Published in final edited form as:

J Dev Behav Pediatr. 2018 May ; 39(4): 310–317. doi:10.1097/DBP.0000000000000556.

Maternal mental representations of the child and mobile phone use during parent-child mealtimes

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Abstract

Objective—Qualities of the parent-child relationship have not been explored as predictors of parent mobile device use during parent-child activities.

Method—In 195 mother-child dyads enrolled in an ongoing cohort study, maternal mental representations of their child (ability to reflect on their child's characteristics, emotional state, and their parenting role) were evaluated via the Working Model of the Child Interview (WMCI), a validated semi-structured interview. WMCI scale scores were examined as predictors of active maternal mobile device use during parent-child eating encounters (videotaped home mealtimes and structured laboratory-based protocol) in multivariate logistic regression models.

Results—Children were 5.9 (SD 0.7) years old, mothers were 31.5 (SD 7.4) years old, and 73.3% of mothers were of white non-Hispanic race/ethnicity. During the family mealtime, 47 (24.1%) mothers actively used a mobile device at least once, while during the structured eating protocol, 44 (22.6%) mothers used a device. Controlling for maternal race/ethnicity, education level, and child sex, WMCI subscales were associated with device use during home mealtimes (higher Child Difficulty) and the eating protocol (higher Child Difficulty, lower Richness of Perceptions and Caregiving Sensitivity).

Conclusion—Maternal mental representations of their child were significantly associated with using mobile devices during eating encounters. More research is needed to understand directionality and longer-term associations between mobile device use and parent-child relationship characteristics.

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Conflict of Interest: The authors have no conflicts of interest relevant to this article to disclose, and there are no corporate sponsors of this research.

Keywords

Mobile device; mobile phone; parent-child interaction; parenting

INTRODUCTION

Studies suggest that when digital media (e.g., television (TV), videos, mobile devices) are used in the presence of children, parents and children speak to each other less,^{1–3} have less complex or responsive play interactions,⁴ and exchange fewer nonverbal interactions.⁵ When parents' attention is absorbed in mobile devices such as smartphones or tablets around children during meals⁶ or in the playground,⁷ public observational studies have documented parent behaviors such as less conversation, more hostility, and less responsiveness. Now that the majority of parents in the United States have mobile devices,⁸ these devices can be integrated into any family routine and potentially disrupt parent-child interactions. However, because prior studies have been largely observational, assumptions of directionality cannot be made. Only Kirkorian and colleagues (2009) used an experimental laboratory-based design to manipulate the presence of background TV during parent-child play interactions. They found that in the 30 minute interval when the TV was on, parents uttered fewer words and were less responsive to child bids compared to a 30 minute interval without the TV on.⁴

On the other hand, it is also highly plausible that parent mobile device use around children is a signal of other underlying differences, such as frustration with their child or impairments in the parent-child relationship. Through in-depth interviews with parents of young children, Radesky and colleagues (2016) found that parents frequently reported using mobile devices to “escape” the boredom of parenting, to self-regulate when stressed, and to seek social support when feeling isolated. This was especially true for parents who did not work outside the home.⁹ Parents of children with more internalizing and externalizing behavior problems were also more likely to report more frequent technology use during daily parent-child activities in a recent cross-sectional study.¹⁰ Although one study did not find associations between self-reported parenting style and observed maternal mobile phone use during a laboratory-based parent-child interaction task,⁵ other aspects of the parent-child relationship deserve examination. For example, in adults, heavy mobile device use behaviors have been associated with lower intimate relationship satisfaction¹¹ and anxious dependence in relationships.¹² However, mobile device use has not been studied with regard to similar aspects of the parent-child relationship.

