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Predictors of Parent Stress and Internalizing Symptoms Using the Multidimensional Feeding Questionnaire: An Exploratory Structural Equation Modeling Approach

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PREDICTORS OF PARENT STRESS AND INTERNALIZING SYMPTOMS USING THE MULTIDIMENSIONAL FEEDING QUESTIONNAIRE: AN EXPLORATORY STRUCTURAL EQUATION MODELING APPROACH

by

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ABSTRACT

PREDICTORS OF PARENT STRESS AND INTERNALIZING SYMPTOMS USING THE MULTIDIMENSIONAL FEEDING QUESTIONNAIRE: AN EXPLORATORY STRUCTURAL EQUATION MODELING APPROACH

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Pediatric feeding problems (FP) are common behavioral difficulties among typically developing children. Most studies focused on understanding the etiology and impact of pediatric feeding disorders (PFD) in clinical inpatient or outpatient settings. Although studies have documented the impact of PFD on parent stress and internalizing symptoms, these studies did not examine multiple feeding domains (e.g., child mealtime problems, parent feeding strategies, and the parent-child feeding relationship). The current study evaluated the psychometric properties of the Multidimensional Feeding Questionnaire (MFQ) and the association between feeding related variables and parent stress and internalizing symptoms among community parents and children. Results indicated that a 9-factor 48-item MFQ yielded good fit to the data. Increased frequency of Child Avoidant/Distracting Mealtime Behaviors was associated with increased parent stress and internalizing symptoms. Parents with higher scores on Consistent Mealtime Schedule subscale was associated with decreased parent stress and internalizing symptoms. Parents should be screened for mental health concerns during well-child visits. Clinicians should treat both child FP and parent mental health when concerns arise.

Keywords: feeding problem, exploratory structural equation modeling, feeding relationship

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Recent estimates suggested a 30-45% prevalence rate of feeding problems (FP) among typically developing children (Berlin et al., 2010; Chatoor & Macaoay, 2008; Manikam & Perman, 2000; Roberts & Steel, 2017; Silverman, 2015). While most FP and feeding concerns in early childhood are resolved on their own, about 5-10% of children develop chronic feeding disorders (i.e., Pediatric Feeding Disorders; PFD; Goday et al., 2019) and are placed at greater risk for developing short and long-term problems such as poor weight gain or significant weight loss (Manikam & Perman, 2000; Williams et al., 2015), invasive medical procedures (e.g., placement of nasogastric tube; Cohen et al., 2006; Williams et al., 2015), and increased caregiver distress (Harvey et al., 2013; Wu et al., 2012).

Due to the medical and mental health complications associated with PFD, most studies focused on understanding factors that contributed to the development and maintenance of PFD in inpatient or outpatient clinical settings (Berlin et al., 2009; Field et al., 2003; Manikam & Perman, 2000; Riordan et al., 1980). These studies also tended to investigate the relationship between factors in a piecemeal fashion, focusing on contributions of one or two factors (e.g., mealtime behavior problems and stress; e.g., Silverman et al., 2020) on PFD. The current proposal extended the existing feeding literature in several ways. First, the study recruited typically developing children within a community setting. A sample from the community, rather than an inpatient or outpatient feeding clinic, may have included children with non-clinical, sub-clinical, or clinical feeding problems. In addition, since the proposed sample captured a broader range of FP, it will be of greater clinical utility to providers in primary care settings. Second, Exploratory Factor Analysis (EFA) was used to decrease the number of items found in commonly used feeding measures to decrease completion time. Finally, exploratory structural equation modeling (ESEM) was used to assess the relationship between feeding related variables, including feeding strategies, parent-child feeding relationship, problematic mealtime behaviors, and parent variables, including stress and internalizing symptoms (i.e., anxiety and depressive symptoms) to capture a broader range of important feeding related constructs.

Normative Feeding Development

Successful feeding is often measured through culturally specific standards, including achievement of feeding milestones (e.g., beginning to eat solid foods), acquisition of adaptive social behaviors (e.g., table manners, saying “please and thank you”), and the child’s physical growth (Budd & Kedesdy, 1998). In the United States, parents and primary care physicians (PCP) refer to the American Academy of Pediatrics (AAP) for information about healthy child eating and feeding behaviors (AAP, 2018).

Between birth to six months of age, infants learn how to root, suck, and swallow (Satter, 1990) and become better at coordinating the suck-swallow-breathe response. In turn, parents develop skills that allow them to identify and act according to their infant’s signals of hunger and satiety. Introduction of semi-solid foods occur at about six months of age. During this stage, eating competence is measured by their ability to sit up, attempt to self-feed semi-solid foods using spoons and fingers, and accept solid foods with repeated exposure (AAP, 2018; Satter, 1990). Between six and twelve months of age, infants begin to progress from breast or bottle feeding and swallowing semi-solid foods to picking up, chewing and swallowing, and ingesting soft table foods (AAP, 2018; Satter, 1990). Notable changes during this period include the transition from on-demand breast or bottle feeding to scheduled meals and snacks with the family.

Between 12 and 18 months, a proficient eater shows interest in eating, participates in family meals, and stops to eat when full (i.e., eats to satiety). Notable changes during this period include the complete transition from nursing to eating scheduled meals at the table and snacks in between mealtimes. According to Satter (1990), the structured meal and snack times allow a child to come to the table hungry, but not famished. Parents must also refrain from on-demand feeding (i.e., laissez-faire feeding) between scheduled meals and snacks, as it interferes with a toddler's ability to self-regulate their eating. Between 18 and 36 months, a successful eater is one who is positive about eating, relies on internal hunger and fullness cues, enjoys a variety of foods, can try new food and learn to like them, participates in family meals and can sit throughout the family meal (Satter, 1990). For most children, picky eating is a normative and transient problem during the toddler and preschool years. Studies have shown that it can take approximately 10-15 times before a child accepts a newly exposed food (AAP, 2018).

Beginning at approximately three years of age, a preschooler maintains previous eating competencies. They participate in family meals, rely on interoceptive hunger and satiety cues, enjoy a variety of food, politely decline non-preferred foods, and tolerate lesser preferred foods. (AAP; 2018; Satter, 1990). During this developmental period, children are more influenced by peers in food preferences, as the social affective context for eating becomes more pronounced (Johnson & Holloway, 2006).

Pediatric Feeding Disorders

About one-fourth to one-half of typically developing children and their families experience FP (Berlin et al., 2010; Chatoor & Macaoay, 2008; Manikam & Perman, 2000; Roberts & Steel, 2017; Silverman, 2015) and can occur at any time during a child's development. FP are more common among children with developmental disabilities (up to 80%;

Field et al., 2003; Manikam & Perman, 2000) and among children with chronic medical conditions (40-70%; Mackner et al., 2001; Larson-Nath & Goday, 2019). Although most FP in early childhood are resolved on their own, about 5-10% of children develop severe feeding disorders that involve disruptions in nutritional and caloric intake, resulting in failure to thrive (Goday et al., 2019; Silverman & Tarbell, 2017) and requiring intensive inpatient or outpatient treatment. Severe feeding disorders, termed Avoidant Restrictive Food Intake Disorder (ARFID) in the Diagnostic and Statistical Manual of Psychiatric Conditions, Fifth Edition (DSM-5) is defined as:

> An eating or feeding disturbance (e.g., apparent lack of interest in eating or food; avoidance based on the sensory characteristics of food; concern about aversive consequences of eating) as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following: significant weight loss (or failure to achieve expected weight gain or faltering growth in children), significant nutritional deficiency, dependence on enteral feeding or oral nutritional supplements, marked interference with psychosocial functioning (p. 334).

Although the DSM-5 diagnosis of ARFID includes nutritional complications, it posited that the severity of the eating disturbance should exceed medical conditions routinely associated with feeding disorders and warrant additional clinical attention, and excluded children with skills deficit (APA, 2013; Silverman, 2010). Thus, Pediatric Feeding Disorders (PFD), defined as "impaired oral intake that is not age appropriate, and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction" (Goday et al., 2019), more accurately reflected children with this condition. For the full proposed diagnostic criteria for PFD, please refer to Goday and colleagues (2019). PFD are distinct from pica (i.e., persistent eating of non-nutritive substances), rumination (i.e., repeated regurgitation of food), and eating disorders (i.e., mental health conditions related to eating and compensatory behaviors; APA, 2013).

In sum, feeding concerns range in type and severity, ranging from mild non-clinical feeding concerns, to subclinical FP, and to clinical PFD. Since most empirical studies focused on PFD from inpatient or outpatient feeding clinic, this study focused on typically developing children from a community setting. A sample from the community captures a broader range of FP since it may include children with non-clinical, sub-clinical, or clinical FP.

Etiology and Maintenance of Pediatric Feeding Problems

Several theories suggested that FP have multiple etiologies, including medical, genetic, behavioral, psychological, contextual, and environmental factors (Berlin et al., 2009; Field et. al, 2003; Goday et al., 2019; Manikam & Perman, 2000; Riordan et al., 1980; Satter, 1986, 1990). Children with anatomical abnormalities of structures associated with oral-motor dysfunction, metabolic dysfunction, gastrointestinal problems, cardiorespiratory conditions, and food allergies are placed at greater risk for developing FP (Berlin et al., 2011). For example, oral cavity structural abnormalities or poor oral motor control and coordination could lead to challenges in biting, chewing, or swallowing. In turn, these challenges could interfere with the child's ability and motivation to eat or transition from one texture (e.g., mashed food) to another (e.g., semi-solid food) due to motor deficits. Additionally, children with chronic medical conditions might be subjected to invasive oral and facial procedures, resulting in associating pain and discomfort with the presentation of objects near the mouth and face (Piazza et al., 2008). Children with complex medical conditions might also experience feeding skill delay and deficits such as challenges with self-feeding, failure to advance textures from pureed to solid foods, or swallowing problems (Kerwin, 1999), which might result in food avoidance and FP.

Several studies suggested that environmental and interpersonal events during mealtime contribute to the maintenance of FP (Borrero et al., 2010; Piazza et al., 2003). These events include maladaptive or disruptive mealtime behaviors such as aggression, tantrums, food refusal or selectivity, or failure to adhere to dietary regiments (Crist & Napier-Phillips, 2001; Berlin et. al, 2010) and relational problems such as unpleasant or hostile mealtime environments, coercive mealtime interaction, and parent aversion to mealtime (Berlin et. al, 2010; Davies et al., 2007; Davies et. al, 2006). Although underlying biomedical issues such as gastroenterological problems, organic dysphagia (i.e., swallowing disorder due to congenital, acquired, or functional impairments), reflux, or aspiration have been resolved, maladaptive feeding behaviors persist (Manikam & Perman, 2000; Burklow et al., 1998) because a child might continue to associate pain with eating and refuse to eat (e.g., turning away from food or refusing to open their mouth when food is presented). Caregivers in turn, respond to the child's food refusal in ways that maintain problematic mealtime behaviors, such as meal termination (Borrerro et al., 2010) or coaxing and reprimands to eat the food (Piazza et al., 2003).

Parent stress and internalizing symptoms can negatively affect the parent-child relationship, which has been documented to contribute to the development, maintenance, and exacerbation of PFD (Davies et. al, 2006, Fishbein et al., 2016; West & Newman, 2003). For example, parents might present the food inappropriately to a child with medical comorbidities, which results in food refusal. Parents with higher stress and internalizing symptoms might interpret the child's refusal to eat as non-compliance or aggression, resulting in parental attempts to coerce or bribe the child to eat the presented food or remove the presented food to deescalate the child's aggression. Escape from the meal (i.e., removal of presented food) or attention (i.e., coercion or bribery) might function as reinforcement of the child's problematic mealtime behavior.

Negative Consequence of Pediatric Feeding Problems

Since 5-10% of children with FP develop PFD, children with FP are placed at greater risk for developing medical problems such as dehydration or electrolyte imbalance, poor weight gain or significant weight loss (e.g., consistent weight loss over a period of three months), lethargy and malnutrition, and aspiration (Cohen et al., 2006). Unresolved FP that develop into PFD could lead to invasive medical procedures such as the placement of nasogastric or gastrostomy tube or admission to an inpatient unit for treatment (Cohen et al., 2006) due to concerns about failure to thrive. It could ultimately lead to impaired cognitive development, physical delays, or death (Cohen et al., 2006; Garro et al., 2005). Given the high comorbidity between FP and chronic medical conditions (e.g., cancer, celiac disease, type 1 and type 2 diabetes), children who require dietary regulation (e.g., food allergies) are placed at greater risk for dysregulated eating, impaired nutritional status, exacerbation of the diseases process, and significant morbidity (Mackner et. al, 2001).

Parent Stress, Internalizing Symptoms, and Feeding Problems

Among studies that examined the experiences of families with PFD, many noted that primary caregivers of children with PFD experience significant personal stress (Garro et al., 2005; Greer et al., 2008; Fishbein et al., 2016; Silverman et al., 2020) and internalizing symptoms due to the medical complexities or comorbidities of the child (Didehbani et al., 2011). Children with PFD require increased parental involvement, intensive treatments, and inpatient hospitalization. As a result, families might manifest heightened stress, anxiety, and depression due to disruptions in family functioning, financial burdens, or the clinical nature of the disorder

(Franklin & Rodger, 2003; Fishbein et al., 2016). Evidence also suggested that parenting stress incrementally increases from non-clinical feeding problems to feeding disorder without a comorbidity to feeding disorder with a comorbidity (e.g., cerebral palsy, autism spectrum disorder, developmental delay). In other words, parents of children with comorbid PFD and developmental delays are most likely to experience heightened stress (Fishbein et al., 2016). These unique experiences among families with clinical PFD might not be reflective of the psychosocial and family functioning of parents with children with non-clinical or sub-clinical FP.

Among community samples, evidence regarding the relationship between parent mental health and the implications of FP are mixed. While some studies found empirical support for the association between depression and anxiety (Blissett et al., 2007; de Barse et al., 2016; Haycraft, 2020; Hughes et al., 2015) on FP, others found that anxiety, not depression, was associated with FP (Farrow & Blissett, 2005; Harvey et al., 2015). Yet other studies found that maternal affect was not associated with FP (Whelan & Cooper, 2000). Other studies suggested that inaccurate parent perception of their child's intake, especially when parents believed that their child is consuming inadequate nutrition, elevated parent anxiety (Harvey et al., 2015). Despite evidence of the relationship between parent internalizing symptoms and FP, the direction of causality and which mental health symptoms are associated with child FP have often been contradictory. Finally, while stress has been consistently documented among parents of children with PFD (Fishbein et al., 2016; Garro et al., 2005; Greer et al., 2008; Silverman et al., 2020), limited studies have documented the association between stress and FP among community samples (Kracht et al., 2018).

In sum, although empirical works documented the association between FP and mental health, these studies have not systematically explored the association between multiple FP related variables, internalizing symptoms, and stress among community parents. Thus, an exploratory study was conducted to evaluate the association between the parent-child feeding relationships, parent internalizing symptoms, parent stress, parent perceptions of the severity of their child's feeding problems, and child feeding concerns among school age children (Lim et al., n.d.). Results indicated that poorer parent-child feeding relationship was associated with higher parent stress and internalizing symptoms. Although this study provided preliminary support for the association between parent-child feeding relationship and parent mental well-being, it is imperative to examine a more comprehensive set of variables to understand the relationship between FP, parental stress, and parent internalizing symptoms.

Theoretical Models of Pediatric Feeding Problems and Disorders

Due to the heterogeneity and diverse etiology of FP, theoretical models have conceptualized risk factors that contribute to the development, maintenance, and consequences of FP and empirically based interventions to overcome FP. The Feeding Dynamics Model, the Biobehavioral Model, and the Biopsychosocial Model of Pediatric Feeding Problem are discussed in further detail.

