



Research report

Confirmatory factor analysis of the Feeding Emotions Scale. A measure of parent emotions in the context of feeding [☆]



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ABSTRACT

Assessing parent affect is important because studies examining the parent–child dyad have shown that parent affect has a profound impact on parent–child interactions and related outcomes. Although some measures that assess general affect during daily lives exist, to date there are only few tools that assess parent affect in the context of feeding. The aim of this study was to develop an instrument to measure parent affect specific to the feeding context and determine its validity and reliability. A brief instrument consisting of 20 items was developed that specifically asks how parents feel during the feeding process. This brief instrument draws on the structure of a well-validated general affect measure. A total of 296 Hispanic and Black Head Start parents of preschoolers completed the Feeding Emotions Scale along with other parent-report measures as part of a larger study designed to better understand feeding interactions during the dinner meal. Confirmatory factor analysis supported a two-factor model with independent subscales of positive affect and negative affect (Cronbach's alphas of 0.85 and 0.84, respectively). Concurrent and convergent construct validity was evaluated by correlating the subscales of the Feeding Emotions Scale with positive emotionality and negative emotionality from the Differential Emotions Scale – a measure of general adult emotions. Concurrent and convergent criterion validity was evaluated by testing mean differences in affect across parent feeding styles using ANOVA. A significant difference was found across maternal weight status for positive feeding affect. The resulting validated measure can be used to assess parent affect in studies of feeding to better understand how interactions during feeding may impact the development of child eating behaviors and possibly weight status.

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Introduction

The family feeding environment remains one of the most important contexts in which children's eating behaviors are socialized. This area of research is essential to understanding the development of childhood obesity because parents lay the foundation for the development of appropriate child eating behaviors (Birch & Fisher, 1998; Sleddens, Gerards, Thijs, de Vries, & Kremers, 2011). Some studies have linked the broader family feeding environment (as measured by feeding styles) to child eating behaviors and child weight status (Hoerr et al., 2009; Hughes, Power, Orlet Fisher, Mueller, & Nicklas, 2005; Hughes et al., 2011; Hughes, Shewchuk, Baskin, Nicklas, & Qu, 2008). Different from goal-directed feeding behaviors (e.g., pressure to eat, restriction), feeding styles incorporate the emotional climate parents create with their children during feeding episodes (Hughes et al., 2005). The emotional climate created by parents includes their tone and affect which plays an important part in how children react to parenting directives around feeding (Hughes

Abbreviations: ANOVA, Analysis of Variance between Groups Data Entry; CFI, Comparative Fit Index; CFSQ, Caregiver's Feeding Styles Questionnaire; CITC, Corrected Item-Total Correlations; DES, Differential Emotions Scale; FES, Feeding Emotions Scale; PANAS, Positive and Negative Affect Schedule; RMSEA, Root Mean Square Error of Approximation; SRMR, Standardized Root Mean Squared Residual; WLSMV, Mean and Variance-adjusted Weighted Least Square.

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et al., 2011). Although feeding style typologies (authoritarian, authoritative, indulgent, and uninvolved) are defined, in part, by parent tone of voice and affect, these qualities are typically inferred and not directly measured (Hughes et al., 2005, 2011). Directly assessing parent affect is important because studies examining parent–child interactions have shown that parent affect has a profound impact on children's emotional well-being (Teti, Gelfand, Messinger, & Isabella, 1995).

Direct observation of parent–child interactions in the family feeding environment provides insight into the role of parental emotions during feeding. For example, Fiese, Winter, and Botti (2011) and Fiese, Hammons, and Grigsby-Toussaint (2012) observed family mealtimes to examine the relationship between several dimensions of parent–child interactions and child health. Family communication was a key component in their observational coding system. This communication component included interpersonal communication thought to promote appropriate interactions as well as critical communication thought to impair interactions. Fiese et al. (2011) defined critical communication as “disapproving or harsh statements (verbal content and/or tone) regarding another participant's behavior or personality” (p. 138). These researchers found that families who engage in more critical communication during family meals had children who were more likely to be overweight or obese (Fiese et al. 2012). Although these studies of family meals provide important information beyond what parents are saying to their children during feeding episodes including their tone of voice, parent affect was not included as a variable in the coding system (Fiese et al., 2012). A measure of parent affect could inform the emotional interpretation of parent and child interactions during feeding. For example, specific information on positive affect could tell us about parents' positive regard, warmth, and affection toward the child during feeding, which may alter the child's response to parenting directives (Belsky, Crnic, & Woodworth, 1995). More importantly, it would provide rich information on the emotional climate of the parent–child feeding dynamic informing prevention studies aimed at reducing childhood obesity.