During parent-child interactions, parent mental representation regarding the child's thoughts, motivations, and causes for their behavior are important predictors of how the parent responds to the child.¹³ Also called the “working model of the child,” these representations comprise the parent's cognitive and affective perspectives regarding their relationship with the child and the child's personality.^{13,14} Mental representations are associated with quality of mother-child interactions including standardized measures of parenting sensitivity, warmth, intrusiveness, negativity, and hostility,^{13,15,16} and predict later attachment security.¹³ A caregiver's mental representation of the child can be measured via open-ended interview (the well-validated Working Model of the Child Interview, or WMCI) and rated

along multiple dimensions: Richness of Perceptions (how they efficiently convey “who” their child is); Caregiving Sensitivity (how they describe recognizing and responding to child needs); Intensity of Involvement (how immersed they are in the parent-child relationship); Acceptance of the Child (rejection versus delight in the child); and Child Difficulty (how challenging the child is perceived to be; see Table 1 for full descriptions of all WMCI scales). The original WMCI scale has been expanded to include another aspect of parent mental representations, Parenting Reflectivity,¹⁵ which captures the parent’s thinking about their child and themselves in the parenting role.

Understanding links between caregiver working model representations and mobile device use behaviors may be helpful for several reasons. First, if caregivers with less rich, sensitive, or reflective models of their child, or models that perceive the child as difficult, are more likely to become absorbed in mobile devices during parent-child activities, this may displace opportunities for communication or social-emotional engagement that could benefit the already strained parent-child relationship. Alternatively, frequent interruption of parent-child activities with mobile device use might make it more difficult for parents to read children’s social and emotional cues,⁹ which in turn could lead to less rich, sensitive, or reflective working models. Although mobile device-based connection to social supports or entertainment might provide stress relief for parents of difficult children, it may also be unexpectedly distressing.⁹ Finally, since mobile media increasingly occupies a space in clinical encounters or therapeutic sessions, providers of pediatrics, infant mental health, or family therapy might choose to specifically talk about the role media is playing in parent-child dynamics.

The present study aimed to examine associations between maternal mental representations of their children and maternal mobile device use behaviors during home- and laboratory-based eating activities. This approach improves upon prior studies that only included observations in public^{6,7} or laboratory settings,⁵ as it additionally includes video-recorded eating encounters in the home. Family mealtimes are an important daily routine for parents and children that are associated with child well-being,¹⁷ and as such are often used as a paradigm for studying parent-child interaction. Video-recorded observations also are a more objective measure of mobile device use, which is less accurately assessed by self-report.¹⁸ We hypothesized that mothers with less rich, sensitive, or reflective representations of their child, or with working models that are less psychologically involved or less accepting, would be more likely to use mobile devices during mealtimes. We also hypothesized that mothers who perceive their child as difficult would be more likely to use mobile devices during these mother-child encounters.

METHODS

Participants and Study Design

Data for the present analysis were collected as part of a longitudinal cohort study examining feeding interactions, child eating behaviors, stress, and obesity.^{19,20} Participants included 301 caregivers and their young children recruited from Head Start (a free, federally-funded preschool program for low-income children) in Southeastern Michigan between 2009 and 2011; children were 3–4 years old at initial recruitment. Eligibility criteria included that the

child was born at term without significant perinatal complications and had no significant current medical or developmental problems, that mother and child were English speaking, that mother did not hold a 4 year college degree, and that the child was not in foster care. Weight status was not in inclusion criterion for the study. In this sample, 95% of the primary caregivers were biological mothers and the remaining 5% were adoptive mothers, stepmothers, and grandmothers; thus, the entire sample was referred to as “mothers.” All mothers provided written informed consent at enrollment and follow-up data collection. This study was approved by the University of Michigan Institutional Review Board.

Participants took part in a second wave of data collection when children were approximately 6 years old (June 2011 – May 2013). This wave of data collection provided the data for the current analysis. It involved survey measures, a semi-structured interview with the mother (completed by 295, 98.0%), videotaped dinners in participants’ homes (completed by 269 dyads, 89.4%) and a laboratory-based structured mother-child eating task (completed by only 228 dyads, 75.7%; because it involved eating novel foods, this protocol excluded children or mothers with a history of food allergies or adverse food reactions). Our final analytic sample included 195 mothers (64.8%) with complete data on the Working Model of the Child Interview and who completed both videotaped eating encounters.