Feeding Dynamics Model. Satter proposed the term *feeding relationship* to describe "the complex interactions that takes place between parent (or primary caregiver) and child as they engage in food selection, ingestion, and regulation" (Satter, 1986). Both parent and child contribute to the feeding environment and impact the feeding interaction. Children become successful eaters when both caregivers and children abide by the division of responsibility since children are believed to have an innate ability to regulate their own intake (Satter, 1990). Thus, caregivers are responsible for *what* type of food and *when* food is presented to their child. In other words, caregivers are responsible for optimizing the mealtime environment by providing a stable mealtime routine and a healthy variety of food to facilitate their child's food intake. Children are responsible for *how* and *how much* to eat, as children are capable of understanding hunger and satiety cues and can regulate their intake. Several studies have examined the validity of this model and concluded that children can innately adjust their intake based on the caloric density and amount of food consumed (Birch et al., 1989; Fomon et al., 1975).

According to the feeding dynamics model, FP and PFD arise when caregivers overstep the division of responsibility and attempt to control how much food their child consumes, such as using external cues and controlling the child's eating through reinforcement and expectations (e.g., clean plate club, rewards or punishment). Consistent with Satter's Feeding Dynamics Model, children with overly rigid parents who attempted to control their intake demonstrated an inability to self-regulate their eating (Rhee et al., 2006).

Biobehavioral Model. The biobehavioral approach to feeding is largely based on social learning theory and applied behavioral analysis. The learning theory posited that "people learn to respond in characteristic ways to situations as a function of the immediate antecedents and consequences of their behavior" (Skinner, 1953). According to this approach, children's eating and feeding behaviors are shaped by antecedents (events, actions, or circumstances that occur immediately before a behavior) and consequences (events that immediately follow the behavior). For example, interoceptive hunger cues such as a stomach growling to indicate hunger (antecedent) evokes the action of finding, requesting, and ingesting food (behavior) and results in satiety (consequence). The biobehavioral perspective has mainly focused on behavioral interventions for children with complex medical conditions since children with PFD often present with behavioral challenges, regardless of biological or medical factors (Burklow et al., 1998). Children with complex medical conditions require external stimulus (e.g., reinforcement) to regulate their nutritional needs and acquire feeding skills. Numerous studies have demonstrated that feeding problems persist even after the precipitating factor (e.g., illness, anatomical abnormality) has diminished (Manikam & Perman, 2000; Burklow et al., 1998; Russo & Budd, 1987).

FP among typically developing children arise when the pattern of child and parent response are established inadvertently in reaction to situations. For example, mealtime problems may be the result of developmentally inappropriate antecedents (e.g., prompting, manipulation, or bribery to try new food) and consequences (e.g., child receives caregiver's attention due to food refusal rather than appropriate mealtime behaviors; Kedesdy & Budd, 1998). Mealtime problems can also arise due to diminished discriminative salience of antecedents and consequences. For example, a child who has recently eaten a snack might have diminished hunger cues or perceive food as less reinforcing.

Biopsychosocial Model. The Biopsychosocial Model of Normative and Problematic Pediatric Feeding integrated the Feeding Dynamics Model and the Biobehavioral Model. It accounted for the feeding relationship between the primary caregiver and the child, biomedical factors, caregiver characteristics, and social cultural contexts in understanding the complex interactions that give rise to feeding problems (Berlin et al., 2009). The core theory of the Biopsychosocial Model synthesized the Feeding Dynamics Model's emphasis on a child's eating self-regulation and Biobehavioral Model's emphasis on social learning principles. Specifically, it posited that "successful growth is enhanced by a child's ability to regulate their intake in response to the environmental structures established by the child's caregivers" (Berlin et al., 2009). For example, a child with poor intake regulation may not necessarily develop a feeding problem, as the mealtime structure (e.g., consistent mealtime schedule, distraction-free mealtime environment) acts as a protective factor against a child's dysregulated intake.

The Biopsychosocial Model of Feeding postulated several pathways that ultimately result in FP. Proximal and distal caregiver variables might influence a caregiver's ability to provide adaptive environmental structures that enhance a child's ability to regulate their eating. Proximal caregiver variables are hypothesized to directly influence a child's feeding development. Certain parenting styles (e.g., authoritative parenting style) and caregivers who are rigid and controlling have been argued to place children at greater risk for developing FP (Berlin et al., 2015; Davies et. al, 2006; Satter, 1990). Although plausible, minimal empirical studies exist to support the relationship between parenting styles and FP development (Berlin et al., 2015). Distal caregiver variables are hypothesized to indirectly influence caregiver behavior during mealtime and includes caregiver beliefs, attitudes, and mental health. Several studies documented the implications of caregiver depression, social isolation, family conflict, and stress on the development of FP (Blissett et al., 2007; Garro et al., 2005; Wu et al., 2012). Despite the comprehensive theoretical framework proposed by the Biopsychosocial Model, research has yet to comprehensively examine the relations among variables.

The Current Proposal

Given the complex psychosocial, environmental, and biological interactions associated with FP, several questionnaires have been developed to evaluate multiple components of feeding (e.g., problematic mealtime behaviors, feeding strategies, and parent-child feeding relationship). However, these questionnaires can be time consuming, especially when completed in primary care or community settings. The general trend in psychology has moved towards developing short form questionnaires after the initial validation to decrease patient burden, promote higher response rates, and allow for more widespread screening (Holmbeck & Davine, 2009; Rolstad et al., 2011). Thus, the proposed study aimed to develop a multidimensional feeding measure that maintained relevant feeding related components while decreasing the total number of items. A shorter measure of feeding styles and problems in clinical, research, and primary care settings may result in greater respondent completion and increase the utility of such a questionnaire (Allen, 2016; Rolstad et al., 2011).

Due to the medical and mental health complications associated with PFD, most studies that evaluated the relationship between parental mental health (i.e., stress and internalizing symptoms) and PFD focused on families recruited from inpatient or outpatient clinical settings. Limited studies have been conducted among community samples who present with a broader range of FP, including non-clinical, sub-clinical, or clinical FP. Thus, it is integral to evaluate the relationship between parent mental health and multiple feeding domains among community parents. Additionally, while stress has been consistently documented among parents of children with PFD, limited studies have documented the association between stress and FP among community parents. Thus, the proposed study aimed to recruit community caregivers and their children and evaluate how unique feeding related variables, including problematic mealtime behaviors, parent feeding strategies, and parent-child feeding relationship, are associated with parental stress and internalizing symptoms.

For the primary analyses, an exploratory factor analysis (EFA) evaluated the factor structure and psychometric properties of the Multidimensional Feeding Questionnaire (MFQ). It was hypothesized that the number of constructs that emerge in the MFQ will be less than 13, the number of constructs currently found in the three feeding questionnaires utilized in the study.

Exploratory structural equation modeling (ESEM) evaluated the relationship between feeding related variables, including feeding strategies, parent-child feeding relationship, problematic mealtime behaviors, and parent stress and internalizing symptoms. Specifically, ESEM identified exploratory factors (i.e., factors loading in all indicators) from the MFQ within an exploratory structural equation modeling framework to allow for a more flexible, yet rigorous test of exploratory factors and the relation between its variables (Asparouhov & Muthen, 2009). Given the exploratory nature of ESEM, it was hypothesized that the factors that emerged in the MFQ had unique associations with parent stress and internalizing symptoms.

Methods

Participants

In total, 1,140 consented to participate in the study. Comprehensive examination of participant data indicated that 112 participants did not answer the questions beyond consenting to the study and 139 participants only answered one feeding questionnaire. Those participants were excluded from subsequent data analysis. A participant flow diagram is presented in Figure 2.

All participants were community parents (*N*=889; *M*= 32.35, *SD*= 7.69) with children between the ages of one and five years old (*M*=2.86, *SD*= 1.36; 51% male). Most parents identified as female (76%), White (75%), and married (65%). A third of the parents (*n*= 226) scored in the moderate to severe range for anxiety symptoms and a fourth of the parents (*n*=156) scored in the moderate to severe range for depressive symptoms.

A total of 298 (34%) parents reported that their child had a chronic or recurrent medical, behavioral, or emotional problem at the time of the study, with the most commonly reported problems being Food Allergy (*n*=70), Constipation (*n*=65), Sleep problems (*n*=48), Asthma (*n*=47), and Attention Deficit/Hyperactivity Disorder (*n*=25). Although most children (87%) did not have significant feeding challenges, 5% of children scored in the clinical range for pediatric FP. Table 1 presents full descriptive information of the current sample.

Procedure

The procedure for participant recruitment and data collection was approved each semester by the Institutional Review Board (IRB). Graduate and undergraduate students in an online advanced psychology laboratory course completed an online training in the ethical conduct of human research. Students were instructed to provide participants with a one-page information sheet, which detailed the purposes of the study, ensured confidentiality and privacy of their personal information, reminded individuals that their participation is completely voluntary, and included the link to the online survey. In order to prevent the fabrication of data or coercion of participants, students were provided an alternate assignment if and when recruitment challenges arose.

Participants were recruited via Qualtrics. Inclusionary criteria were participants should (1) be at least 18 years old, (2) have a child between one and five years old, and (3) have internet access. Prior to starting the online survey, participants were required to indicate that they were at least 18 years old, were participating voluntarily, and understood that the student who recruited them would not penalized if they chose not to participate. Upon confirmation that they were over 18 years of age and were participating voluntarily, parents were granted access to the survey.

Measures

Demographics. Community parents were asked to provide basic demographic information about themselves, including age, gender, race/ethnicity, marital status, and education level. Caregivers were also asked to provide basic demographic information about their youngest child who is between one and five years old, including age, gender, subjective child weight relative to height, and current medical, behavioral, or emotional problems.

Feeding Relationship. About Your Child's Eating (AYCE; Davies et al., 2007) included three robust factors: *Child Resistance to Eating (CRE;* α=.88*), Positive Mealtime Environment (PME;* α=.70*), and Parent Aversion to Mealtime (PAM;* α=.80*)* that measured parent-child feeding relationship and has been validated in children aged 2-16 years. *Child Resistance to Eating* measured caregivers' perceptions about their child's resistance to eating. *Parent Aversion to Mealtime* measured caregivers' avoidance or dread regarding mealtimes. *Positive Mealtime Environment* measured caregiver ratings about the pleasure of the mealtime environment. Caregivers were asked to rate how often each of the following statements (e.g., "My child hates eating", "I dread mealtimes") occurred in their home on a 1-5 likert scale, with 1=never to 5=nearly every time. Subscale scores were summed to generate total scores for each factor. Higher scores indicated higher difficulty within the constructs of CRE and PAM. Higher subscale score on the PME indicated more positive mealtime interactions. A total Feeding Relationship Disturbance (FRD; α=.82) score was calculated by adding the CRE and PAM scores and subtracting the PME score (Berlin et al., 2011). The items for the AYCE, along with internal consistency scores for each factor, can be found in Table 2.

Feeding Strategies. The Feeding Strategies Questionnaire (FSQ; Berlin, et al., 2011) included six scales related to feeding structure and regulation: *Mealtime Structure (*α=.82)*, Consistent Mealtime Schedule (*α=.86)*, Child Control of Intake (*α=.74)*, Caregiver Control of Intake (*α=.73)*, Grazing (*α=.83)*, and Encourages Clean Plate (*α=.88). The FSQ has been validated in community and clinical samples of children aged 2-6 years. *Mealtime Structure* comprised of caregiver ratings regarding the presence of distractions (e.g., toys, TV) and the degree to which parents set expectations during mealtimes. *Consistent Schedule* comprised of caregiver ratings regarding the consistency and frequency of meals and snacks. The third scale, *Child Control*, was the extent to which a child chose the amount of food to consume and caregiver belief about their child's eating self-regulation. *Caregiver Control* measured the amount of control caregivers had over their child's food intake. *Grazing (i.e., Laissez Faire)* was the extent to which meals and snacks were provided whenever the child requested food or drink. Finally, *Encourages Clean Plate,* measured the extent to which caregivers requested their child to finish everything on their plate. Caregivers were asked to indicate the extent to which they agreed or disagreed with each item (e.g., "My child has to come and sit at the table during mealtimes", "I feed my child whenever s/he asks for food") on a 1-5 likert scale, with 1= Strong Disagree to 5= Strongly Agree. Subscale scores were summed to generate total scores for each factor. Higher scores indicated higher agreement within that specific factor. The items for the FSQ, along with internal consistency for each factor, can be found in Table 3.

Mealtime Behaviors. The Mealtime Behavior Questionnaire (MBQ; Berlin et. al, 2010) included four scales related to the frequency of problematic mealtime behaviors: *Food Refusal/ Avoidance* (α=.89), *Food Manipulation* (α=.73), *Mealtime Aggression/Distress* (α=.81), *Choking/Gagging/Vomiting* (α=.76) and a *Total Mealtime Behavior* (α=.91) Score. The MBQ has been validated in both community and clinical samples of children aged 2-6 years. *Food Refusal or Avoidance* measured the frequency of behaviors that involved delaying, refusing, or avoiding food intake. *Food Manipulation* measured the frequency of behaviors that involved manipulating the location of food to avoid or delay food consumption. *Mealtime Aggression or Distress* measured the frequency of aggressive behavior (e.g., hitting, screaming, kicking) during mealtime. The *Total Mealtime Behavior Score* is the combined frequency of problematic mealtime behaviors. Caregivers were asked to "rate each behavior in terms of how often or frequently it happens. Please rate each behavior as it occurred during mealtimes or feeding over the past week" on a 1-5 likert scale, with 1=never, 3= sometimes, and 5=always. Clinical feeding behaviors are determined by calculating scores two standard deviations above the mean scores reported in the initial validation of the MBQ (M=55.29, SD=14.65). Items for the MBQ, along with internal consistency for each factor, can be found in Table 4.

Of the feeding measures utilized in the proposed study, AYCE and MBQ were classified as well-established measures. Measures were well-established if it: a) had been published by different investigators in at least two peer-reviewed journals, b) demonstrated good psychometric properties through inclusion of statistics in at least one peer-reviewed journal, and c) had been used in at least two chronic illness populations. The FSQ was classified as a promising measure since it: a) had been published in at least one peer reviewed journal, b) demonstrated moderate support for reliability and validity, and c) had been used in at least one chronic illness population (Poppert et al., 2015)

Momentary stress. The Stress Numerical Rating Scale (SNRS; Karvounides et. al, 2016) measured current stress in adults and adolescents. The SNRS demonstrated good discriminate and convergent validity with the Perceived Stress Scale (PSS; r=.49). For example, parents were asked "What has been your TYPICAL or AVERAGE level of stress in the past week?" and responded to a 0-10 likert scale with 0=no stress at all to 10=worst possible stress. Parents were also asked to rate their lowest level of stress, highest level of stress, and current stress level. Higher numerical rating indicated higher experienced stress in the past week.

Self-reported negative mood and fear. The Patient-reported Outcome Measurement Information System (PROMIS) is a set of person-centered measures that evaluated and monitored physical, mental, and social health in adults. Two subscales from the PROMIS emotional distress scales, depression and anxiety, were utilized to assess self-reported negative mood and fear, respectively. The PROMIS depression subscale demonstrated strong convergent validity with the Center for Epidemiological Studies Depression scale (CESD; r=.84). The PROMIS anxiety subscale demonstrated strong convergent validity with the Mood and Anxiety Symptom Questionnaire (MASQ; r=.85). Caregivers were asked to rate how often each statement occurred in the past seven days on a 1-5 likert scale with 1=never to 5=always. For the purpose of this study, the emotional distress scale was combined into one score to create a total internalizing symptoms score. Higher scores indicated higher negative mood and fear. Clinical cutoff scores were also calculated based on the t-score conversion table provided by PROMIS Instruments (Cella et al., 2019).

Data Analytic Plan

Prior to analysis, all variables were checked for inter- and intra- measure consistency to ensure that all subscale scores are calculated accurately. Additionally, frequency distributions were examined for unusual data points or distributions. All data analysis was conducted using the Mplus version 8.3 computer program (Múthen & Múthen, 2014). By default, Mplus used a Full Information Maximum Likelihood (FIML) to estimate a model in which some of the variables have missing values. Specifically, since variables were considered non-normal and categorical, robust weighted least squares (WLSMV) approach best analyzes categorical variables (Rhemtulla, Brosseau-Liard, & Savalei, 2012). Data analysis consisted of three main steps, including an EFA, ESEM measurement phase, and ESEM modeling phase, which are described in greater detail below.

