

Early Childhood Risk Factors for Mealtime TV Exposure and Engagement in Low-Income Families

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ABSTRACT

OBJECTIVE: To identify whether child and mother characteristics in early childhood predict TV exposure and engagement during mealtime in middle childhood.

METHODS: A total of 220 low-income mother-child dyads participated. Children were 4.26 years old (SD = 0.51) at baseline and 5.94 years (SD = 0.68) at 2-year follow-up. Mothers completed baseline measures of child negative emotionality and parenting practices. Family mealtimes were video recorded and coded for background TV exposure and child TV engagement. Multinomial logistic regression tested whether child emotionality and parenting practices during early childhood predicted risk of child TV exposure or engagement during mealtime, relative to no TV use, 2 years later.

RESULTS: Children with greater negative emotionality in early childhood were more likely to engage with TV during mealtime

than to have no TV. Similarly, early parenting disciplinary practices characterized by over-reactivity and laxness increased the risk for child TV engagement versus no TV during mealtime approximately 2 years later.

CONCLUSIONS: We identified 2 factors that associated with an increased risk for TV viewing during meals. Helping parents manage child negative emotionality using positive parenting strategies might reduce later child TV engagement and improve the quality of family mealtimes.

KEYWORDS: emotion regulation; longitudinal studies; mealtime; parenting; pediatric obesity; screen time; television

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WHAT'S NEW

Child negative emotionality as well as dysfunctional parenting practices (ie, over-reactivity, laxness) in early childhood predicted an increased risk for child TV engagement during mealtime (relative to no TV during mealtime) 2 years later. Families with these risk factors could be identified early to prevent unfavorable mealtime practices.

FAMILY MEALTIME IS a salient context for promoting child and family health. Shared family mealtimes have been linked to better child health outcomes, including higher consumption of healthy foods, lower consumption of unhealthy foods, and healthier eating patterns.¹ Recent longitudinal research has shown that frequency of family meals during childhood predicts reduced risk for obesity in adulthood.² Indeed, recommending that families share meals together each week is a key child health promotion message.

Despite the well documented importance of family mealtimes, TV and other electronic media use during

mealtime might compromise its potential benefits. For example, mealtime TV and other electronic media use is associated with poorer overall dietary quality of foods served at meals³ and overall dietary intake.⁴ To prevent unfavorable mealtime practices in childhood, it is essential that pediatricians identify, early in child development, which families might be at greater risk for TV use during mealtime. Identifying these early risk factors will enable tailoring of obesity prevention messages provided during well child visits.

Characteristics of children as well as their parents might play a role in family mealtime practices. Children with more challenging dispositions, for example, those prone to negative emotions and lability, might be more likely to be pacified with media during meals. Likewise, parents lacking effective discipline strategies might use TV to reduce conflict, or simply be more permissive with TV use during mealtime. Although child temperament and/or maternal factors as predictors of screen time in infants and young children has been examined in previous studies,^{5–7} it is not yet known whether child negative emotionality or poorer parenting practices predict later

mealtime TV use in middle childhood. Another gap in the literature is that previous studies have used parent reports of screen time, whereas observational methods might provide a more nuanced picture of children's meal time TV exposure. In the current study we aimed to fill these gaps by examining whether early childhood factors predict observed child TV exposure and TV engagement during mealtime in middle childhood.

METHODS

PARTICIPANTS

Participants in this study were part of a longitudinal cohort of mother-child dyads recruited from Head Start locations to participate in a study of child eating behavior between 2009 and 2011 (see also Gouling et al⁸). This study was approved by the authors' institutional review boards; primary caregivers provided informed consent to participate. Inclusion criteria were: child aged 3 or 4 years at enrollment, birth without peri- or neonatal complications, no current medical or developmental problems, mother as well as child fluent in English, and child not currently in foster care. Child emotion regulation measures were completed at baseline and parenting practices were completed, on average, 0.63 years (SD = 0.48 year) later. Mothers were contacted approximately 2 years afterward (2011–2013) for participation in a follow-up study that measured family mealtime practices, during which time family meals were video recorded. The final sample at follow-up consisted of 301 mother-child dyads. Of these dyads, 251 (83.4%) had video recordings codable for TV exposure; 220 of these 251 families had no missing data for the baseline measures of suboptimal discipline practices and child emotion regulation at baseline (73.1%). Thus, the final analytical sample consisted of 220 parent-child dyads.

PROCEDURE

Three typical dinnertime meals in the home were video recorded by mothers over a 1-week time span. Mothers were provided with a camera and instructions on how to do these recordings. Instructions were to record the entire meal and the child's upper body, and that the child's plate and drink should be in view throughout the video.

OBSERVATIONAL CODING

The second dinnertime meal recorded was selected for coding. Trained research assistants coded each video in 10-second intervals indicating whether the TV was audible ("background TV exposure") and whether the child attended to the TV screen or not (ie, indicated whether eye gaze was directed toward television; "TV engagement"). The research assistants were trained to reach a reliability criterion of a least Cohen $\kappa > 0.70$ (κ for background TV exposure = 0.88; κ for child TV engagement = 0.85). After achieving reliability (reached after coding 20 mealtime observations), the coders independently coded the remaining videos and double-coded 20% of videos to protect against coder drift. These interval codes were summed across the

meal and collapsed into 3 categories: 1) no TV exposure, 2) background TV exposure (ie, TV audible but no instances of child TV engagement), and 3) TV engagement (ie, child attended to TV at least once).

MEASURES

Suboptimal discipline practices were measured using the Parenting Scale.⁹ This scale measures lax and harsh parenting practices in the context of managing child behaviors. Items include, "When my child does something I don't like... I often let it go," "When I'm upset or under stress... I am picky and on my child's back," and "When my child misbehaves... I get so frustrated or angry that my child can see I'm upset." To get an overall score of dysfunctional parenting practices, we took the mean of all items (22 items; $\alpha = 0.82$). Response options ranged from 1 to 7, with higher scores reflecting poorer parenting practices.

Child negative emotionality was measured using the Emotion Regulation Checklist Liability/Negativity subscale,¹⁰ which was also completed by the mother. Items on this scale include: "is prone to angry outbursts, tantrums easily" and "responds angrily to limit-setting by adults." Response options ranged from 1 (rarely/never) to 4 (almost always). The mean of the items on the Liability/Negativity subscale was calculated, with higher scores indicating greater negative emotionality. This scale evidenced good reliability in the current study (16 items; $\alpha = 0.85$) and correlated with suboptimal discipline practices at $r = 0.13$ ($P < .05$).

DATA ANALYSIS

To test whether early childhood negative emotionality and discipline practices predicted relative risk for: 1) background TV exposure, and 2) child TV engagement during mealtime compared with no TV exposure (reference category), we conducted a multinomial logistic regression, adjusted for child sex (coded as male = 1; female = 2), child age, child race/ethnicity, and maternal education level (0 for high school degree/GED or less education and 1 for more than high school degree/GED). Negative emotionality and suboptimal discipline practices were entered in the same model as the independent variables. We chose the reference category of no TV exposure because previous research has indicated that background TV as well as TV engagement might have negative effects on child health.¹¹ As such, we were interested in whether these 2 separate TV use variables were predicted by early childhood factors.

RESULTS

SAMPLE CHARACTERISTICS

See Table 1 for demographic characteristics of the sample. Half of the children in the sample did not have the TV on during mealtime. Approximately 21% of children had background TV exposure. The remaining proportion of children had TV engagement (28.6%); on average, this proportion of children engaged with TV during 43% of their

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