Maternal Working Model of the Child

Maternal mental working models of the child were assessed via the validated “Working Model of the Child Interview” (WMCI; Zeanah & Benoit, 1995),¹⁴ which is a semi-structured interview designed to assess several dimensions of the parent’s childrearing experience and relationship with their child.²¹ The structure and coding of the WMCI are informed, in part, by the Adult Attachment Interview, a widely validated interview that assesses adults’ representations of their own early childhood experiences and that has been validated extensively against child attachment and social-emotional outcomes. Results of the WMCI are stable over time²² and predict parenting behavior such as warmth, sensitivity, intrusiveness, negativity, and hostility.^{23,24} Validation of the WMCI has included studies demonstrating that more distressed representations characterized by low levels of acceptance, high perception of child difficulty, low levels of involvement and/or sensitivity have been associated with insecure child attachment and less sensitive observed parenting. For more information regarding the development and validation of the tool, see Vreeswijk CM, Maas AJ, & van Bakel HJ, 2012.¹³ Mothers participated in an abbreviated version of the WMCI, which has been demonstrated to be reliable and valid among sociodemographically diverse populations.^{15,21} Interviews were performed by trained research assistants with mothers alone; children were not present. Interviewers were trained by a doctoral level research psychologist to avoid giving positive, negative, or leading reactions to mothers’ responses.

Sample questions from the abbreviated WMCI include: “Can you give me three words or phrases to describe [child name]’s personality?” “Can you tell me a favorite story about [child name]?” “Who does your child remind you of?” “What is most difficult about [child name]’s behavior right now for you to handle?” All interviews were audiotaped, transcribed, and independently coded by two different teams who were trained to reliability by the senior

author (KR) for the following Working Model of the Child scales: Richness of Perceptions, Caregiving Sensitivity, Intensity of Involvement, Acceptance of the Child, Child Difficulty, and Parenting Reflectivity (see Table 1 for descriptions). Codes were applied as ordinal variables (1 through 5), with 1 representing the lowest degree of the scale characteristics, and 5 the highest. One narrative was considered uncodable due to mild limitations in spoken English. To assess inter-rater reliability, 15% of transcripts were double coded, and disagreements were resolved by consensus. Intraclass correlation coefficients for WMCI scales were > 0.76 .

Maternal mobile device use

Maternal use of mobile devices was coded from two video-recorded eating encounters: a home-based videotaped mealtime that was used to assess naturalistic eating behaviors; and a structured eating task intended to quantify mother-child interactions in a controlled setting (usually a quiet room at a community center or Head Start). For the naturalistic mealtime assessment, each mother was loaned a videocamera and asked to record three typical meals over the course of one week. It was not a goal of either video-recording to assess mobile device use, which occurred spontaneously.

During the structured eating task, mother and child were seated alone at a table while four foods were presented individually and sequentially in random order. After presentation of 2 servings of the food, mother and child were invited to try the foods and then were left alone for four minutes while videotaped, after which the food was removed and the next food presented. After each food, a research assistant briefly interviewed the mother and child about their opinions of the food. Mothers were aware that they were being videotaped; no prompts were given regarding whether a mobile device could or could not be used; and there were no signs instructing participants not to use devices (i.e., as occur in some medical settings).

We applied an established coding scheme for maternal mobile device use (Author citation, 2015) to both sets of video-recordings, classifying mothers by 3 modes of use: (1) no device visibly present, (2) quick check (i.e., present on table; checked quickly for the time or to read an incoming text but then turned the screen off, set it back down, or put it in a pocket/bag), or (3) actively used (e.g., talked on the phone whether or not the call was placed or received, replied to a text, swiping or typing motions made with fingers). Inter-rater reliability for the 14% of videos that were double-coded was high (Cohen's kappa = 0.97 for structured eating task; 0.75 for family mealtimes). Based on prior work suggesting that high caregiver engagement with devices – rather than fleeting – may be most disruptive to caregiver-child interaction,⁶ we collapsed the no device present category with the quick check category, and compared these mothers to those who actively used their device ever during at least one of the home-based mealtimes or during the structured eating task.