*Exploratory Factor Analysis (EFA)***.** EFA was conducted to explore the psychometric properties of a multidimensional feeding questionnaire using three validated measures (i.e., AYCE, MBQ, and FSQ), which had a total of 13 factors. Items with primary factor loadings ≥.50 and secondary factor loadings ≥.40 and those that did not load on more than one factor were retained (i.e., cross-loading). Items not meeting these criteria were removed. Several EFA steps using geomin oblique rotations (Asparouhov & Muthen, 2009; Sass & Schmitt, 2010) were repeated until the fit statistics were deemed acceptable. Specifically, Sass & Scmitt (2010) noted that geomin oblique rotations are typically recommended for items that are factorially complex. Several indices are used to determine good model fit, including chi-squared statistics, the comparative fit index (CFI), the Tucker-Lewis Index (TLI), and the root mean square error of approximation (RMSEA). Non-significant chi squared values, CFI and TLI values greater than or equal to .95, and RMSEA values less than or equal to .05 suggest good model fit (Bryne, 2012; Kline, 2015).

Exploratory Structural Equation Modeling (ESEM). The measurement model in an ESEM analysis is an application of EFA and confirmatory factor analysis (CFA). It measured the relationship between observed and latent variables and confirmed the model, respectively (Asparouhov & Muthen, 2009; Hoyle & Smith, 1994; Anderson & Gerbing 1988). ESEM models were estimated by specifying nine factors for the remaining items in the MFQ. In an ESEM framework, the primary purpose of the measurement step was to determine whether the observed variables loaded onto the proposed latent factors. CFA confirmed the model for the dependent variables (i.e., momentary stress and internalizing symptoms). A good fitting model was considered the prerequisite for testing step two of the data analytic plan (i.e., ESEM modeling phase). Given an acceptable measurement model, the structural model tested the hypothesized paths and directional relationships. It utilized multiple regression paths among latent and observed variable to test exploratory relationships between the predictors and dependent variables. All predictors (i.e., feeding related constructs) predicted the dependent variables (i.e., momentary stress and internalizing symptoms) to hold all other variables constant and reflect unique relationships between each feeding related construct and parent stress and internalizing symptoms.

Results

Exploratory Factor Analysis

Several steps were conducted to determine model fit. During the first step, a 9 and 10 factor model were further explored since those models provided acceptable fit while being the most parsimonious (i.e., simplest plausible model with the fewest number of variables). Fit statistics for the first EFA step are presented in Table 5. A 10-factor model was selected over the 9-factor model since the factor loadings for each item were higher in the 10-factor model compared to the 9-factor model. Upon initial examination of item content in both the 9-factor model and 10-factor model, the 10-factor model supported the theoretical framework proposed by the Biopsychosocial model (Berlin et al., 2009). Since all items in factor 5 either cross-loaded or had factor loadings below the .50 threshold, this factor was dropped in subsequent analyses. Factor loadings for the 10-factor model is presented in Table 6 and dropped items are presented in Table 7. Three additional EFA steps were conducted (see Tables 8-13 for model fit statistics, factor loadings, and dropped items) until all predetermined criteria were met.

The fourth and final EFA step yielded a 48-item measure with a 9-factor solution. Each factor was interpreted by examining item content and pattern of coefficients. An initial validity check with all latent ensured that all items theoretically fit with the proposed factor structures.

Fit statistics for each factor solution are presented in Table 14. Twelve items that measured *negative parent-child feeding interactions* included content characterized by parent and child aversion to eating and mealtime. Six items that measured *positive family mealtime interactions* included content characterized by parent perceptions about pleasure and enjoyment around mealtime. Nine items that measured *aggressive mealtime behaviors* included content characterized by aggressive child behavior displayed during mealtime. Six items that measured *avoidant/distracting mealtime behaviors* included content characterized by child avoidance or use of distraction techniques to avoid eating or staying for family meals. Three items that measured *child control of eating* included content characterized by the extent to which parents provided food or drinks upon the child's request. Four items that measured *consistent mealtime schedule* included content characterized by the degree to which parents provided a consistent mealtime schedule. Three items that measured *few distractions during mealtime* included content characterized by the number of distractions present during mealtimes. Four items that measured *parent perception of child intuitive eating* included content characterized by caregiver belief about their child's eating self-regulation ability. Finally, two items that measured a factor called *parent control of child's eating* included content characterized by parent's perceived control over their child's eating. Although a two-item factor is not typically recommended (Kline, 2015) this construct is theoretically relevant since parent control of a child's eating is a significant construct in the feeding literature and among feeding theories (AAP, 2018; Berlin et al., 2009; Berlin, et al., 2011; Satter, 1990; Rhee et al., 2006). The individual items retained in the final 9-factor model and factor loadings are presented in Table 15. The Multidimensional Feeding Questionnaire (MFQ) is presented in Appendix 1.

Exploratory Structural Equation Modeling

Measurement phase. Results for the measurement phase of ESEM indicated that that a 9-factor solution for the feeding related variables and a CFA for stress and internalizing symptoms, respectively, yielded good fit to the data, $\chi^2(1343)=2430.58$, $p<.01$, TLI=0.97, CFI=0.96, SRMR=0.03, RMSEA=0.03 (90% CI=.028 and .032).

Full model results, including the estimate, standard error, and p-value for factors 1 to factor 9 and CFA results for the momentary stress and internalizing symptoms are presented in Table 16. A full standardized correlation matrix between all latent variables, including feeding related items, parent stress and internalizing items are presented in Table 17.

Modeling phase. The modeling phase, which used the MFQ items as predictors and stress and internalizing symptoms as dependent variables, similarly yielded good fit to the data, $\chi^2(1343)=2430.58$, $p<.01$, TLI=0.97, CFI=0.96, SRMR=0.03, RMSEA=0.03.

Internalizing symptoms. Child Aggressive Mealtime Behavior and child Avoidant/Distracting Mealtime Behaviors predicted parental internalizing symptoms, est.=.16, $p<.01$; est.=.09, $p=.05$, respectively. Consistent Mealtime Schedules and Few Distractions During Mealtimes negatively predicted parental internalizing est.=-.01, $p=.01$; est.=-.09, $p=.03$, respectively. Negative Parent-Child Feeding Interactions, Positive Family Mealtime Interactions, Child Control of Eating, Parent Perception of Child Intuitive Eating, and Parent Control of Child's Eating did not significantly predict of parent internalizing symptoms.

Parent stress. Negative Parent-Child Feeding Interactions and child Avoidant/Distracting Mealtime Behaviors predicted parental stress est.=.13, $p=.01$; est.=.17, $p<.01$, respectively. Consistent Mealtime Schedules negatively predicted parental stress, est.=-.11, $p=.01$. Positive Family Mealtime Interactions, Aggressive Mealtime Behavior, Child Control of Eating, Few Distractions During Mealtimes, Parent Perception of Child Intuitive Eating, and Parent Control of Child's Eating did not significantly predict parent stress. Full results of feeding related predictors of parent stress and internalizing symptoms can be found in Table 18.

Discussion

This study is the first to combine existing validated feeding measures to create the Multidimensional Feeding Questionnaire (MFQ) using EFA in a community sample of parents of children with varying degree of FP. Specifically, the EFA findings revealed nine primary domains of feeding (e.g., Negative Parent-Child Feeding Interactions, Positive Family Mealtime Interactions, Aggressive Mealtime Behavior, Avoidant/Distracting Mealtime Behaviors, Consistent Mealtime Schedules, Child Control of Eating, Few Distractions During Mealtimes, Parent Perception of Child Intuitive Eating, and Parent Control of Child's Eating), suggesting that each factor may be considered independently when scoring the MFQ. The new factor structure of the MFQ retains most of the original factor structure associated with parent-child or family mealtime interactions (Davies et. al., 2006), problematic mealtime behaviors (Berlin et al., 2010), and strategies that promote resilience and adaptive skills related to FP (Berlin et al., 2011), but deviates in distinct ways to account for the community nature of FP. While previous feeding measures have been predominantly used in clinical samples (Poppert et al., 2015), the initial validation of this measure has been conducted with community parents and children.

Compared to the original AYCE measure, the MFQ scales associated with parent-child feeding relationship evaluated positive or negative feeding interactions rather than Parent Aversion to Mealtime (PAM), Positive Mealtime Environment (PME), and Child Resistance to Eating (CRE). In the MFQ, PAM and CRE items were subsumed into one construct that measured negative parent-child feeding interactions, with the exception of 1 item ("My child enjoys eating."), which loaded onto positive family mealtime interactions. Items for PME were retained but reframed as positive family mealtime interactions. These constructs refocused the measure's attention to the feeding relationship, which is a crucial yet understudied component of FP (Davies et al., 2006, Davies et al., 2007). The proposed factors, positive family mealtime interactions and negative parent-child feeding interactions, aligned with the Feeding Dynamics Model (Satter 1986) since it emphasized that parents and children should abide by the division of responsibility to increase positive mealtime interactions and decrease negative mealtime interactions. The relevance of the feeding relationship in understanding FP is further emphasized by Goday and colleagues (2019) which highlighted the role of psychosocial factors, including social and environmental factors, that adversely impacted feeding behaviors and contributed to the development of PFD. Social and relational factors included caregiver-child interactions, cultural expectations within a mealtime context, and the mealtime environment.

MBQ factors were reduced from four factors (i.e., Food Refusal/ Avoidance, Food Manipulation, Mealtime Aggression/Distress, Choking/Gagging/Vomiting) to two factors (i.e., Aggressive Mealtime Behavior, Avoidant/ Distracting Mealtime Behaviors). Items from Food Refusal/Avoidance in the MBQ were largely retained and reconceptualized as Avoidance/ Distracting Mealtime Behaviors since it characterized child avoidance behaviors or use of distraction techniques to avoid eating or staying for family meals. Items from Food Manipulation, Mealtime Aggression/Distress, and Choking/Gagging/Vomiting were subsumed into one construct that measured Aggressive Mealtime Behaviors. The two problematic mealtime behavior constructs retained in the MFQ can be broadly conceptualized as learned feeding aversion (Berlin et al., 2011). Children who repeatedly experience physical or psychological discomfort may develop strategies to avoid aversive feeding situations and consequently learn to avoid feeding and mealtimes. Thus, learned feeding aversion can manifest as child aggression or avoidant/ distracting behaviors during mealtime. The shift in mealtime behavior problems domains could be attributed to the sampling methods of the current study. It is likely that items associated with aggressive or avoidant/ distracting mealtime behaviors were more prevalent among families with milder forms of FP, compared to families with PFD who experience gagging or food manipulation more frequently (Silverman et al., 2020). Thus, the mealtime behavior problems assessed in the MFQ will be of greater clinical utility to providers in primary care or community settings since the items retained in the MFQ are likely more applicable to community families.

FSQ factors were reduced from six factors (i.e., Mealtime Structure, Consistent Schedule, Child Control, Caregiver Control, Grazing, and Encourages Clean Plate) to five factors (i.e., Consistent Mealtime Schedule, Few Distractions during Mealtime, Parent Perception of Child Intuitive eating, Child Control of Eating, Parent Control of Child's Eating). Items from the Grazing factor from the FSQ were reconceptualized as Child Control of Eating in the MFQ since it is likely that these items measured the autonomy of children's eating habits rather than frequency of intermittent snacking. Similarly, items from Child Control of Eating in the FSQ were largely retained but reconceptualized as Parent Perception of Child Intuitive eating since the items were reflective of parents' beliefs about their child's eating self-regulation. These reconceptualized constructs aligned with the Biopsychosocial Model of Feeding (Berlin et al., 2010) and the Feeding Dynamics Model (Satter, 1986) since it emphasized the child's innate ability to self-regulate their eating. Items from Consistent Mealtime Schedule in the FSQ were retained. Items from Mealtime Structure in the FSQ were retained but reframed as Few Distractions during Mealtime since it included items that better characterized the number of distractions present during mealtimes. Multiple items from Parent Control of Intake in the FSQ were dropped during the analytic process. Finally, the factor labeled Encourages Clean Plate from the FSQ was also dropped during the analytic process. Of the five feeding strategies retained in the MFQ, four constructs reflected adaptive strategies parents can implement during mealtimes, including Consistent Mealtime Schedule, Few Distractions During Mealtime, Child Control of Eating, and Parent Perception of Child Intuitive Eating.

The MFQ has several notable strengths. The newly developed measure demonstrated construct validity as the MFQ scales relate to each other. For example, Negative Parent-Child Feeding Interactions is positively related with Aggressive Mealtime Behavior and Avoidant/ Distracting Mealtime Behaviors, and inversely related to Consistent Mealtime Schedule, Parent Perception of Child Intuitive Eating, and having Few Distractions During Mealtime. The measure presented a strong focus on both parent and child factors, especially since FP have increasingly been considered in the literature as a relational problem (Davies et al., 2006, Davies et al., 2007; Walton et al., 2017). Additionally, the development and initial validation of the measure involved rigorous psychometrics (e.g., factor structure, reliability, and validity are presented) and careful consideration of existing theoretical models such as the Feeding Dynamics Model (Satter, 1986, 1990), Biobehavioral Model (Burklow et al., 1998; Kedesdy & Budd, 1998), and the Biopsychosocial model (Berlin et al., 2009). Although another feeding screening measures has been developed (Marshall et al., 2015), this screener only evaluated problematic feeding behaviors and parent mealtime strategies. In contrast, the MFQ gathered multidimensional feeding components including problematic feeding behaviors, parent mealtime strategies, parent mealtime beliefs, and parent-child feeding relationship. Additionally, the MFQ is relatively brief (15 minutes administration time; 48 items instead of 96 items) and non-intrusive (no need to videotape family meals). The information gleaned from the MFQ can help

PCP, community health organizations, and community parents identify specific aspects of feeding that may need additional support or intervention.

Parent Stress and Internalizing Symptoms during Mealtimes

Although previous studies documented increased parent stress and poorer mental health among families of children with PFD (Greer et al., 2008; Silverman et al., 2020), relatively few studies evaluated the relationship between FP and community families' stress and internalizing symptoms (Blissett et al., 200; de Barse et al., 2016; Farrow & Blissett, 2005; Harvey et al., 2015; Haycraft, 2020; Hughes et al., 2015). This study adds to the growing body of literature by ascertaining that specific feeding related constructs were uniquely related to parent stress and internalizing symptoms The presented findings have a novel contribution to the feeding literature since it evaluated the role of multidimensional feeding variables, including problematic mealtime behaviors, parent feeding strategies, and parent-child feeding relationship, on parent mental well-being. In the past, most empirical works have focused on the association between feeding variables and parent mental health in isolation (e.g., looking solely at problematic mealtime behaviors and parent stress). Finally, findings reflected an emerging body of literature suggesting stress and internalizing symptoms have unique underlying mechanisms and should be considered separately in the context of FP (Lim et al., n.d.).

Predictors of parent internalizing symptoms. Results of the current study suggested that higher frequency of child aggressive mealtime behavior and child avoidant or distracting mealtime behaviors mealtimes were associated with increased parental negative mood and fear. It is plausible that repeated exposure to child learned feeding aversion may result in parental learned helplessness. Parents may feel a sense of powerlessness or absence of control over family mealtimes or their child's mealtime behavior. It is also likely that parent self-efficacy, defined as parents' ability to guide their children through the developmental stages they face without serious problems (Bandura, 1997; Sanders & Woolley, 2005), could explain an increase in negative mood and fear (Adamson & Morawska, 2017). Previous studies hypothesized that the relationship between low parenting self-efficacy and parent depressive symptoms may contribute to descriptions of lower authority feeding styles (Cutrona & Troutman 1986; Fox & Gelfand, 1994) and less responsive feeding styles (Goulding et al., 2014). Additionally, parents may perceive that the ability to promote feeding and nutritional stability is an indicator of parent competence (Kedesdy & Budd, 1998; Sanders & Wolley, 2005). Parents with more internalizing symptoms may perceive themselves as less competent parents, which may ultimately contribute to heightened feelings of worthlessness, negative mood, and fear (Goulding et al., 2014).

