or counter; 2) On couch/chair; 3) Scattered throughout house OR standing up; 4) Outside house (In car, at restaurant, other)
Type of food served	Which best describes the type of food served? (Select all that apply)	Fast food/take out (eaten at home or at a restaurant); Pre-prepared foods (e.g., macaroni and cheese, frozen meals) or purchased snacks (e.g., fruit snacks, granola bars, cereal); Homemade/freshly prepared (include fresh fruits and vegetables here)	1) Homemade/freshly prepared; 2) Pre-prepared foods; 3) Fast food/take out; 4) Combination of pre-prepared and fast food/ take out
What influenced the type of food served	What most influenced your decision to offer these foods?	Quick and easy to make; Child/family likes; Child asked for a specific food or meal; Desire to avoid conflict with child or a family fight; It was food I had available at home; It was a healthy option; Stressful day/busy schedule; Too tired to cook; It was a planned meal; It was available at the place we ate (e.g., restaurant, celebration/gathering); Other	1) Meal was planned/available (planned meal; food I had available, it was available at the place we ate); 2) Child-centered (child/family likes, child asks for a specific food, desire to avoid conflict with child); 3) Stress/tired response (quick & easy; stressful day/busy schedule; too tired to cook); 4) Health (it was a healthy option); 5) Other
Time to prepare meal	How long did it take to prepare this meal?	No time (e.g., fast food, fruit snacks or granola bar, premade, fresh fruits or vegetables, food at event/gathering); Less than 15 minutes; 15–30 minutes; 30 minutes to 1 hour; 1 hour or more; I did not prepare it	1) No time (e.g., fast food, fruit snacks) or I did not prepare it; 2) Less than 15 minutes; 3) 15–30 minutes; 4) 30 minutes to 1 hour; 5) 1 hour or more
Weekday or Weekend meal		Weekday; Weekend	Determined from time stamp of day survey was completed
Covariates			
Household race	Which racial/ethnic group best describes your family?	White, African American, Hmong, Somali, Native American, Latino	Participants self-identified which racial/ethnic group best described their household.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Construct	Question	Response Options	Variable Creation
Ecological Momentary Assessment Variables			
Number of children in household	How many children (younger than 18 years old) are living in the home?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10+	1, 2, 3, 4+
Household structure	1. After yourself, who is the person in the home most responsible for caring (e.g., feeding) for the target child? [If there is not a second caregiver, write "None"] 2. How many adults (18 and older) are living in the home?	One parent with no other adults; One parent with other adults; Two parents with no other adults, Two parents with other adults	These four categories were created using the parent-report of the number of people in the household along with the parent's report of a second caregiver.

J Nutr Educ Behav. Author manuscript; available in PMC 2022 April 11.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2:

Frequency of Watching TV During Family Meals Overall and by Race/Ethnicity

Meal Type	Total N	Total TV present (% with TV present)	Black (412 meals)	White (454 meals)	Hmong (502 meals)	Latino (448 meals)	Native American (429 meals)	Somali (514 meals)
Breakfast	810	120 (14.8%)	22 (24.7%)	10 (7.8%)	46 (30.1%)	15 (12.4%)	11 (8.4%)	16 (8.6%)
Lunch	505	89 (17.6%)	23 (27.4%)	4 (7.8%)	41 (37.6%)	6 (6.7%)	5 (6.0%)	10 (11.2%)
Dinner	1052	124 (11.8%)	41 (20.0%)	10 (6.9%)	36 (18.2%)	14 (7.7%)	10 (5.2%)	13 (10.0%)
Total	**2,367**	**333 (14.1%)**	**86 (22.8%)**	**24 (7.4%)**	**123 (26.7%)**	**35 (9.0%)**	**26 (6.4%)**	**39 (9.6%)**

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 3:

Association between Family Meal Variables and Watching TV During Family Meals7

	Unadjusted Meals[1]			Adjusted Meals[1,2]		
# of children present at meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
1	0.17	(0.12 to 0.22)		0.19	(0.12 to 0.26)	
2	0.13	(0.08 to 0.19)		0.14	(0.09 to 0.2)	
3	0.15	(0.09 to 0.22)		0.16	(0.1 to 0.22)	
4 +	0.13	(0.07 to 0.2)		0.11	(0.07 to 0.15)	
			0.7			0.05
# of adults present at meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
1	0.20	(0.14 to 0.26)		0.19	(0.14 to 0.24)	
2	0.09	(0.06 to 0.13)		0.10	(0.07 to 0.12)	
3+	0.07	(0.04 to 0.1)		0.09	(0.05 to 0.13)	
			<0.001			**<0.001**
Who prepared the meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
Parent	0.15	(0.11 to 0.2)		0.15	(0.11 to 0.18)	
Another adult in household	0.12	(0.06 to 0.17)		0.14	(0.08 to 0.21)	
Child helped prepare	0.17	(0.06 to 0.28)		0.16	(0.07 to 0.26)	
Someone outside home	0.07	(0.03 to 0.11)		0.08	(0.04 to 0.12)	
			0.05			0.1
Location of meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
Around a table or counter	0.12	(0.08 to 0.16)		0.12	(0.09 to 0.16)	
On couch / chair	0.33	(0.22 to 0.43)		0.32	(0.22 to 0.42)	
Scattered throughout house OR standing up	0.16	(0.08 to 0.24)		0.15	(0.09 to 0.21)	
Outside home	0.06	(0.01 to 0.11)		0.07	(0.02 to 0.12)	
			<0.001			**<0.001**
Type of food served						
	Probability	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
Homemade / freshly prepared	0.13	(0.08 to 0.18)		0.13	(0.09 to 0.17)	
Pre-prepared foods	0.16	(0.11 to 0.21)		0.17	(0.12 to 0.22)	
Fast food / take-out	0.13	(0.08 to 0.18)		0.12	(0.08 to 0.17)	
Combination of pre-prepared and fast food	0.09	(−0.04 to 0.22)		0.07	(−0.02 to 0.16)	
			0.6			0.1

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

	Unadjusted Meals[1]			Adjusted Meals[1,2]		
What influenced the type of food served	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
Meal was planned/available	0.08	(0.05 to 0.11)		0.08	(0.05 to 0.1)	
Child-centered	0.18	(0.12 to 0.25)		0.18	(0.13 to 0.23)	
Stress/tired response	0.20	(0.14 to 0.26)		0.20	(0.15 to 0.25)	
Health	0.12	(0.06 to 0.18)		0.14	(0.08 to 0.19)	
Other	0.07	(−0.03 to 0.17)		0.08	(−0.02 to 0.18)	
			<0.001			**<0.001**
Time to prepare meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
No time (e.g., fast food, fruit snacks)/I did not prepare it	0.10	(0.06 to 0.14)		0.11	(0.06 to 0.16)	
Less than 15 minutes	0.17	(0.12 to 0.22)		0.18	(0.13 to 0.23)	
15–30 minutes	0.16	(0.09 to 0.24)		0.15	(0.09 to 0.21)	
30 minutes to 1 hour	0.15	(0.1 to 0.19)		0.14	(0.1 to 0.18)	
1 hour or more	0.04	(0.01 to 0.08)		0.05	(0.02 to 0.07)	
			0.002			**<0.001**
Weekday or Weekend meal	**Probability**	**95% CI**	***p-value***	**Probability**	**95% CI**	***p-value***
Weekday	0.14	(0.1 to 0.18)		0.14	(0.11 to 0.17)	
Weekend	0.14	(0.09 to 0.19)		0.14	(0.10 to .18)	
			0.9			0.9

1. Unadjusted and Adjusted generalized estimating equations with a Poisson error structure, log link, independent working correlation structure, and Huber-White robust standard errors were used to estimate probabilities and 95% confidence intervals.

2. Adjusted for household race, # of children in the household and household structure (one parent no other adults, one parent with other adults, two parents with no other adults, two parents with other adults).