Potential Confounders

Mothers reported their birth date, race/ethnicity (categorized for this analysis as non-Hispanic white vs. Hispanic/non-white), educational attainment (categorized for this analysis as high school diploma or equivalent vs. $>$ high school diploma), single parent

status, number of adults in the household, and child sex. Most mothers ($n = 204$) reported their household income, from which we calculated household income-to-needs ratio by dividing the annual household income by the federal poverty limit for the given year for a family of a specific size (an income-to-needs ratio of 1 indicates that the family is at 100% of the federal poverty level). Mothers also completed the Chaos, Hubbub, and Order Scale (CHAOS), a 15-item validated measure of environmental confusion (high level of noise, crowding, and disorganization), processes that are distinct from other sociodemographic measures and reflect emotional and organizational chaos in the home (Cronbach's alpha in this sample = .79).²⁵

Analysis

After examining all variables for normality, we calculated bivariate associations between participant characteristics, WMCI representation scale scores (Richness of Perceptions, Caregiving Sensitivity, Intensity of Involvement, Acceptance of the Child, Child Difficulty, and Parenting Reflectivity; each modeled as an ordinal variable 1 – 5) and active maternal mobile device use during the family mealtime and structured eating tasks using Pearson correlations, t-tests, and Chi Square tests of association.

To examine independent associations between maternal WMCI representations and active maternal mobile device use, we built logistic regression models, modeling each WMCI representation scale as an ordinal variable. We created separate models for maternal mobile device use during the 1) family mealtime and 2) structured eating task, examining the odds of active mobile device use versus no device use/quick check. We added potential confounders to the model one at a time if they demonstrated bivariate associations with predictor or outcome variables, retaining them in the model if their addition led to a 10% change in the effect estimate for the predictor. Because of the high number of predictor variables, to be conservative we included all covariates that showed confounding in any models. Final covariates included were maternal education, maternal race/ethnicity, and child sex. We performed all analyses using SAS software version 9.3 (SAS Institute Inc., Cary, NC).

RESULTS

In the analysis sample, 73.3% of mothers were non-Hispanic white race/ethnicity, with a mean age of 31.5 (SD 7.4) years (Table 2). During the family mealtime, 47 (24.1%) mothers actively used a mobile device at least once, 44 (22.6%) mothers used a device during the structured eating task, and 18 (9%) used a device in both. Active maternal mobile device use during family mealtimes was associated with higher maternal education and child female sex, while maternal mobile device use during the structured eating task was associated with Hispanic ethnicity or nonwhite race. No other maternal, child, or household characteristics were significantly associated with maternal mobile device use in bivariate analyses (Table 2).

Maternal representations derived from the WMCI showed associations with participant characteristics. Richness of Perceptions was positively correlated with maternal education ($r = 0.20$) and income-to-needs ratio ($r = 0.16$). Caregiving Sensitivity was negatively

correlated with CHAOS score ($r = -0.22$). Acceptance of the Child was positively correlated with maternal age ($r = 0.15$) and negatively correlated with CHAOS score ($r = -0.18$). The Child Difficulty subscale was negatively correlated with maternal age ($r = -0.16$) and positively correlated with the number of adults in the household ($r = 0.20$) and CHAOS score ($r = 0.20$).

In bivariate analyses, only Richness of Perceptions, Caregiving Sensitivity, and Parenting Reflectivity were significantly associated with active maternal mobile device use during the structured eating protocol. WMCI subscales were not significantly associated with active mobile device use during family mealtimes (Table 3).