Manifestation of parent internalizing symptoms could also be attributed, in part, to parental aversion (i.e., avoidance of) to mealtime in response to children who present with learned feeding aversion (Davies et al., 2007; Goday et al., 2019). For example, other studies suggested that parents who reported lower levels of positive affect or anxiety symptoms tended to withdraw from such interactions and adopted uninvolved feeding styles (Hurley et al., 2008; Hughes et al., 2015), which contributed to and maintained negative affective reactions to food and mealtime. Avoidance in response to challenging mealtime behaviors has also been demonstrated to correlate with increased disruptions to parent-child interactions (Chao & Chang, 2016) and decreased frequency of positive mealtime interactions. Consequently, parents who experienced fewer pleasant interactions with their child and greater child resistance during mealtimes are placed at increased risk for experiencing anxiety and negative affect related to mealtime. It is also likely that parents who have elevated symptoms of anxiety and negative mood may perceive their children as more resistant during mealtimes and experience mealtimes as less pleasurable due to their psychiatric symptoms.

Predictors of parent stress. While studies have documented the relationship between parent stress and FP, these studies have exclusively focused on children in intensive inpatient or outpatient clinics (Garro et al., 2005; Greer et al., 2008; Silverman et al., 2020). This study is the first to suggest that FP is associated with increased stress among community parents. Specifically, study findings suggested that parent report of negative parent-child feeding interactions and higher frequency of child avoidant or distracting mealtime behaviors are associated with heightened parental stress. Similar to previous reports within the PFD literature, dysfunctional interactions between the parent and child (i.e., negative mealtime interactions) activated reactive thinking (Silverman et al., 2020) and exacerbate FP among community parents. Increased child mealtime behavior problems may also result in high familial stress environments, resulting in parents engaging in less effective parenting practices (Coldwell et al., 2006; Crnic et al., 2005; Neece et al., 2012).

It is also plausible that feeding related challenges exacerbate pre-existing symptoms of internalizing symptoms. Despite difficulty in identifying which came first (the feeding problem or parent stress or internalizing symptoms), it is increasingly important to address both child related feeding difficulties and parental well-being in the face of challenging mealtime behaviors. Both parent stress and internalizing symptoms *and* child FP result in poor outcomes, including disrupted parent-child interaction (Chao & Chang, 2016), increased conflict between parents regarding the management of their child's eating behaviors (Jacobi et al., 2003), diminished parental confidence, and stability of picky eating behaviors from early to late childhood (Cardona Cano et al., 2015). In turn, these outcomes impact parent psychological well-being, stress tolerance, and overall quality of life. Thus, PCP and community health organizations are encouraged to address symptoms of parent internalizing symptoms and stress in addition to child FP, as parents with FP may benefit from additional psychosocial support.

Protective factors. Since most studies evaluated risk factors for child FP, no studies to date have explored protective factors for parent negative mood in fear in the context of child FP. Even among studies that broadly evaluated protective factors in the context of FP, the outcome variable of interest tended to be child focused. For example, Satter's (1986) Feeding Dynamics Model and Berlin's (2010) Biopsychosocial Model encouraged parents to implement structured meal and snack times and have few distractions during mealtime to support children's eating habits. Specifically, Satter (1990) suggested applying these strategies to support the child's ability to self-regulate their eating by allowing a child to come to the table hungry, but not famished (Satter, 1990), while Berlin (2010) noted that such strategies acted as a protective factor for a child's dysregulated intake (Berlin et al., 2010). Additionally, Holley and colleagues (2019) noted that positive and health promoting feeding practices were associated with greater enjoyment of food and lower food fussiness among children. Findings from the current study is the first to suggest that adaptive and positive feeding behaviors could also serve as protective factors for parental stress and internalizing symptoms in the context of child FP. These protective factors align with current AAP guidelines about healthy eating habits (for more information, refer to the AAP Food and Feeding guidelines; AAP, 2018).

Implications

This study adds to the growing literature highlighting the need for clinicians to screen parents for stress and internalizing symptoms (Goulding et al., 2014; Silverman et al., 2020) during well-child visits, especially since screening may be an important component of counseling on healthy child feeding practices. Since past studies have demonstrated the feasibility of such screens (Olson et al., 2006), future studies should evaluate whether parents who demonstrate elevated levels of stress and internalizing symptoms are willing to receive stress or anxiety reduction skills, in addition to feeding skills intervention. Finally, early screening is recommended, as feeding behaviors and parent-child feeding relationships develop within the first five years of the child's life. The MFQ can be used as a screening measure in community, clinical, and research settings since it relatively brief (15 minutes administration time; 48 items), non-intrusive (no need to videotape family meals), and comprehensive (gathers multidimensional feeding components). Information gleaned from the MFQ can help PCP, community health organizations, and community parents identify specific aspects of feeding that may need additional support or intervention.

Parents are encouraged to establish consistent mealtime schedules by offering meals and snacks at the same time every day and have few distractions during mealtimes by removing toys and electronics and eating on the table during mealtimes since these behaviors appeared to be negatively predictive of parent stress and internalizing symptoms. PCP and community health organizations should also provide parents with skills, strategies, and resources regarding prevention of learned feeding aversion, manifesting in the form of child avoidant or distracting mealtime behaviors or aggressive mealtime behaviors due to. While it is important for parents to adopt strategies to improve child mealtime behavior and maintain positive family interactions, it is also important to address parent stress and internalizing symptoms in the context of FP. Parents with heightened reactive stress, anxiety, and negative mood may exacerbate the child's FP and may be less effective in implementing adaptive strategies to mitigate FP due to poor parental psychological well-being.

Limitations

There are several limitations in the current study. It is plausible that response bias may have impacted the study due to the sampling method. Given the perception that feeding and nutritional stability is an indicator of parent competence, parents may have responded to the online survey in a socially desirable manner and downplayed mealtime related challenges. Thus, the current findings might be underestimate of the actual impact of FP on parent stress and internalizing symptoms. The study is also limited in its generalizability due to little variability in participant demographics, since it primarily consisted of White, well-educated community mothers from two parent households. It is likely that families who have experienced or are currently experiencing food shortages or live in food deserts might experience heightened stress and internalizing symptoms due to the combined effects of food insecurity and mealtime related problems (Berge et al., 2017). Families from other ethnic backgrounds who place distinct values or meaning on food and mealtime interactions might respond differently to the survey questions. Other demographic characteristics such as parent gender and number of adults involved in feeding may play unique roles in the proposed pathways.

Despite these limitations, the current study contributes to the literature in several important ways. First, the study assessed the factor structure of a multidimensional feeding measure which included central constructs associated with feeding (e.g., child problematic mealtime behavior, parent feeding strategies, and parent-child feeding relationships). The MFQ is relatively quick to administer and obtains relevant feeding information. The study also evaluated a more comprehensive set of feeding related variables associated with parent stress and internalizing symptoms By doing so, parents, PCP, and community health organizations can evaluate both child FP and parent mental health concerns during well-child visits to improve overall parent-child relationships and family functioning, both within and outside the context of family mealtimes.

Future Directions

Future studies should identify the unique role of acute and chronic stress and clinical anxiety and depression associated with FP, as it may exacerbate child problematic mealtime behaviors and negative feeding relationships. The current study proposed underlying mechanisms of internalizing symptoms that may increase empirical understanding of current models of feeding. Specifically, parenting self-efficacy and learned helplessness may be of research and clinical interest since it may moderate the relationship between child FP and parent stress and internalizing symptoms. Other potentially moderators between child FP and parent stress and internalizing symptoms should be considered, including parental perceptions of the severity of their child's mealtime behavior, the likelihood of presenting such a concern to their PCP, and the reactions of PCP to such concerns. Studies should also examine broader and more complex factors that contribute to and maintain feeding problems, including proximal and distal factors such as culture, socioeconomic status, values surrounding food and feeding. Further, given that many researchers propose a bi-directional relationship between FP and parent factors (Walton et al., 2017; Berlin et al., 2009; Davies et al., 2006), future studies should evaluate the directionality of this association, as well as the complex reciprocal interactions within feeding relationships. It is plausible that a longitudinal study may better identify which came first, the feeding problem or parent stress or internalizing symptoms.

Figure 1
Participant Diagram Flow

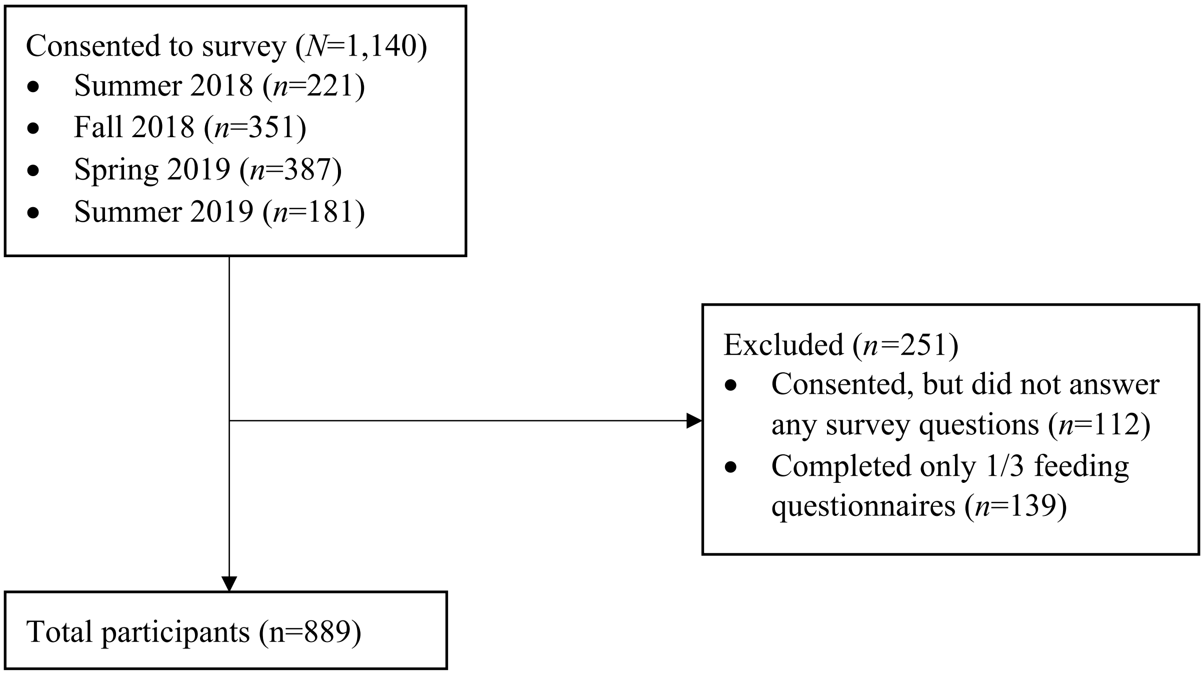

Table 1
Sample Demographic characteristics and descriptive statistics

		Parent	Child
		M (SD)	
Age		32.35 (7.69)	2.86 (1.36)
Years of Education		14.98 (2.59)	
		n (%)	
Gender	Female	674 (76%)	433 (49%)
	Male	213 (24%)	444 (51%)
Marital Status	Married	577 (65%)	
	Single, never married	246 (28%)	
	Divorced/Separated	49 (6%)	
	Widowed	1 (0.1%)	
Ethnicity	White	659 (75%)	
	African American	83 (10%)	
	Asian	50 (6%)	
	Latinx/ Hispanic	51 (6%)	
	Native American	5 (0.6%)	
	Middle Eastern	6 (0.7%)	
	Mixed	29 (3%)	
Anxiety Symptoms	None to slight concerns	385 (44%)	
	Mild concerns	273 (31%)	
	Moderate concern	202 (29%)	
	Severe concern	24 (3%)	
Depressive Symptoms	None to slight concerns	558 (63%)	
	Mild concerns	160 (18%)	
	Moderate concern	143 (16%)	
	Severe concern	13 (1.5%)	
Height relative to weight	Below Weight		126 (14%)
	Normal Weight		673 (77%)
	Above Weight		74 (9%)
Medical Condition	Yes		298 (34%)
	No		576 (66%)
	ADHD		25 (3%)
	Asthma		47 (6%)
	Constipation		65 (8%)
	Food Allergy		70 (8%)
	Sleep problems		48 (6%)
Mealtime Behaviors	Score 70-84 (1 SD)		64 (7%)
	Score 85-99 (2 SD)		32 (4%)
	Score 100+ (3 SD)		9 (1%)

Table 2

Internal consistencies (alpha) and item list for the About Your Child's Eating measure

Factor/ item	α
Child Resistance to Eating	.88
My child hates eating.	
I feel like a short-order cook because I have to make special meals for my child.	
I feel that it is a struggle or fight to get my child to eat.	
My child refuses to eat.	
I worry that my child will not eat right unless closely supervised.	
My child is a picky eater.	
My child enjoys eating.	
My child seems to have no appetite.	
My child refuses to eat a planned meal.	
I have to force my child to eat.	
Parent Aversion to Mealtime	.70
I dread meal times.	
Meal times are the pits.	
It is hard for me to eat dinner with my child because of how he/she behaves.	
There are arguments between me and my child over eating.	
My child has mealtime tantrums.	
Positive Mealtime Environment	.80
Meal times are among the most pleasant in the day.	
The family looks forward to meals together.	
Mealtime is a pleasant, family time.	
I get pleasure from watching my child eating well and enjoying his/her food.	
We have nice conversations during meals.	
Feeding Relationship Disturbance	.82

Table 3

Internal consistencies (alpha) and item list for the Feeding Strategies Questionnaire

Factor/ item	α
Mealtime Structure	.82
My child frequently eats meals and snacks in the living room or family room.	
My child frequently eats meals and snacks in front of the TV.	
My child has to come and sit at the table during meals.	
My child often has toys at the table during meals.	
My child is allowed to leave the table and return during mealtimes	
Mealtimes are full of distractions at our house.	
My child knows what the rules for mealtime behavior are.	
We have clear rules about behavior at mealtime.	
Consistent Mealtime Schedule	.86
Mealtimes occur at the same time each day.	
We eat meals at the same time every day.	
My child's meals and snacks are scheduled each day.	
Snacks are offered at the same time every day.	
A consistent feeding schedule is important to me at home.	
Child Control of Intake	.74
My child knows when it is time to stop eating by paying attention to her/his body.	
My child knows when s/he is full.	
My child knows instinctively how much to eat.	
When my child says s/he is full, I don't ask her/him to eat any more.	
My child knows when s/he is hungry.	
I never push my child to eat more than s/he says s/he wants.	
My child is driven to eat by her/his hunger.	
My child can choose the amount of each food that s/he wants to eat at a meal	
Caregiver Control of Intake	.73
I am in control of my child's eating.	
I feel that I am in control of my child's eating.	
It is the parent's responsibility to make sure that their child eats enough food at each meal.	
When my child hasn't eaten enough, I make sure s/he eats more.	
I don't allow my child to eat more than I think s/he should.	
My child decides whether s/he will eat the foods offered at each meal	
Grazing	.83
I feed my child whenever s/he asks for food	
I allow my child to eat whenever s/he is hungry.	
My child is allowed to eat and drink throughout the day, whenever s/he asks	
Encourages Clean Plate	.88
My child must eat all the food that gets put on his/her plate.	
My child must finish everything on her/his plate.	