Positive parent affect has been associated with better social-emotional and behavioral outcomes while negative parent affect has been associated with poorer child outcomes (Martin, Clements, & Crnic, 2002). Positive emotional interactions during family meals have been linked to better child health outcomes (Fiese et al., 2012; Jacobs & Fiese, 2007). When parent tone and affect have been directly measured, differences in feeding styles have been found. Hughes et al. (2011) found differences in parent negative (but not positive) affect across feeding styles. This could reflect the fact that in this study parent affect was observed and not self-reported. Most observational studies are relatively underpowered to detect differences. A short validated parent-report measure of parent affect may provide researchers with an easy way to examine affect in larger samples and thus provide better information regarding how affect at mealtimes impacts the eating behaviors of young children.

In reviewing the literature, only six studies directly examined parent affect, feeding, and child eating behaviors together in the same study and, in most of those studies, only parent negative affect was measured. In these studies, parent negative affect was associated with a number of socio-environmental influences on children's eating. Hampson, Tonstad, Irgens, Meltzer, and Vollrath (2010) found that higher maternal negative affectivity was associated with a higher likelihood of providing children under the age of 6 months with sweet drinks and solid foods. Hughes, Shewchuk, Baskin, Nicklas, and Qu (2008) and Hughes et al. (2011) found parental negative affect to be associated with highly controlling feeding of preschoolers. Hughes and colleagues, in a separate study, also found parental negative affect to be associated with an increased perception of feeding problems (Hughes & Shewchuk, 2012). In a longitudinal study, Hafstad, Abebe, Torgersen, and von Soest (2013), found that

maternal negative affectivity when the child was age 1 ½ predicted picky eating at ages 2 ½ and 4 ½. In contrast, child emotional eating was negatively associated with family open expression of affection and emotion in children ages 6 to 8 (Topham et al., 2011). Other studies have examined associations between maternal mental health (e.g., depression) and feeding/eating behaviors but have not explicitly assessed maternal affect (see El-Behadli, Sharp, Hughes, Obasi, & Nicklas, 2015, for a review).

A measure of parent affect specifically assessing affect in the feeding domain is needed to better understand the parent–child feeding dynamic. Furthermore, the studies mentioned above assessed general parental affect. Although relevant, assessing parent affect in the context of feeding would provide more specificity to parent–child feeding interactions and enable researchers to tease apart the impact of positive versus negative affect on various types of feeding directives and determine how they influence child eating behaviors.

The aim of this study was to develop an instrument to measure parent affect specific to the feeding context. Examination of affect and emotions specific to feeding can provide valuable information on how parent emotions in the context of feeding are related to outcomes such as children's eating behaviors, children's food preferences, children's enjoyment of eating, and quality of family mealtimes. In order to accomplish this, we developed a brief instrument of parental affect during child feeding that draws upon the structure of a well-validated general affect measure (Watson & Clark, 1992; Watson, Clark, & Tellegen, 1988). Researchers have attempted to directly observe parent affect and other parenting behaviors during observations of the family-eating environment but observational studies of family meal environments tend to be small and expensive to conduct (Kong et al., 2013). A novel parent-report questionnaire measuring parent emotion during feeding is less time-intensive and more cost effective than traditional observational studies and could advance our understanding of the emotional climate of parent–child feeding interactions. Such a measure would also contribute to smaller, observational studies, by providing additional data on affect from the parent's perspective. Initial evidence of concurrent and convergent construct validity was assessed by evaluating associations of parents' general and feeding-specific emotional experience, and evidence of concurrent and convergent criterion validity was assessed by evaluating associations of parent affect with feeding styles.

Subjects and methods

Participants

Participants were 296 Hispanic and Black parents of preschool-aged children recruited from Head Start centers in a large urban city in southwestern United States. The primary caregiver (referred to as parent hereafter) was defined as the person who was most often responsible for what the child ate outside of the Head Start school day. The families were part of a larger study designed to observe parent–child interactions during the dinner meal. Exclusion criteria included severe food allergies and known developmental delays (e.g., autism). Parents completed questionnaires as part of this larger study – these questionnaires were chosen because they assessed constructs that may impact the child eating environment. Characteristics of the participants are shown in Table 1.

Procedures

Parents were recruited for the study during child drop off and pick up at the Head Start centers, through presentations at Head Start meetings, and flyers posted at the Head Start centers. This study was part of a larger study involving observations in participants'

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