Multiple regression analyses showed that, controlling for maternal race/ethnicity, education level, and child sex, maternal device use during family mealtimes was positively associated with the WMCI Child Difficulty subscale (Table 4). Maternal device use during the structured eating task was negatively associated with the Richness of Perceptions and Caregiving Sensitivity subscales, was marginally associated with the Parenting Reflectivity subscale, and was positively associated with the Child Difficulty subscale (Table 4).

DISCUSSION

In this low-income sample, we found associations between maternal mobile device use during family eating encounters and maternal mental representations of their relationship with their child. Specifically, we found positive associations between active mobile device use during family meals with perception of the child as difficult. Maternal mobile device use during a laboratory-based structured eating task, which is designed to capture how parents support their child's introduction to familiar and novel foods, was also positively associated with perception of the child as difficult, and negatively associated with the mother's richness of perceptions of the child and caregiving sensitivity. Taken together, these findings suggest that parent mobile device use during daily routines with children may be a reflection of underlying relationship difficulties.

It is interesting that WMCI scales were associated differentially with maternal mobile device use at home versus in a structured laboratory setting. Family meals at home might be considered a daily routine that allows for more emotional communication²⁶ or intimacy with the child; or, alternatively as a time when common behavioral management or eating conflicts arise with young children. Parents who perceive their children as more difficult to manage and connect with may withdraw from what they perceive as a difficult daily routine. Several studies suggest that adults use mobile devices as a self-regulation tool^{9,27} or as a signal that they are withdrawing from social interaction.²⁸ One recent naturalistic study of mobile device use during family routines found that parents described intentional mobile device use as a "desirable disengagement" to find time for themselves when faced with parenting demands,²⁹ which is consistent with our results.

On the other hand, the structured eating protocol was performed in a controlled setting and was meant to challenge parents and children to react to novel and familiar foods. This was a somewhat uninteresting task with several-minute stretches of downtime, which may have

induced habit-driven checking of the phone when the mother was bored. Mothers with mobile device use during this task showed less rich perceptions of their child, lower sensitivity, and marginally less parenting reflectivity, and thus may have been less attuned to their child's behavior in the moment. It is also possible that less reflective individuals partake in more habit-driven or "ritualistic" mobile phone use. In a recent investigation exploring parent motivations for different mobile phone use behaviors, participants reported via real-time text messages that their use of social media, checking email, or checking newsfeeds was often a response to boredom,³⁰ which may have been a motivator in our participants. The converse explanation is that repeated interruption of parent-child meals or activities by parent mobile device use could influence the parent's ability to read the child's social cues³¹ and develop coherent understanding of the child's personality and behavior.

Our findings are consistent with other studies showing links between relationship dissatisfaction and technological interference in daily activities.¹¹ However, it is important to consider that the association between parent-child relationship quality and parent mobile device use is likely transactional.³² In general, parents with lower reflectivity may be more likely to use technology during meals (i.e., they are less interested in the child's experiences, feel less distress at disengaging, or have difficulty conceptualizing what the child might be thinking in response); this in turn may displace opportunities to learn and practice with the child, may lead to more frustration if the child responds with negative behavior,⁶ and thus becomes self-reinforcing. An alternative explanation, however, is that WMCI subscale scores are a marker of another unmeasured psychological characteristic³³ or situational difficulty (e.g., work-life spillover;³⁴ higher daily stress) that is associated with high mobile phone use.

Mothers with higher educational attainment and non-White race/ethnicity were also more likely to actively use mobile devices during home mealtimes and the structured eating protocol, respectively. This is the first study to demonstrate differences in parent mobile device use during parent-child activities by parent sociodemographic characteristics, but is consistent with prior work showing greater overall media use in minority race/ethnicity families.³⁵

In future research, it will important to examine how aspects of the parent-child relationship and mobile technology use interact over time, or vary by child or parent characteristics. Specifically, mobile device use by fathers during parent-child activities and resulting parent-child dynamics may differ from that of mothers.¹⁰ Although we hypothesize that recurrent displacement of parent-child activities would be detrimental, if mobile device use allows more effective stress management or social connection³⁶ for parents in the face of parenting difficulties, it may be an overall positive influence for some. Given its observational design, our study was not able to assess the content of maternal mobile device use, which parents describe as a strong determinant of their attentional absorption or emotional reactivity⁹ to their devices when around their young children.