Table 4
Internal consistencies (alpha) and item list for the Mealtime Behavior Questionnaire

Factor/ item	α
Food Refusal/Avoidance	.89
Demanding alternative foods/forms of foods	
Eating too slowly	
Only eating a few foods	
Deal making (negotiation)	
Talking to keep from eating	
Verbally refusing to eat	
Playing with food	
Pushing spoon/food away	
Not sitting in chair	
Pushing away food from table	
Leaving the table	
Playing with toys rather than eating	
Food Manipulation	.73
Letting food drop out of mouth	
Throwing food	
Spitting out food	
Hiding food	
Hands in front of face	
Spitting at a person	
Packing food in the mouth	
Mealtime Aggression/ Distress	.81
Screaming	
Hitting others or objects	
Kicking others or objects	
Crying	
Reporting physical pain	
Refusing to come to the table	
Asking for comfort or assurance	
Flailing arms/legs	
Biting others	
Choking/ Gagging/ Vomiting	.76
Gagging	
Vomiting	
Choking or coughing on food or liquid	
MBQ Total Score	**.91**

Table 5

EFA step 1 fit statistics including all items from the AYCE, MBQ, FSQ

# of Factors	χ^2	Df	χ^2/df	RMSEA	90% CI		CFI	TLI	SRMR	Fit
1	29383.36	3320	8.85	0.094	0.093	0.095	0.559	0.548	0.129	Poor
2	22417.77	3238	6.92	0.082	0.081	0.083	0.675	0.659	0.109	Poor
3	16202.28	3157	5.13	0.068	0.067	0.069	0.779	0.762	0.091	Mediocre
4	12936.22	3077	4.20	0.06	0.059	0.061	0.833	0.815	0.075	Mediocre
5	10675.93	2998	3.56	0.054	0.053	0.055	0.87	0.852	0.061	Adequate
6	8706.557	2920	2.98	0.047	0.046	0.048	0.902	0.886	0.051	Adequate
7	7528.119	2843	2.65	0.043	0.042	0.044	0.921	0.905	0.045	Adequate
8	6739.706	2767	2.44	0.04	0.039	0.041	0.933	0.917	0.042	Adequate
9	6094.37	2692	2.26	0.038	0.036	0.039	0.94	0.93	0.039	Acceptable
10	5453.42	2618	2.08	0.035	0.034	0.036	0.95	0.94	0.036	Acceptable
11	5035.2	2545	1.98	0.033	0.032	0.035	0.96	0.94	0.032	Acceptable
12	4644.88	2473	1.88	0.031	0.030	0.033	0.96	0.95	0.03	Acceptable
13	4220.35	2402	1.76	0.029	0.028	0.031	0.97	0.96	0.028	Excellent
14	3876.45	2332	1.66	0.027	0.026	0.029	0.97	0.96	0.026	Excellent
15	3576.31	2263	1.58	0.026	0.024	0.027	0.98	0.97	0.024	Excellent

Note. item level analysis and model fit were further explored at the 9-factor and 10-factor model.

Table 6

Items retained in the MFQ after EFA step 1

	1	2	3	4	5	6	7	8	9	10
AYCE_1	**0.726***	-0.137*	-0.022	-0.042	0.144*	-0.025	0.028	-0.03	-0.018	0.074*
AYCE_2	**0.599***	0.034	-0.087	0.157*	-0.011	0.019	-0.161*	-0.158*	-0.013	0.096*
AYCE_4	**0.787***	-0.078*	-0.056	0.097*	0.133*	-0.066*	0.001	-0.021	0.083*	-0.014
AYCE_5	**0.771***	-0.109*	0.012	0.022	0.163*	-0.072*	0.045	-0.057*	0.107*	0.005
AYCE_6	**0.694***	-0.057	0.071	0.02	0.005	-0.057	0.022	0	0.021	0.170*
AYCE_7	**0.720***	0.077*	-0.153*	0.191*	-0.003	-0.022	-0.151*	-0.079*	-0.003	0.089*
AYCE_12	**0.575***	-0.262*	0.228*	-0.001	-0.291*	0.001	-0.017	0.028	-0.008	-0.108*
AYCE_14	**0.546***	-0.187*	0.319*	-0.009	-0.281*	0.058	0.003	0.035	-0.033	-0.137*
AYCE_16	**0.607***	-0.022	0.158*	0.223*	-0.247*	-0.012	-0.001	0.016	0.024	-0.011
AYCE_17	**0.662***	-0.131*	0.03	0.023	0.105*	-0.013	0.039	-0.078*	0.032	-0.006
AYCE_18	**0.583***	-0.004	0.387*	0.048	-0.03	-0.016	0.01	0.043	0.003	-0.02
AYCE_19	**0.741***	-0.016	0.05	0.171*	-0.060*	0	-0.085*	-0.047	-0.025	-0.008
AYCE_20	**0.686***	-0.071*	0.133*	0.054	-0.043	0.026	0.155*	-0.037	-0.037	0.128*
AYCE_3	-0.194*	**0.616***	0.047	-0.012	-0.022	-0.027	-0.039	-0.03	-0.076*	0.135*
AYCE_8	-0.087	**0.768***	0.003	-0.006	0.007	-0.011	0.003	0.033	0.011	-0.038
AYCE_9	-0.412*	**0.634***	0.097*	0.021	0.101*	0.050*	-0.012	-0.019	-0.003	-0.076*
AYCE_10	-0.236*	**0.790***	0.008	-0.059*	-0.012	-0.001	-0.004	-0.014	-0.016	0.002
AYCE_11	-0.073	**0.616***	-0.056	0.003	0.148*	0.080*	0.004	-0.016	0.046	-0.018
AYCE_13	-0.055	**0.668***	-0.091*	0.029	-0.026	-0.013	-0.069*	0.108*	0.065*	-0.028
MBQ_7	0.361*	0.048	**0.711***	-0.041	0.045	0.080*	0.127*	0.131*	-0.227*	-0.038
MBQ_8	0.372*	0.054	**0.800***	-0.068	-0.004	0.071*	0.091*	0.120*	-0.213*	-0.065*
MBQ_9	0.245*	0.108*	**0.828***	-0.098*	0.017	-0.082*	-0.01	-0.204*	0.079*	-0.029
MBQ_10	0.169*	0.056	**0.809***	-0.032	-0.022	-0.078*	-0.018	-0.221*	0.025	0
MBQ_11	-0.028	-0.118	**0.613***	0.248*	-0.012	0.017	-0.035	-0.167*	0.063	0.160*
MBQ_20	0.05	-0.021	**0.609***	0.176*	0.192*	-0.043	0.124*	-0.003	0.069	0.073
MBQ_26	0.002	-0.054	**0.649***	0.048	0.094*	-0.074*	-0.044	0.02	-0.087*	0.347*

MBQ_30	-0.257*	-0.282*	**0.659***	0.173*	-0.008	-0.042	-0.022	-0.089	0.056	0.260*
MBQ_32	-0.035	-0.297*	**0.641***	0.049	-0.07	-0.048	-0.009	-0.041	-0.031	0.454*
MBQ_3	0.019	-0.018	0.007	**0.745***	0.009	0.039	-0.005	-0.095*	0.003	-0.339*
MBQ_6	0.127*	-0.013	0.254*	**0.570***	0.107*	0.011	-0.007	-0.103*	-0.037	-0.181*
MBQ_16	0.138*	0.004	0.02	**0.652***	-0.071	-0.005	0.125*	0.144*	-0.037	0.046
MBQ_17	0.171*	0.017	-0.044	**0.677***	-0.185*	0.02	0.066	0.118*	-0.029	0.049
MBQ_24	0.357*	0.047	0.039	**0.577***	-0.004	0.011	-0.100*	0.003	-0.032	0.084*
MBQ_27	0.068	0.044	0.128*	**0.621***	0.065*	-0.055	0.032	-0.308*	0.028	-0.074
MBQ_28	0.283*	-0.051	0.142*	**0.559***	0.037	0.003	0.001	-0.027	0.013	-0.056
MBQ_33	-0.031	-0.083*	0.170*	**0.706***	0.016	-0.006	-0.032	-0.061	0.054	-0.224*
FSQ_2	-0.004	-0.017	-0.025	0.028	0.266*	**0.584***	0.051*	-0.359*	-0.222*	-0.060*
FSQ_6	0.032	-0.015	0.021	-0.098*	0.303*	**0.680***	0.028	-0.374*	-0.263*	-0.049
FSQ_7	-0.107*	-0.089*	-0.083*	0.019	-0.027	**0.614***	-0.268*	-0.049	0.038	-0.027
FSQ_10	0.002	0.043	-0.023	-0.023	0.308*	**0.604***	0.007	-0.407*	-0.273*	-0.049*
FSQ_15	-0.137*	-0.014	-0.048	0.082*	-0.052*	**0.674***	-0.332*	0.024	-0.01	0.033
FSQ_31	-0.158*	-0.064	0.005	0.039	-0.016	**0.551***	-0.395*	-0.013	0.066*	0.023
FSQ_39	-0.116*	0.026	0.004	0.038	-0.03	**0.622***	-0.322*	0.077*	0.012	0.117*
FSQ_4	-0.073	-0.016	0.111	0.023	-0.161*	0.054*	**0.849***	-0.077	0.058	0.041
FSQ_8	-0.062	-0.034	0.164*	0.01	-0.184*	0.043	**0.839***	-0.111*	0.111*	-0.003
FSQ_14R	0.048	0.036	0.057	-0.195*	0.017	-0.096*	0.033	**0.522***	0.044	-0.033
FSQ_18R	-0.132	-0.006	0.102*	-0.059	0.056*	-0.016	-0.033	**0.754***	0.052	-0.317*
FSQ_22R	0.023	0.016	-0.055	-0.236*	0.001	-0.002	-0.067*	**0.639***	-0.021	-0.075
FSQ_26R	-0.121*	-0.034	0.055	0.01	0.013	-0.049*	0.043	**0.757***	0.016	-0.307*
FSQ_30R	-0.087*	0.121*	-0.165*	-0.150*	0.141*	0.062*	-0.063*	**0.436***	0.017	-0.048
FSQ_37	0.023	0.028	0.013	-0.026	-0.013	0.335*	-0.048	**0.533***	0.162*	-0.014
FSQ_17	0.011	0.046	-0.023	0.014	0.035	0.125*	0.103*	0.051*	**0.765***	-0.191*
FSQ_25	-0.046	0.017	0.085*	-0.021	-0.008	0.027	0.024	0.041	**0.731***	0.042
FSQ_29	0.034	0.004	-0.041	-0.03	0.036	0.084*	-0.026	0.055*	**0.872***	-0.163*
FSQ_33	-0.01	-0.007	0.032	-0.035	-0.098*	0.009	0.009	-0.055	**0.698***	0.022

FSQ_24	0.032	0.013	0.048	-0.275*	0.027	0.289*	0.101*	0.023	0.077*	**0.721***
FSQ_36	-0.044	-0.001	0.05	-0.248*	0.037	0.302*	0.037	0.049	0.065	**0.673***

Note. Items with primary factor loadings ≥.50 and secondary factor loadings ≥.40 and those that did not load on more than one factor were retained

Table 7

Dropped items from the MFQ after EFA step 1

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
AYCE_15	**0.422***	-0.051	**0.462***	0.086*	-0.101*	-0.02	-0.033	-0.047	0.017	-0.114*
MBQ_1	0.047	0.019	**0.494***	0.072	0.237*	0.033	0.154*	0.022	-0.117*	0.137*
MBQ_14	-0.078	-0.028	**0.466***	0.244*	0.103*	-0.062	0.168*	-0.024	0.067	0.228*
MBQ_18	-0.076	-0.150*	**0.431***	**0.448***	-0.163*	-0.003	0.048	-0.001	-0.034	0.141*
MBQ_19	-0.026	0.054	**0.379***	**0.436***	-0.037	0.032	0.079*	-0.039	-0.01	0.052
MBQ_21	0.114*	-0.051	**0.384***	**0.414***	**0.277***	0.045	-0.011	0.051	0.053	-0.095
MBQ_25	0.087*	0.090*	**0.396***	**0.255***	**0.328***	-0.024	-0.013	0.116*	0.045	0.108
MBQ_2	-0.095*	0.186*	**0.370***	0.095	**0.248***	-0.001	-0.001	-0.004	-0.055	0.109
MBQ_5	-0.027	-0.044	**0.551***	-0.124*	**0.513***	0.033	-0.070*	-0.014	0.003	0.018
MBQ_12	-0.028	-0.013	**0.500***	0.071	**0.541***	0	0.039	0.004	0.037	0.238*
MBQ_13	0.05	-0.016	**0.408***	0.098	**0.532***	0.027	-0.017	-0.012	0.042	0.222*
MBQ_31	0.104*	-0.243*	**0.595***	0.021	-0.012	0.014	-0.112*	0.038	-0.055	**0.451***
MBQ_4	0.216*	-0.002	0.290*	0.263*	**0.438***	0.028	-0.003	0.082*	-0.025	-0.096
MBQ_22	**0.441***	0.072*	0.012	**0.451***	0.231*	-0.009	-0.137*	0.02	-0.043	0.028
MBQ_23	0.252*	-0.023	-0.014	**0.453***	0.091*	-0.013	0.124*	0.086*	0.042	0.087
FSQ_1	0.037	0.217*	-0.096	-0.01	-0.224*	**0.445***	0.058*	0.237*	0.118*	0.085*
FSQ_5	0.044	0.208*	-0.170*	0.082*	-0.318*	**0.471***	0.014	0.302*	0.095*	0.110*
FSQ_11	0	-0.015	0.064	-0.081	0.071*	**0.375***	-0.324*	-0.304*	0.004	-0.167*
FSQ_19	0.003	0.098*	0.208*	-0.193*	-0.054	**0.313***	-0.374*	-0.169*	0.072*	-0.046
FSQ_23	-0.075	0.096*	0.174*	-0.213*	0.001	**0.333***	-0.365*	-0.250*	0.048	0.053
FSQ_35	-0.033	-0.029	0.079	0.024	0.012	**0.484***	-0.267*	-0.032	-0.039	0.029
FSQ_16	0.045	0.193*	-0.02	-0.036	0.043	**0.322***	**0.316***	-0.018	-0.023	**0.286***
FSQ_20	0.131*	0.089*	-0.036	0.076	0.024	**0.262***	**0.328***	0.002	0.018	**0.274***
FSQ_27R	-0.187*	0.082*	-0.097*	-0.027	-0.01	-0.211*	**0.387***	**0.282***	-0.036	0.093*
FSQ_13	0.017	0.144*	0.081*	-0.044	0.023	0.225*	0.057*	0.159*	**0.442***	0.016
FSQ_32	-0.024	-0.081*	0.045	-0.124*	-0.126*	0.130*	0.093*	-0.090*	0.073*	**0.340***

Table 8

EFA step 2 fit statistics excluding dropped items from EFA step 1

# of Factors	χ^2	df	χ^2/df	RMSEA	90% CI		CFI	TLI	SRMR	Fit
1	24331.49	1539	15.81	0.129	0.128	0.131	0.534	0.516	0.139	poor
2	17468.71	1483	11.78	0.11	0.109	0.112	0.673	0.648	0.125	poor
3	12114.97	1428	8.48	0.092	0.090	0.093	0.781	0.756	0.1	poor
4	8986.22	1374	6.54	0.079	0.077	0.081	0.844	0.819	0.081	mediocre
5	7442.36	1321	5.63	0.072	0.071	0.074	0.875	0.849	0.067	adequate
6	6143.554	1269	4.84	0.066	0.064	0.067	0.9	0.875	0.055	adequate
7	4999.039	1218	4.10	0.059	0.057	0.061	0.923	0.899	0.046	adequate
8	4107.854	1168	3.52	0.053	0.051	0.055	0.94	0.918	0.041	adequate
9	3390	1119	3.03	0.048	0.046	0.050	0.95	0.93	0.037	acceptable
10	2881.37	1071	2.69	0.044	0.042	0.046	0.96	0.95	0.034	acceptable

Note. Item level analysis and model fit were further explored at the 9-factor model.

Table 9

Items retained in the MFQ after EFA step 2

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
AYCE_1	**0.786***	-0.087*	-0.009	-0.07	-0.04	-0.008	-0.03	-0.021	0.008
AYCE_2	**0.639***	0.017	-0.148*	0.162*	0.098*	0.001	-0.089*	0.007	-0.031
AYCE_4	**0.874***	-0.039	-0.065*	0.033	-0.075*	0.083*	-0.024	-0.034	-0.067*
AYCE_5	**0.850***	-0.046	0.039	-0.034	-0.102*	0.102*	-0.066*	-0.027	-0.05
AYCE_6	**0.729***	-0.052	0.042	0.024	-0.060*	0.01	0.008	0.025	0.104*
AYCE_7	**0.779***	0.072*	-0.181*	0.165*	0.027	0.005	-0.06	-0.05	-0.027
AYCE_16	**0.586***	-0.072*	0.042	0.244*	-0.016	0.027	0.114*	0.107*	0.05
AYCE_17	**0.704***	-0.098*	0.039	-0.068	-0.027	0.037	-0.04	0.057	-0.041
AYCE_18	**0.554***	-0.043	0.336*	0.076*	0.008	0.001	0.181*	0.041	0.015
AYCE_19	**0.757***	-0.042	-0.019	0.160*	0.043	-0.011	0.062*	0.041	-0.024
AYCE_20	**0.715***	-0.069*	0.080*	0.054	0.004	-0.027	0.023	0.160*	0.175*
AYCE_3	-0.152*	**0.636***	0.063	0.037	-0.01	-0.068*	-0.062*	-0.053	0.054
AYCE_8	-0.047	**0.787***	-0.013	0.024	-0.023	0.022	0.036	0.003	-0.001
AYCE_9	-0.464*	**0.587***	0.035	0.092*	0.083*	0.019	0.065*	0.102*	-0.017
AYCE_10	-0.221*	**0.797***	-0.008	-0.011	0.013	0.001	0.004	0.034	0.019
AYCE_11	-0.019	**0.629***	-0.028	-0.001	0.103*	0.077*	-0.015	0.001	-0.002
AYCE_13	-0.008	**0.684***	-0.102*	0.03	-0.05	0.094*	0.051	-0.065*	-0.032
MBQ_7	0.313*	0.03	**0.740***	-0.013	0.074*	-0.172*	0.273*	-0.014	0.023
MBQ_8	0.289*	0.022	**0.834***	-0.038	0.064	-0.143*	0.291*	-0.028	-0.048
MBQ_9	0.087	0.039	**0.869***	-0.064	-0.032	0.128*	0.013	0.051	-0.260*
MBQ_10	0.015	-0.018	**0.858***	-0.01	-0.03	0.07	-0.029	0.037	-0.245*
MBQ_11	-0.041	-0.118	**0.648***	0.261*	0.008	0.093	-0.118*	0.044	-0.039
MBQ_20	0.122*	-0.003	**0.651***	0.123*	-0.038	0.041	0.032	0.048	0.051
MBQ_26	-0.024	-0.043	**0.698***	0.126	-0.043	-0.080*	0.028	-0.013	0.098
MBQ_30	-0.279*	-0.283*	**0.762***	0.215*	-0.007	0.046	-0.059	-0.024	0.066

MBQ_32	-0.09	-0.278*	**0.703***	0.184	-0.059	-0.034	-0.049	0.012	0.215*
MBQ_3	0.102	-0.018	0.005	**0.615***	0.012	0.014	-0.046	0.031	-0.328*
MBQ_6	0.224*	0.012	0.294*	**0.479***	0.024	-0.039	-0.039	-0.034	-0.241*
MBQ_16	0.312*	0.052	0.019	**0.565***	-0.077	-0.063	0.049	0.037	0.117
MBQ_17	0.333*	0.037	-0.075*	**0.602***	-0.036	-0.038	0.03	0.029	0.129
MBQ_27	0.163*	0.049	0.212*	**0.506***	0.01	-0.011	-0.254*	0.049	-0.175*
MBQ_33	0.038	-0.079*	0.203*	**0.613***	-0.004	0.035	-0.015	-0.004	-0.264*
FSQ_2	0.022	0.022	0.018	-0.147	**0.674***	-0.045*	-0.112	0.376*	-0.008
FSQ_6	0.033	0.023	0.049	-0.274	**0.776***	-0.050*	-0.078	0.423*	0.007
FSQ_7	-0.157*	-0.096*	-0.086	0.013	**0.620***	0.266*	0.032	0.008	-0.005
FSQ_10	0.026	0.089*	0.025	-0.204	**0.703***	-0.058*	-0.169*	0.342*	-0.074*
FSQ_15	-0.188*	-0.051	-0.106*	0.118	**0.652***	0.255*	0.053	-0.056	0.008
FSQ_31	-0.203*	-0.072*	-0.029	0.076	**0.550***	0.268*	0.033	-0.106*	-0.057*
FSQ_39	-0.147*	0.012	-0.059	0.112	**0.578***	0.235*	0.085*	-0.068	0.087*
FSQ_17	0.047	0.069*	0.017	-0.089*	0.037	**0.805***	0.041	0.117*	0.013
FSQ_25	-0.027	0.026	0.147*	0.001	-0.026	**0.713***	-0.019	-0.03	0.113*
FSQ_29	0.056	0.037	0.016	-0.076*	0.019	**0.894***	0.034	0.005	-0.021
FSQ_33	-0.012	0.012	0.085*	0.01	-0.043	**0.690***	-0.093*	-0.017	0.089*
FSQ_14R	0.037	0.042	0.042	-0.149*	-0.166*	0.002	**0.460***	-0.095*	0.107*
FSQ_18R	-0.158*	0.031	0.033	-0.04	-0.125	0.066*	**0.760***	-0.025	-0.106*
FSQ_22R	0.005	0.032	-0.109*	-0.184*	-0.109	0	**0.539***	-0.161*	0.052
FSQ_26R	-0.127*	-0.001	-0.037	0.006	-0.177*	0.004	**0.752***	0.036	-0.065
FSQ_37	0.029	0.041	-0.065	0.023	0.204*	0.259*	**0.498***	0.012	0.190*
FSQ_8	-0.040*	-0.037	-0.019	0.011	-0.075*	0.069*	-0.001	**0.820***	0.582*
FSQ_24	0.084*	0.033	0.156	-0.054	0.346*	0.044	-0.035	-0.009	**0.815***
FSQ_36	-0.011	0.018	0.161	-0.024	0.354*	0.036	-0.001	-0.047	**0.742***

Note. Items with primary factor loadings ≥.50 and secondary factor loadings ≥.40 and those that did not load on more than one factor were retained

Table 10

Dropped items from the MFQ after EFA step 2

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
AYCE_12	**0.399***	-0.373*	0.009	0.089	0.015	-0.001	**0.279***	**0.290***	-0.032
AYCE_14	**0.349***	-0.310*	0.087*	0.068	0.05	-0.004	**0.319***	**0.343***	-0.067
MBQ_24	**0.483***	0.039	0.049	**0.505***	0.039	-0.055*	-0.005	-0.036	0.05
MBQ_28	**0.404***	-0.02	0.193*	**0.456***	-0.003	0.009	-0.037	-0.03	-0.065
FSQ_4	-0.004	-0.001	-0.056*	0.021	-0.055*	0.01	-0.005	**0.765***	**0.637***
FSQ_30R	-0.033	0.177*	-0.145*	-0.161*	0.002	0.042	**0.353***	-0.127*	0.032

Table 11

EFA step 3 fit statistics excluding dropped items from EFA steps 1 and 2.

# of Factors	χ^2	df	χ^2/df	RMSEA	90% CI		CFI	TLI	SRMR	Fit
1	19975.29	1224	16.32	0.131	0.130	0.133	0.56	0.542	0.147	poor
2	14346.69	1174	12.22	0.112	0.111	0.114	0.691	0.665	0.127	poor
3	9432.877	1125	8.38	0.091	0.089	0.093	0.805	0.779	0.098	mediocre
4	7522.724	1077	6.98	0.082	0.080	0.084	0.849	0.821	0.078	adequate
5	5870.081	1030	5.70	0.073	0.071	0.075	0.887	0.86	0.062	adequate
6	4679.994	984	4.76	0.065	0.063	0.067	0.913	0.888	0.053	adequate
7	3566.722	939	3.80	0.056	0.054	0.058	0.938	0.916	0.043	adequate
8	2722.06	895	3.04	0.048	0.046	0.050	0.96	0.94	0.037	acceptable
9	2227.7	852	2.61	0.043	0.040	0.045	0.97	0.95	0.032	excellent
10	1885.31	810	2.33	0.039	0.036	0.041	0.98	0.96	0.028	excellent

Note. Item level analysis and model fit were further explored at the 9-factor model.

Table 12

Items retained in the MFQ after EFA step 3

	1	2	3	4	5	6	7	8	9
AYCE_1	**0.705***	-0.103*	0.017	-0.033	0.078*	0.017	0.015	-0.160*	0.013
AYCE_2	**0.667***	0.043	-0.079	0.097*	0.004	-0.005	-0.169*	0.023	-0.027
AYCE_4	**0.803***	-0.052*	-0.029	0.069*	0.037	0.098*	0.02	-0.152*	-0.034
AYCE_5	**0.747***	-0.074*	0.057*	0.014	0.090*	0.141*	0.015	-0.232*	-0.03
AYCE_6	**0.694***	-0.035	0.086*	-0.008	-0.059	0.031	-0.04	-0.107*	0.107*
AYCE_7	**0.799***	0.085*	-0.104*	0.091*	-0.069*	-0.01	-0.132*	0.018	-0.031
AYCE_16	**0.597***	-0.033	0.123*	0.192*	-0.129*	0.004	0.009	0.033	0.104*
AYCE_17	**0.634***	-0.103*	0.071*	-0.009	0.116*	0.066*	-0.008	-0.182*	-0.021
AYCE_18	**0.513***	-0.027	0.435*	0.033	-0.056	-0.028	0.147*	0.042	0.035
AYCE_19	**0.772***	-0.018	0.095*	0.082*	-0.073*	-0.041	-0.036	0.048	-0.019
AYCE_20	**0.675***	-0.053	0.123*	0.064	0.016	-0.008	-0.024	-0.101	0.207*
AYCE_3	-0.140*	**0.639***	0.04	0.004	-0.023	-0.052	-0.069*	-0.009	0.062*
AYCE_8	-0.051	**0.793***	-0.024	0.026	0.028	0.051	0.048	-0.053*	0.022
AYCE_9	-0.388*	**0.622***	0.059*	0.045	-0.022	0	-0.013	0.126*	-0.008
AYCE_10	-0.188*	**0.813***	-0.012	-0.049	0.02	0.024	-0.029	-0.019	0.013
AYCE_11	0.005	**0.630***	-0.017	-0.019	0.075*	0.061	-0.002	0.067	0
AYCE_13	-0.003	**0.687***	-0.121*	0.004	-0.026	0.120*	0.047	-0.039	-0.01
MBQ_7	0.159*	0.019	**0.813***	-0.012	0.142*	-0.158*	0.360*	-0.003	0.016
MBQ_8	0.122	0.015	**0.917***	-0.03	0.154*	-0.126*	0.378*	-0.018	-0.055*
MBQ_9	0.068	0.069*	**0.978***	-0.063	-0.032	0.057	-0.014	0.039	-0.273*
MBQ_10	0.004	0.005	**0.969***	-0.023	-0.066*	-0.013	-0.059	0.076	-0.260*
MBQ_11	-0.081	-0.089	**0.651***	0.291*	-0.014	0.083	-0.144*	0.013	0.008
MBQ_20	0.024	-0.004	**0.679***	0.134*	0.027	0.057	0.086*	-0.057	0.07
MBQ_26	-0.108	-0.014	**0.710***	0.082	-0.025	-0.048	0.027	-0.059	0.115*
MBQ_30	-0.367*	-0.252*	**0.688***	0.270*	-0.004	0.068	-0.057	-0.017	0.146*

MBQ_32	-0.187*	-0.250*	**0.645***	0.171	-0.02	0.033	-0.045	-0.111	0.250*
MBQ_3	0.083	-0.018	0.015	**0.731***	0.041	-0.02	-0.005	0.056	-0.157
MBQ_6	0.131*	-0.005	0.307*	**0.564***	0.112*	-0.048	0.051	-0.012	-0.096
MBQ_16	0.251*	0.038	-0.009	**0.588***	-0.083	-0.039	0.08	-0.025	0.268*
MBQ_17	0.315*	0.026	-0.055	**0.524***	-0.136*	-0.029	0.005	0.052	0.215*
MBQ_27	0.115*	0.049	0.191*	**0.580***	0.111*	0.001	-0.203*	-0.093*	-0.028
MBQ_33	0.001	-0.075*	0.208*	**0.689***	-0.011	-0.004	0.015	0.075	-0.087
FSQ_2	-0.026	-0.003	-0.039	0.095*	**0.781***	-0.007	-0.027	0.043	0.069*
FSQ_6	-0.009	0.003	0.013	-0.043	**0.874***	-0.018	0.001	0.073*	0.057*
FSQ_10	0.014	0.080*	0.011	0.002	**0.770***	-0.050*	-0.107*	0.093*	-0.036
FSQ_17	0.058*	0.052	0.017	-0.096*	0.04	**0.794***	0.046	0.04	-0.028
FSQ_25	-0.068*	0.012	0.052	0.034	-0.042	**0.718***	0.008	0.019	0.132*
FSQ_29	0.061*	0.018	-0.02	-0.083*	-0.004	**0.873***	0.052*	0.071*	-0.037
FSQ_33	-0.037	-0.002	-0.007	0.039	-0.033	**0.703***	-0.067*	-0.018	0.096*
FSQ_18R	-0.275*	0.006	0.009	0.039	-0.015	0.120*	**0.799***	-0.019	-0.047
FSQ_22R	-0.008	0.018	-0.031	-0.284*	-0.257*	-0.041	**0.502***	0.183*	-0.031
FSQ_26R	-0.251*	-0.031	-0.061	0.087*	-0.036	0.088*	**0.764***	-0.095*	-0.012
FSQ_7	-0.038	-0.072*	-0.044	0.005	0.228*	0.104*	-0.01	**0.583***	-0.012
FSQ_15	-0.006	-0.005	-0.003	0.01	0.082	0.028	-0.039	**0.768***	-0.039
FSQ_31	-0.075	-0.042	0.028	0.021	0.099*	0.081*	-0.016	**0.632***	-0.069
FSQ_39	-0.017	0.046	-0.007	0.036	0.08	0.05	0.024	**0.664***	0.084
FSQ_24	0.064*	0.026	0.015	-0.112	0.026	0.016	-0.027	0.280*	**0.829***
FSQ_36	-0.034	0.008	0.027	-0.07	0.02	-0.003	0.012	0.323*	**0.751***

Note. Items with primary factor loadings ≥.50 and secondary factor loadings ≥.40 and those that did not load on more than one factor were retained.