Several limitations are worthy of mention. Our study sample was recruited from Head Start, so represents a racially diverse group of lower-income children whose mothers have not attained a college degree, but as such, results cannot be generalized to other populations.

However, because media use is significantly higher in lower-income households,³⁵ examination of the interpersonal processes within low-income families is an important contribution to the field. This study only recruited female caregivers, so our results are not applicable to father-child relationships. In addition, we were not able to assess parent-child interactions outside of the mealtime context – i.e., whether mobile devices are used during playtime, bedtime routines, or other activities – which would have provided stronger support for additional insight into our hypotheses. Yet, our use of an objective measure of mobile device use via videotaping rather than self-report, which is often inaccurate regarding mobile device use,¹⁸ is an area of strength. Videotaped observations are valid reflections of behavior in more naturalistic contexts,³⁷ but some device use behavior may have been inhibited by mothers' knowledge that they were being videotaped. By conducting this study within a cohort containing rich data on contextual variables often associated with family media use, we were also able to control for potential confounders.

CONCLUSION

Mobile devices are complexly designed computers that interact with users' characteristics,³⁸ and pervade daily activities,³⁹ in ways that both complement and disrupt established dynamics. We found that qualities of maternal mental working models of their child that index parents' ability to reflect on their child's characteristics and emotional state were significantly associated with likelihood of using a mobile device during eating encounters. These results have implications not only for clinical recommendations to create “unplugged” daily routines such as meals,⁴⁰ but also for digital designs that allow parents to take a break and relieve stress when needed, but then re-engage with family activities.⁴¹

Acknowledgments

Research Support: 5R01HD061356 (PI: JCL)

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Table 1

Maternal representation descriptions from the Working Model of the Child Interview

Representation and Description	
Richness of Perceptions	This scale is used to measure the richness of the caregiver's perceptions of the child and their relationship with the child. Rather than merely a count of the number of words used, it is also how much the words are used to elaborate a sense of "who" the child is. Caregivers who richly describe details about their child score at the high end of the scale; in contrast, caregivers who say a lot that does not convey much about the child's personality, feelings, and behavior score at the lower end of the scale.
Caregiving Sensitivity	This scale reflects the caregivers' ability to recognize and respond to the child's emotional and physical needs and experiences. High scores reflect the parents' recognition of the child as experiencing a range of emotional states and biological needs, and a consistent, convincing willingness to respond to these needs.
Intensity of Involvement	This scale assesses the caregiver's psychological preoccupation with the child and/or the caregiver's psychological immersion in the caregiver-child relationship and in parenting. High scores reflect clear, consistent, and striking affective engrossment, while low scores reflect a lack of psychological involvement with the child.
Acceptance of the Child	This scale captures the degree to which the caregivers' representation of the child is colored by rejection (low ratings) or acceptance and genuine delight in the child (high ratings).
Child Difficulty	This scale is used to rate the caregiver's perception of the child as difficult to care for and relate to. This includes <i>direct statements</i> by the caregiver about the child <i>as well as indirect indications</i> (e.g., sarcasm) that the child is especially difficult. The attempt is not to ascertain how difficult the child's behavior is in an absolute sense, but rather to measure how difficult the caregiver perceives the child to be.
Parenting Reflectivity	This scale captures the degree to which the caregiver acknowledges and tolerates complex feelings about the parenting role, and/or searches for the mental meaning that motivates their own and their child's behavior. High scores are given when parents indicate that they see emotions and mental states as motivating behavior, when complex feelings are acknowledged and tolerated, and when parents understand that their own behaviors can impact their child's mental state and experience.