Table 13

Dropped items from the MFQ after EFA step 3

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
FSQ_8	0.011	-0.02	0.109*	-0.019	0.037	**0.158***	-0.087*	-0.196*	**0.295***
FSQ_14R	-0.012	0.036	0.08	-0.215*	-0.208*	0.006	**0.445***	0.034	0.062
FSQ_37	0.028	0.036	-0.041	-0.043	-0.031	0.201*	**0.481***	**0.339***	0.196*

Table 14

EFA step 4 fit statistics excluding dropped items from EFA steps 1, 2, and 3

# of Factors	χ^2	df	χ^2/df	RMSEA	90% CI		CFI	TLI	SRMR	Fit
1	19698.17	1080	18.24	0.139	0.138	0.141	0.558	0.538	0.148	poor
2	13649.36	1033	13.21	0.117	0.115	0.119	0.701	0.673	0.127	poor
3	9033.136	987	9.15	0.096	0.094	0.098	0.809	0.782	0.100	mediocre
4	7292.592	942	7.74	0.087	0.085	0.089	0.849	0.820	0.080	mediocre
5	5694.207	898	6.34	0.078	0.076	0.079	0.886	0.857	0.063	adequate
6	4491.871	855	5.25	0.069	0.067	0.071	0.914	0.886	0.053	adequate
7	3318.938	813	4.08	0.059	0.057	0.061	0.941	0.917	0.043	adequate
8	2570.782	772	3.33	0.051	0.049	0.053	0.957	0.938	0.037	adequate
9	2080.866	732	2.84	0.046	0.043	0.048	0.968	0.951	0.033	excellent
10	1751.839	693	2.53	0.041	0.039	0.044	0.975	0.959	0.028	excellent

Note. Item level analysis and model fit were further explored at the 9-factor model

Table 15

Items retained in the MFQ after EFA step 3

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
AYCE_1	**0.722***	-0.104*	0.015	-0.041	0.081*	0.011	-0.154*	0.013	0.014
AYCE_2	**0.630***	0.049	-0.082*	0.081	0.010	-0.002	0.009	-0.199*	-0.041
AYCE_4	**0.813***	-0.047*	-0.040	0.061	0.042	0.102*	-0.159*	-0.005	-0.037
AYCE_5	**0.765***	-0.078*	0.050*	0.011	0.102*	0.136*	-0.227*	0.016	-0.024
AYCE_6	**0.697***	-0.031	0.082*	-0.017	-0.056	0.030	-0.117*	-0.066*	0.099*
AYCE_7	**0.769***	0.088*	-0.108*	0.077	-0.065*	-0.008	0.016	-0.154*	-0.043
AYCE_16	**0.614***	-0.027	0.117*	0.179*	-0.155*	0.004	0.037	-0.021	0.081
AYCE_17	**0.652***	-0.110*	0.068*	-0.013	0.122*	0.056	-0.164*	0.007	-0.011
AYCE_18	**0.570***	-0.022	0.419*	0.027	-0.096*	-0.022	0.050	0.117*	0.029
AYCE_19	**0.776***	-0.016	0.089*	0.068	-0.095*	-0.044	0.063*	-0.056	-0.033
AYCE_20	**0.698***	-0.057*	0.123*	0.058	0.004	-0.021	-0.080	-0.023	0.193*
AYCE_3	-0.156*	**0.630***	0.042	0.007	-0.011	-0.057	-0.011	-0.043	0.072*
AYCE_8	-0.048	**0.790***	-0.023	0.024	0.031	0.052	-0.061*	0.052	0.025
AYCE_9	-0.399*	**0.622***	0.062*	0.048	-0.031	0.002	0.126*	-0.010	-0.015
AYCE_10	-0.201*	**0.805***	-0.002	-0.052	0.026	0.015	-0.018	-0.003	0.023
AYCE_11	-0.008	**0.634***	-0.021	-0.018	0.077*	0.071*	0.049	-0.021	-0.006
AYCE_13	-0.001	**0.685***	-0.113*	-0.006	-0.024	0.120*	-0.044	0.059	0.005
MBQ_7	0.291*	0.019	**0.790***	-0.014	0.066	-0.158*	0.026	0.354*	0.025
MBQ_8	0.258*	0.016	**0.892***	-0.031	0.077*	-0.123*	0.006	0.367*	-0.045
MBQ_9	0.090*	0.069*	**0.951***	-0.057	-0.038	0.062	0.012	-0.036	-0.286*
MBQ_10	0.013	0.004	**0.939***	-0.015	-0.070*	-0.010	0.045	-0.084*	-0.277*
MBQ_11	-0.076	-0.099	**0.627***	0.303*	-0.003	0.084	-0.003	-0.14*	-0.003
MBQ_20	0.077	0.000	**0.654***	0.138	0.015	0.065	-0.085	0.052	0.057
MBQ_26	-0.063	-0.015	**0.687***	0.089	-0.031	-0.041	-0.084	0.011	0.112*
MBQ_30	-0.329*	-0.265*	**0.665***	0.287	0.004	0.067	-0.027	-0.032	0.154*

MBQ_32	-0.143*	-0.258*	**0.628***	0.174	-0.015	0.029	-0.131*	-0.038	0.254*
MBQ_3	0.096*	-0.019	-0.007	**0.731***	0.034	-0.019	0.070	0.008	-0.181
MBQ_6	0.177*	-0.010	0.280*	**0.566***	0.102*	-0.044	-0.006	0.070*	-0.095
MBQ_16	0.293*	0.046	-0.024	**0.581***	-0.109*	-0.031	-0.024	0.050	0.232
MBQ_17	0.331*	0.035	-0.067	**0.516***	-0.160*	-0.021	0.051	-0.030	0.179
MBQ_27	0.098*	0.040	0.169*	**0.585***	0.140*	-0.003	-0.103*	-0.193*	-0.042
MBQ_33	0.023	-0.073*	0.176*	**0.692***	-0.012	0.009	0.060	0.007	-0.105
FSQ_2	-0.007	0.003	-0.046	0.101*	**0.780***	-0.002	0.041	-0.025	0.053
FSQ_6	0.016	0.010	0.005	-0.033	**0.869***	-0.010	0.071*	-0.003	0.041
FSQ_10	0.009	0.084*	0.007	0.008	**0.773***	-0.049*	0.091*	-0.101*	-0.050*
FSQ_17	0.066*	0.057	0.019	-0.094*	0.030	**0.796***	0.047	0.018	-0.033
FSQ_25	-0.055	0.006	0.051	0.036	-0.029	**0.717***	0.011	0.015	0.157*
FSQ_29	0.068*	0.023	-0.022	-0.081*	-0.006	**0.880***	0.069*	0.029	-0.020
FSQ_33	-0.036	-0.013	-0.002	0.041	-0.017	**0.690***	-0.005	-0.037	0.122*
FSQ_7	-0.035	-0.070*	-0.045	0.003	0.203*	0.098*	**0.599***	0.023	0.012
FSQ_15	-0.013	-0.004	-0.001	0.004	0.034	0.012	**0.808***	-0.006	-0.019
FSQ_31	-0.084*	-0.038	0.016	0.026	0.077*	0.085*	**0.634***	-0.001	-0.038
FSQ_39	-0.027	0.063*	-0.014	0.028	0.045	0.061*	**0.637***	-0.013	0.079
FSQ_18R	-0.089	0.026	0.005	0.012	-0.087	0.143*	-0.011	**0.795***	-0.017
FSQ_22R	0.052	0.044	-0.052	-0.268*	-0.293*	0.002	0.144*	**0.425***	-0.030
FSQ_26R	-0.075	-0.007	-0.068	0.061	-0.106	0.110*	-0.085*	**0.734***	0.001
FSQ_24	0.094*	0.029	0.017	-0.111	0.020	0.017	0.253*	-0.021	**0.851***
FSQ_36	-0.009	0.018	0.028	-0.067	0.010	0.010	0.283*	0.002	**0.744***

Note. Items with primary factor loadings ≥.50 and secondary factor loadings ≥.40 and those that did not load on more than one factor were retained.

Table 16
Full model results for factors 1 to 9 and CFA for stress and internalizing symptoms

	BY	Estimate	S.E.	p-value
F1	AYCE_1	0.710	0.029	0.000
	AYCE_2	0.634	0.038	0.000
	AYCE_3	-0.156	0.037	0.000
	AYCE_4	0.804	0.023	0.000
	AYCE_5	0.752	0.028	0.000
	AYCE_6	0.692	0.029	0.000
	AYCE_7	0.765	0.033	0.000
	AYCE_8	-0.041	0.032	0.205
	AYCE_9	-0.392	0.038	0.000
	AYCE_10	-0.195	0.038	0.000
	AYCE_11	-0.007	0.030	0.808
	AYCE_13	-0.001	0.025	0.966
	AYCE_16	0.604	0.036	0.000
	AYCE_17	0.641	0.031	0.000
	AYCE_18	0.562	0.043	0.000
	AYCE_19	0.772	0.026	0.000
	AYCE_20	0.682	0.036	0.000
	MBQ_3	0.091	0.044	0.042
	MBQ_6	0.167	0.050	0.001
	MBQ_7	0.282	0.072	0.000
	MBQ_8	0.252	0.073	0.001
	MBQ_9	0.090	0.042	0.034
	MBQ_10	0.012	0.019	0.534
	MBQ_11	-0.087	0.060	0.150
	MBQ_16	0.267	0.058	0.000
	MBQ_17	0.326	0.051	0.000
	MBQ_20	0.067	0.050	0.179
	MBQ_26	-0.067	0.052	0.196
	MBQ_27	0.089	0.042	0.036
	MBQ_30	-0.339	0.086	0.000
	MBQ_32	-0.150	0.071	0.034
	MBQ_33	0.020	0.028	0.472
	FSQ_2	-0.004	0.027	0.895
	FSQ_6	0.026	0.024	0.282
	FSQ_7	-0.031	0.031	0.311
	FSQ_10	0.000	0.022	0.984
	FSQ_15	-0.020	0.026	0.441
	FSQ_17	0.086	0.035	0.015
	FSQ_18R	-0.098	0.051	0.055
	FSQ_22R	0.050	0.030	0.101
	FSQ_24	0.103	0.045	0.021
	FSQ_25	-0.060	0.029	0.041

	FSQ_26R	-0.071	0.039	0.069
	FSQ_29	0.081	0.033	0.015
	FSQ_31	-0.087	0.039	0.027
	FSQ_33	-0.042	0.028	0.139
	FSQ_36	-0.013	0.018	0.460
	FSQ_39	-0.033	0.032	0.309
F2	AYCE_1	-0.108	0.030	0.000
	AYCE_2	0.051	0.028	0.071
	AYCE_3	0.632	0.026	0.000
	AYCE_4	-0.052	0.022	0.018
	AYCE_5	-0.084	0.027	0.002
	AYCE_6	-0.035	0.026	0.169
	AYCE_7	0.088	0.026	0.001
	AYCE_8	0.791	0.019	0.000
	AYCE_9	0.626	0.027	0.000
	AYCE_10	0.807	0.019	0.000
	AYCE_11	0.637	0.030	0.000
	AYCE_13	0.689	0.026	0.000
	AYCE_16	-0.027	0.026	0.303
	AYCE_17	-0.114	0.028	0.000
	AYCE_18	-0.020	0.025	0.429
	AYCE_19	-0.014	0.020	0.463
	AYCE_20	-0.061	0.029	0.036
	MBQ_3	-0.023	0.028	0.404
	MBQ_6	-0.013	0.026	0.622
	MBQ_7	0.019	0.026	0.467
	MBQ_8	0.015	0.023	0.519
	MBQ_9	0.065	0.032	0.042
	MBQ_10	0.004	0.030	0.898
	MBQ_11	-0.106	0.063	0.094
	MBQ_16	0.043	0.033	0.190
	MBQ_17	0.035	0.031	0.266
	MBQ_20	-0.003	0.037	0.929
	MBQ_26	-0.014	0.041	0.734
	MBQ_27	0.039	0.025	0.124
	MBQ_30	-0.276	0.074	0.000
	MBQ_32	-0.262	0.073	0.000
	MBQ_33	-0.075	0.033	0.024
	FSQ_2	0.004	0.021	0.842
	FSQ_6	0.012	0.021	0.565
	FSQ_7	-0.069	0.034	0.039
	FSQ_10	0.082	0.030	0.006
	FSQ_15	-0.004	0.023	0.876
	FSQ_17	0.054	0.034	0.112
	FSQ_18R	0.032	0.030	0.278
	FSQ_22R	0.046	0.035	0.196

	FSQ_24	0.028	0.023	0.213
	FSQ_25	0.007	0.028	0.812
	FSQ_26R	-0.008	0.024	0.742
	FSQ_29	0.022	0.023	0.328
	FSQ_31	-0.035	0.031	0.265
	FSQ_33	-0.015	0.031	0.627
	FSQ_36	0.014	0.024	0.555
	FSQ_39	0.062	0.031	0.046
F3	AYCE_1	0.016	0.026	0.550
	AYCE_2	-0.093	0.043	0.030
	AYCE_3	0.044	0.037	0.241
	AYCE_4	-0.040	0.023	0.085
	AYCE_5	0.055	0.026	0.037
	AYCE_6	0.077	0.035	0.027
	AYCE_7	-0.115	0.039	0.003
	AYCE_8	-0.028	0.026	0.289
	AYCE_9	0.064	0.025	0.011
	AYCE_10	-0.003	0.019	0.860
	AYCE_11	-0.018	0.036	0.607
	AYCE_13	-0.113	0.035	0.001
	AYCE_16	0.123	0.053	0.020
	AYCE_17	0.071	0.033	0.031
	AYCE_18	0.426	0.046	0.000
	AYCE_19	0.086	0.036	0.016
	AYCE_20	0.131	0.039	0.001
	MBQ_3	0.002	0.034	0.954
	MBQ_6	0.295	0.043	0.000
	MBQ_7	0.806	0.039	0.000
	MBQ_8	0.907	0.039	0.000
	MBQ_9	0.963	0.036	0.000
	MBQ_10	0.955	0.035	0.000
	MBQ_11	0.647	0.053	0.000
	MBQ_16	0.003	0.028	0.924
	MBQ_17	-0.061	0.037	0.101
	MBQ_20	0.671	0.039	0.000
	MBQ_26	0.700	0.043	0.000
	MBQ_27	0.183	0.052	0.000
	MBQ_30	0.688	0.056	0.000
	MBQ_32	0.643	0.048	0.000
	MBQ_33	0.185	0.047	0.000
	FSQ_2	-0.044	0.034	0.192
	FSQ_6	-0.001	0.023	0.981
	FSQ_7	-0.048	0.035	0.173
	FSQ_10	0.021	0.027	0.429
	FSQ_15	0.004	0.028	0.895
	FSQ_17	0.014	0.030	0.628

	FSQ_18R	0.013	0.017	0.457
	FSQ_22R	-0.056	0.040	0.159
	FSQ_24	0.009	0.022	0.687
	FSQ_25	0.061	0.035	0.076
	FSQ_26R	-0.081	0.040	0.042
	FSQ_29	-0.022	0.024	0.355
	FSQ_31	0.019	0.038	0.615
	FSQ_33	0.009	0.032	0.785
	FSQ_36	0.035	0.032	0.287
	FSQ_39	-0.010	0.033	0.767
F4	AYCE_1	-0.023	0.031	0.454
	AYCE_2	0.093	0.047	0.048
	AYCE_3	-0.002	0.031	0.939
	AYCE_4	0.095	0.035	0.006
	AYCE_5	0.037	0.030	0.225
	AYCE_6	-0.030	0.032	0.347
	AYCE_7	0.101	0.043	0.018
	AYCE_8	0.028	0.028	0.321
	AYCE_9	0.042	0.027	0.128
	AYCE_10	-0.058	0.027	0.034
	AYCE_11	-0.009	0.035	0.797
	AYCE_13	0.008	0.029	0.775
	AYCE_16	0.164	0.043	0.000
	AYCE_17	0.006	0.029	0.841
	AYCE_18	0.016	0.031	0.602
	AYCE_19	0.075	0.036	0.035
	AYCE_20	0.020	0.039	0.606
	MBQ_3	0.765	0.036	0.000
	MBQ_6	0.573	0.035	0.000
	MBQ_7	-0.036	0.027	0.187
	MBQ_8	-0.042	0.026	0.106
	MBQ_9	-0.033	0.028	0.230
	MBQ_10	0.010	0.026	0.690
	MBQ_11	0.262	0.070	0.000
	MBQ_16	0.536	0.064	0.000
	MBQ_17	0.463	0.053	0.000
	MBQ_20	0.102	0.055	0.063
	MBQ_26	0.024	0.043	0.580
	MBQ_27	0.576	0.039	0.000
	MBQ_30	0.189	0.093	0.043
	MBQ_32	0.071	0.063	0.263
	MBQ_33	0.701	0.028	0.000
	FSQ_2	0.086	0.038	0.023
	FSQ_6	-0.056	0.032	0.077
	FSQ_7	-0.004	0.032	0.898
	FSQ_10	0.016	0.019	0.421

	FSQ_15	0.007	0.028	0.800
	FSQ_17	-0.110	0.043	0.011
	FSQ_18R	0.043	0.032	0.185
	FSQ_22R	-0.235	0.050	0.000
	FSQ_24	-0.329	0.153	0.031
	FSQ_25	0.009	0.029	0.754
	FSQ_26R	0.084	0.041	0.041
	FSQ_29	-0.078	0.039	0.049
	FSQ_31	0.035	0.032	0.280
	FSQ_33	0.018	0.027	0.499
	FSQ_36	-0.266	0.137	0.053
	FSQ_39	0.008	0.036	0.826
F5	AYCE_1	0.085	0.031	0.007
	AYCE_2	0.012	0.032	0.712
	AYCE_3	-0.011	0.028	0.689
	AYCE_4	0.046	0.025	0.062
	AYCE_5	0.108	0.029	0.000
	AYCE_6	-0.054	0.031	0.085
	AYCE_7	-0.060	0.029	0.037
	AYCE_8	0.035	0.027	0.193
	AYCE_9	-0.032	0.022	0.147
	AYCE_10	0.032	0.018	0.085
	AYCE_11	0.076	0.035	0.031
	AYCE_13	-0.020	0.026	0.430
	AYCE_16	-0.158	0.036	0.000
	AYCE_17	0.126	0.035	0.000
	AYCE_18	-0.101	0.034	0.003
	AYCE_19	-0.094	0.029	0.001
	AYCE_20	0.005	0.031	0.881
	MBQ_3	0.036	0.027	0.191
	MBQ_6	0.101	0.034	0.003
	MBQ_7	0.057	0.031	0.065
	MBQ_8	0.070	0.029	0.016
	MBQ_9	-0.037	0.027	0.180
	MBQ_10	-0.074	0.032	0.022
	MBQ_11	0.001	0.038	0.984
	MBQ_16	-0.118	0.048	0.014
	MBQ_17	-0.162	0.049	0.001
	MBQ_20	0.010	0.039	0.792
	MBQ_26	-0.034	0.040	0.404
	MBQ_27	0.135	0.041	0.001
	MBQ_30	0.011	0.031	0.713
	MBQ_32	-0.016	0.034	0.643
	MBQ_33	-0.014	0.024	0.562
	FSQ_2	0.776	0.018	0.000
	FSQ_6	0.869	0.016	0.000

	FSQ_7	0.205	0.034	0.000
	FSQ_10	0.770	0.019	0.000
	FSQ_15	0.037	0.028	0.189
	FSQ_17	0.035	0.021	0.107
	FSQ_18R	-0.079	0.043	0.063
	FSQ_22R	-0.283	0.044	0.000
	FSQ_24	0.018	0.021	0.375
	FSQ_25	-0.031	0.027	0.257
	FSQ_26R	-0.077	0.042	0.068
	FSQ_29	-0.006	0.018	0.741
	FSQ_31	0.077	0.034	0.024
	FSQ_33	-0.019	0.026	0.475
	FSQ_36	0.013	0.024	0.586
	FSQ_39	0.046	0.029	0.107
F6	AYCE_1	0.000	0.027	0.988
	AYCE_2	0.014	0.030	0.643
	AYCE_3	-0.065	0.031	0.040
	AYCE_4	0.090	0.024	0.000
	AYCE_5	0.120	0.030	0.000
	AYCE_6	0.029	0.028	0.298
	AYCE_7	-0.001	0.025	0.956
	AYCE_8	0.049	0.029	0.091
	AYCE_9	0.004	0.020	0.836
	AYCE_10	0.019	0.020	0.328
	AYCE_11	0.066	0.034	0.052
	AYCE_13	0.118	0.034	0.001
	AYCE_16	0.000	0.029	0.996
	AYCE_17	0.045	0.030	0.140
	AYCE_18	-0.027	0.029	0.345
	AYCE_19	-0.029	0.023	0.204
	AYCE_20	-0.031	0.033	0.356
	MBQ_3	-0.015	0.024	0.513
	MBQ_6	-0.044	0.032	0.176
	MBQ_7	-0.176	0.051	0.001
	MBQ_8	-0.140	0.051	0.007
	MBQ_9	0.067	0.034	0.046
	MBQ_10	-0.011	0.027	0.685
	MBQ_11	0.085	0.055	0.126
	MBQ_16	-0.058	0.036	0.109
	MBQ_17	-0.012	0.028	0.673
	MBQ_20	0.049	0.040	0.214
	MBQ_26	-0.037	0.040	0.349
	MBQ_27	0.001	0.026	0.972
	MBQ_30	0.076	0.045	0.095
	MBQ_32	0.033	0.040	0.406
	MBQ_33	0.014	0.028	0.615

	FSQ_2	-0.008	0.019	0.695
	FSQ_6	-0.008	0.019	0.666
	FSQ_7	0.100	0.030	0.001
	FSQ_10	-0.058	0.023	0.011
	FSQ_15	0.012	0.024	0.632
	FSQ_17	0.799	0.019	0.000
	FSQ_18R	0.137	0.063	0.029
	FSQ_22R	0.001	0.022	0.965
	FSQ_24	0.019	0.023	0.400
	FSQ_25	0.715	0.022	0.000
	FSQ_26R	0.125	0.062	0.043
	FSQ_29	0.873	0.017	0.000
	FSQ_31	0.085	0.034	0.013
	FSQ_33	0.690	0.023	0.000
	FSQ_36	0.017	0.023	0.456
	FSQ_39	0.060	0.030	0.049
F7	AYCE_1	-0.160	0.043	0.000
	AYCE_2	0.005	0.029	0.867
	AYCE_3	-0.019	0.027	0.489
	AYCE_4	-0.149	0.037	0.000
	AYCE_5	-0.223	0.043	0.000
	AYCE_6	-0.138	0.048	0.004
	AYCE_7	0.014	0.027	0.609
	AYCE_8	-0.061	0.029	0.033
	AYCE_9	0.129	0.035	0.000
	AYCE_10	-0.030	0.021	0.144
	AYCE_11	0.051	0.036	0.160
	AYCE_13	-0.043	0.032	0.184
	AYCE_16	0.027	0.033	0.410
	AYCE_17	-0.166	0.043	0.000
	AYCE_18	0.040	0.033	0.218
	AYCE_19	0.052	0.027	0.060
	AYCE_20	-0.113	0.057	0.046
	MBQ_3	0.119	0.068	0.079
	MBQ_6	0.020	0.035	0.578
	MBQ_7	0.017	0.027	0.517
	MBQ_8	0.005	0.022	0.821
	MBQ_9	0.028	0.029	0.336
	MBQ_10	0.068	0.040	0.090
	MBQ_11	-0.013	0.040	0.751
	MBQ_16	-0.026	0.030	0.399
	MBQ_17	0.036	0.036	0.318
	MBQ_20	-0.094	0.048	0.049
	MBQ_26	-0.118	0.055	0.032
	MBQ_27	-0.085	0.045	0.060
	MBQ_30	-0.068	0.057	0.229

	MBQ_32	-0.183	0.076	0.015
	MBQ_33	0.097	0.053	0.067
	FSQ_2	0.038	0.022	0.077
	FSQ_6	0.057	0.026	0.030
	FSQ_7	0.597	0.029	0.000
	FSQ_10	0.096	0.029	0.001
	FSQ_15	0.808	0.025	0.000
	FSQ_17	0.049	0.031	0.119
	FSQ_18R	-0.002	0.027	0.940
	FSQ_22R	0.143	0.041	0.001
	FSQ_24	0.119	0.156	0.445
	FSQ_25	0.001	0.028	0.974
	FSQ_26R	-0.094	0.041	0.024
	FSQ_29	0.082	0.032	0.011
	FSQ_31	0.642	0.029	0.000
	FSQ_33	-0.012	0.027	0.664
	FSQ_36	0.157	0.133	0.237
	FSQ_39	0.626	0.032	0.000
F8	AYCE_1	0.016	0.031	0.620
	AYCE_2	-0.201	0.039	0.000
	AYCE_3	-0.043	0.034	0.215
	AYCE_4	0.003	0.023	0.881
	AYCE_5	0.021	0.024	0.397
	AYCE_6	-0.058	0.032	0.074
	AYCE_7	-0.155	0.035	0.000
	AYCE_8	0.063	0.031	0.040
	AYCE_9	-0.013	0.020	0.521
	AYCE_10	0.001	0.021	0.964
	AYCE_11	-0.024	0.033	0.472
	AYCE_13	0.055	0.034	0.102
	AYCE_16	-0.031	0.029	0.281
	AYCE_17	0.010	0.030	0.744
	AYCE_18	0.107	0.033	0.001
	AYCE_19	-0.062	0.031	0.046
	AYCE_20	-0.029	0.034	0.399
	MBQ_3	0.011	0.030	0.726
	MBQ_6	0.065	0.033	0.047
	MBQ_7	0.346	0.039	0.000
	MBQ_8	0.367	0.044	0.000
	MBQ_9	-0.027	0.033	0.412
	MBQ_10	-0.085	0.042	0.041
	MBQ_11	-0.144	0.065	0.026
	MBQ_16	0.025	0.033	0.446
	MBQ_17	-0.036	0.034	0.289
	MBQ_20	0.044	0.038	0.255
	MBQ_26	0.002	0.039	0.960

	MBQ_27	-0.206	0.041	0.000
	MBQ_30	-0.028	0.040	0.486
	MBQ_32	-0.041	0.045	0.365
	MBQ_33	0.008	0.032	0.794
	FSQ_2	-0.033	0.023	0.148
	FSQ_6	-0.008	0.017	0.656
	FSQ_7	0.025	0.029	0.380
	FSQ_10	-0.113	0.028	0.000
	FSQ_15	-0.010	0.025	0.685
	FSQ_17	0.030	0.023	0.202
	FSQ_18R	0.777	0.031	0.000
	FSQ_22R	0.436	0.036	0.000
	FSQ_24	-0.015	0.021	0.465
	FSQ_25	0.007	0.024	0.776
	FSQ_26R	0.771	0.033	0.000
	FSQ_29	0.033	0.021	0.120
	FSQ_31	-0.009	0.027	0.750
	FSQ_33	-0.045	0.029	0.123
	FSQ_36	-0.001	0.024	0.980
	FSQ_39	-0.016	0.029	0.580
F9	AYCE_1	0.013	0.027	0.628
	AYCE_2	-0.033	0.034	0.331
	AYCE_3	0.073	0.031	0.020
	AYCE_4	-0.021	0.024	0.390
	AYCE_5	-0.019	0.024	0.428
	AYCE_6	0.098	0.035	0.005
	AYCE_7	-0.027	0.030	0.373
	AYCE_8	0.033	0.024	0.176
	AYCE_9	-0.010	0.021	0.649
	AYCE_10	0.014	0.020	0.475
	AYCE_11	-0.006	0.030	0.838
	AYCE_13	0.003	0.025	0.888
	AYCE_16	0.102	0.044	0.020
	AYCE_17	-0.011	0.029	0.706
	AYCE_18	0.029	0.031	0.365
	AYCE_19	-0.024	0.029	0.391
	AYCE_20	0.196	0.040	0.000
	MBQ_3	-0.087	0.054	0.110
	MBQ_6	-0.035	0.033	0.283
	MBQ_7	0.017	0.019	0.375
	MBQ_8	-0.054	0.026	0.038
	MBQ_9	-0.310	0.040	0.000
	MBQ_10	-0.298	0.046	0.000
	MBQ_11	0.008	0.042	0.851
	MBQ_16	0.299	0.055	0.000
	MBQ_17	0.234	0.055	0.000

	MBQ_20	0.056	0.039	0.158
	MBQ_26	0.094	0.048	0.049
	MBQ_27	0.007	0.028	0.797
	MBQ_30	0.157	0.069	0.022
	MBQ_32	0.241	0.062	0.000
	MBQ_33	-0.024	0.040	0.546
	FSQ_2	0.058	0.026	0.029
	FSQ_6	0.030	0.018	0.105
	FSQ_7	0.038	0.031	0.222
	FSQ_10	-0.057	0.021	0.007
	FSQ_15	0.016	0.034	0.635
	FSQ_17	-0.043	0.021	0.042
	FSQ_18R	-0.010	0.021	0.643
	FSQ_22R	-0.042	0.029	0.143
	FSQ_24	0.837	0.037	0.000
	FSQ_25	0.148	0.037	0.000
	FSQ_26R	0.019	0.022	0.390
	FSQ_29	-0.025	0.019	0.194
	FSQ_31	-0.012	0.031	0.708
	FSQ_33	0.115	0.035	0.001
	FSQ_36	0.722	0.034	0.000
	FSQ_39	0.107	0.042	0.011
Internalizing Symptoms	ANX_1	0.667	0.030	0.000
	ANX_2	0.843	0.023	0.000
	ANX_3	0.823	0.023	0.000
	ANX_4	0.770	0.023	0.000
	DEP_1	0.803	0.022	0.000
	DEP_2	0.911	0.017	0.000
	DEP_3	0.873	0.022	0.000
	DEP_4	0.893	0.017	0.000
Stress	SNRS_1	0.833	0.026	0.000
	SNRS_2	0.871	0.023	0.000
	SNRS_3	0.763	0.030	0.000
	SNRS_4	0.797	0.029	0.000

Table 17

Full standardized correlation matrix between latent variables, including feeding related items, parent stress and internalizing items

	Stress	Negative Feeding	Positive Family	Aggressive Behavior	Avoidant Behavior	Child Control	Consistent Meal	Child Intuition	Few Distractions	Parent Control
Internalize	0.552**	0.148**	-0.168**	0.236**	0.190**	0.093*	-0.123**	-0.076*	-0.193**	0.035
Stress		0.207**	-0.094*	0.118*	0.240**	0.067	-0.127**	0.011	-0.107*	0.017
Negative Feeding			-0.340**	0.340**	0.430**	0.061	-0.114*	-0.182**	-0.104	-0.080
Positive Family				-0.305**	-0.286**	0.042	0.093*	0.278**	0.223**	0.007
Aggressive Behavior					0.332**	0.089*	0.071	-0.204**	-0.331**	0.296**
Avoidant Behavior						-0.017	-0.121*	-0.162*	-0.166**	0.077
Child Control							-0.117**	0.300**	-0.263**	0.008
Consistent Meal								0.199**	0.114	0.178**
Child Intuition									-0.026	-0.025
Few Distractions										-0.169**
Parent Control										

**p<.001

*p<.05

Table 18

Predictors of parent stress and internalizing symptoms using MFQ

	Internalizing Symptoms			**Stress**		
Construct	Estimate	S.E.	p-value	Estimate	S.E.	p-value
Negative parent-child feeding interactions	0.007	0.044	0.878	**0.125**	**0.049**	**0.010**
Positive family mealtime interactions	-0.062	0.045	0.176	-0.001	0.040	0.984
Aggressive mealtime behaviors	**0.161**	**0.045**	**0.000**	0.024	0.050	0.635
Avoidant/distraction mealtime behaviors	**0.091**	**0.046**	**0.046**	**0.171**	**0.048**	**0.000**
Child control of eating	0.051	0.042	0.221	0.013	0.044	0.771
Consistent mealtime schedule	**-0.096**	**0.039**	**0.014**	**-0.109**	**0.042**	**0.009**
Parent perception of child intuitive eating	-0.009	0.042	0.824	0.084	0.046	0.067
Few distractions during mealtime	**-0.089**	**0.042**	**0.032**	-0.036	0.046	0.432
Parent control of child's eating	-0.017	0.039	0.670	0.022	0.042	0.598

Note. Bolded terms are significant predictors

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Appendix 1

Multidimensional Feeding Questionnaire

	Strongly Disagree 1	Disagree 2	Neither Agree nor Disagree 3	Agree 4	Strongly Agree 5
My child hates eating.					
I feel like a short order cook because I have to make special meals for my child.					
I feel that it is a struggle or fight to get my child to eat.					
My child refuses to eat.					
I worry that my child will not eat right unless closely supervised.					
My child is a picky eater.					
There are arguments between me and my child over eating.					
My child seems to have no appetite.					
My child has mealtime tantrums.					
My child refuses to eat a planned meal.					
I have to force my child to eat.					
Mealtimes are among the most pleasant in the day.					
The family looks forward to meals together.					
My child enjoys eating.					
Mealtime is a pleasant, family time.					
I get pleasure from watching my child eating well and enjoying their food.					
We have nice conversations during meals.					
I feed my child whenever s/he asks for food.					
I allow my child to eat whenever s/he is hungry.					
My child is allowed to eat and drink throughout the day, whenever s/he asks.					
We eat meals at the same time every day.					
My child's meals and snacks are scheduled each day.					
Mealtimes occur at the same time each day.					
Snacks are offered at the same time every day.					
My child knows instinctively how much to eat.					

My child knows when s/he is full.			
My child knows when it is time to stop eating by paying attention to her/his body.			
My child knows when s/he is hungry.			
My child frequently eats meals and snacks in front of the TV.			
My child often has toys at the table during meals.			
My child frequently eats meals and snacks in the living room or family room.			
I am in control of my child's eating.			
I feel that I am in control of my child's eating.			

	Never 1	Sometimes 3	Always 5
Crying			
Screaming			
Hitting others or objects			
Kicking others or objects			
Spitting at a person			
Flailing arms/legs			
Choking or coughing on food or liquid			
Biting others			
Vomiting			
Leaving the table			
Refusing to come to the table			
Talking to keep from eating			
Deal making (negotiation)			
Playing with toys rather than eating			
Not sitting in chair			