Table 2

Participant characteristics and their associations with maternal mobile device use during family mealtime observation and structured eating protocol in 195 mother-child pairs enrolled in the ABC Feeding Study.

	Whole cohort	Family Mealtime Observation			Structured Eating Protocol		
		No Device/Quick Check (n=148)	Actively Use (n=47)	p value*	No Device/Quick Check (n=151)	Actively Use (n=44)	p value*
<i>Categorical variables</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>		<i>n (%)</i>	<i>n (%)</i>	
Maternal race/ethnicity							
White/non-Hispanic	143 (73.3)	112 (75.7)	31 (66.0)	.19	116 (76.8)	27 (61.4)	.04
Other	52 (26.7)	36 (24.3)	16 (34.0)		35 (23.2)	17 (38.6)	
Maternal education							
<= High School diploma	87 (44.6)	72 (48.7)	15 (31.9)	.04	65 (43.1)	22 (50)	.41
> High School	108 (55.4)	76 (51.4)	32 (68.1)		86 (57.0)	22 (50)	
Single parent							
Yes	81 (41.5)	57 (38.5)	24 (51.1)	.13	59 (39.1)	22 (50)	.20
No	114 (58.5)	91 (61.5)	23 (48.9)		92 (60.9)	22 (50)	
Child Sex							
Male	95 (48.7)	78 (52.7)	17 (36.2)	.048	74 (49.0)	21 (47.7)	.88
Female	100 (51.3)	70 (47.3)	30 (63.8)		77 (51.0)	23 (52.3)	
<i>Continuous variables</i>		<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>p value*</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>p value*</i>
Maternal Age (y)	31.5 (7.4)	31.9 (7.7)	30.0 (6.5)	.22	31.8 (7.4)	30.3 (7.5)	.22
Income to Needs Ratio (based on Middle of income range)	0.94 (0.6)	0.95 (0.6)	0.90 (0.7)	.63	0.95 (0.6)	0.91 (0.7)	.74
Child Age (mos)	71.0 (8.3)	71.0 (8.7)	71.1 (6.9)	.94	70.6 (8.3)	72.3 (8.5)	.26
Total adults (18 y and up) living in household	2.6 (1.0)	2.7 (1.0)	2.4 (1.1)	.12	2.6 (1.0)	2.6 (0.9)	.79
Family Chaos Scale: Total Score	4.2 (3.2)	4.1 (3.2)	4.2 (3.1)	.96	4.1 (3.2)	4.2 (3.4)	.85

* for categorical variables, Fisher p value was used for many variables due to small expected cell count. For some continuous variables, wilcoxon test was used due to variables not being normally distributed

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Bivariate associations between Working Model of the Child Interview (WMCII) subscales and maternal mobile device use during family mealtime observation and structured eating protocol

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Table 4

Multivariate* associations between Working Model of the Child Interview (WMCI) subscales and odds of maternal mobile device use during a family mealtime and structured eating task

	Family Mealtime at Home OR (95% CI) For maternal mobile device use	Structured Eating Task OR (95% CI) For maternal mobile device use
WMCI Subscale		
Richness of Perceptions	0.87 (0.65–1.18)	0.72 (0.52–0.98)
Caregiving Sensitivity	0.89 (0.62–1.26)	0.67 (0.47–0.97)
Intensity of Involvement	0.76 (0.51–1.11)	0.75 (0.51–1.10)
Acceptance of the Child	0.79 (0.54–1.17)	0.72 (0.49–1.07)
Child Difficulty	1.91 (1.14–3.18)	1.65 (1.01–2.68)
Reflective Parenting	0.93 (0.70–1.23)	0.76 (0.57–1.02)

* Multivariate models adjusted for maternal race (white, non-Hispanic vs not), maternal education (>HS vs <=HS/GED), and child sex (female vs. male).