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Meals in our Household: reliability and initial validation of a questionnaire to assess child mealtime behaviors and family mealtime environments

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Abstract

Mealtimes in families with young children are increasingly of interest to nutrition and public health researchers, yet assessment tools are limited. Meals in our Household is a new parent-report questionnaire that measures six domains: 1) structure of family meals, 2) problematic child mealtime behaviors, 3) use of food as reward, 4) parental concern about child diet, 5) spousal stress related to child's mealtime behavior, and 6) influence of child's food preferences on what other family members eat. Reliability and initial face, construct, and discriminant validity of the questionnaire were evaluated between January 2007 and December 2009 in two cross-sectional studies comprising a total of 305 parents of three- to eleven-year-old children (including 53 children with autism spectrum disorders). Internal consistencies (Cronbach's alpha) for the six domains averaged 0.77 across both studies. Test-retest reliability, assessed among a subsample of 44 parents who repeated the questionnaire after between 10 and 30 days, was excellent (Spearman correlations for the domain scores between two administrations ranged from 0.80 to 0.95). Initial construct validity of the instrument was supported by observation of hypothesized interrelationships between domain scores which were of the same direction and similar magnitude in both studies. Consistent with discriminant validity, children with autism spectrum disorders had significantly higher domain scores for problematic child mealtime behaviors, use of food as

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reward, parental concern about child diet, and spousal stress, compared to typically developing children. Meals in our Household may be a useful tool for researchers studying family mealtime environments and children's mealtime behaviors.

Keywords

Family mealtimes; child behavior; questionnaire development

Introduction

Family mealtime routines, and food-related parenting practices and concerns are increasingly appreciated as potential factors in the development of child eating habits, family functioning and obesity (1-3). Growing evidence indicates that family meals are associated with many positive outcomes for youth. Adolescents who frequently eat meals with their family have more healthful diets (4-6), lower prevalence of obesity (7), better psychosocial health (8), and particularly among girls, fewer disordered eating behaviors (9-10). Positive benefits of family meals are also presumed for younger children, but have received less study. Mealtime behavior is one aspect of family meals that may be particularly important for families with young children. The health benefits of family meals may be mediated by greater family cohesion and communication (3, 11), and assessment tools that evaluate multiple domains of children's mealtime experiences, their behavior during mealtimes, and its impact on the family are needed to facilitate such research.

Among existing parent-report questionnaires, none comprehensively measure children's mealtime behavior and its effect on the family in preschool and school-age children. Many instruments focus on parental concerns regarding children's weight status, parenting strategies and practices toward child feeding, or child eating styles (12-18). Fewer questionnaires assess children's behavior at meals (19-22), or family mealtime environments (23-27). The Mealtime Behavior Questionnaire measures the frequency during the past week of mealtime behavior problems among two- to six-year-old children (19). The Children's Eating Behavior Inventory (21) and the Behavioral Pediatric Feeding Assessment Scale (22) have been used to assess feeding problems in children with special health care needs (28-30). However, these questionnaires (21-22), as well as one designed for children with autism (31), have less applicability to typically developing children.

Results of test-retest reliability, internal consistency, face, construct, and discriminant validity for a new parent-report questionnaire, titled Meals in our Household, are presented in this report. Meals in our Household measures the domains of family meal structure and environment, children's mealtime behavior and its impact on the family, parental concerns about children's diet, and use of food as a reward. The questionnaire was designed for families with children between the ages of three and eleven years, across sociodemographic strata and irrespective of a child's developmental disability status; it was evaluated in two populations differing in their sociodemographic characteristics and child disability status.

Methods

Meals in our Household: development

The Meals in our Household questionnaire was developed to characterize mealtime behaviors and environments of three- to eleven-year-old children across six domains: 1) “Structure of Family Meals” assesses the frequency the child is exposed to traditionally structured family meals; 2) “Problematic Child Mealtime Behaviors” assesses the frequency of problematic behaviors the child may exhibit at mealtimes and the extent to which the

parent considers them problematic; 3) “Use of Food as a Reward” assesses how frequently the parent uses food to reward or manage the child's behavior; 4) “Parental Concern about Child Diet” measures how concerned the parent is about what the child does or does not eat; 5) “Spousal Stress Related to Child's Mealtime Behavior” assesses the extent to which the parent believes the child's mealtime behavior negatively impacts their spouse or partner, and/or is a source of stress in their relationship; 6) “Influence of Child's Food Preferences” measures how much the child's food preferences impact what other family members eat.

Items (see Table 1) were developed based on review of the literature, discussions with an interdisciplinary team of researchers and clinicians, including dietitians, epidemiologists, clinical social workers, and occupational and physical therapists, as well as examination of existing instruments (12-14, 21-22, 25, 32). The Children's Eating Behavior Inventory (21) and the Behavioral Pediatric Feeding Assessment Scale (22) provide parents the opportunity to report the frequency with which their child displays behaviors that could be considered problematic, and asks them to indicate whether or not the behavior actually is problematic for the family. This idea was expanded upon in Meals in our Household by asking parents to report how much of a problem the behavior was for them (i.e., not a problem, small problem, medium problem, large problem). The Children's Eating Behavior Inventory (21) also influenced creation of the domain of “Spousal Stress Related to Child's Mealtime Behavior”. The “Use of Food as Reward” domain was influenced by items from the Child Feeding Questionnaire (14) and the Comprehensive Feeding Practices Questionnaire (17).

Meals in our Household was designed as a self-report questionnaire to be completed by the parent/guardian of a child between the ages of 3.0 and 11.9 years. The questionnaire design and wording of items and instructions were constructed with the goal of minimizing complexity, and were refined after pre-testing with a convenience sample of ten parents of children in the target age range. The process was iterative and served to identify and remediate problems associated with question wording and design. Following revision, the interdisciplinary research team reviewed the instrument for face validity. Table 1 presents the items, response options, and instructions for each section of the questionnaire.

Participants

Reliability and initial validity of the questionnaire were evaluated in two distinct study samples that differed relative to sociodemographic characteristics and inclusion of children with developmental disabilities. In both samples, participants were parents of three-to eleven-year-old children. Throughout this report these two samples are referred to as CHAMPS (Children's Activity and Meal Patterns Study) and the Ohio study.

CHAMPS was conducted between January 2007 and December 2008 at the University of Massachusetts Medical School, Eunice Kennedy Shriver Center in Waltham, Massachusetts (33). Participants were parents of children with autism spectrum disorders (n=53) and parents of typically developing children (n=58). Autism is more prevalent among males (34), and typically developing children in CHAMPS were recruited to have a similar gender distribution. Recruitment and exclusion criteria for CHAMPS have been described (33). Parents completed Meals in our Household while their child completed other aspects of the CHAMPS protocol. The study was approved by the University of Massachusetts Medical School Institutional Review Board, and parents provided written informed consent. For their participation, parents received a small monetary incentive and children received a bookstore gift certificate.

The Ohio study was conducted between July 2008 and December 2009 in two pediatric primary care clinics associated with a large children's hospital in central Ohio. These clinics were located in low-income neighborhoods. Adults accompanying children to the clinic

were approached in the waiting room by a trained research assistant and asked to participate if they had an appropriately aged child (whether or not he/she was present). Other inclusion criteria included being able to read the questionnaire in English. In total, 194 participants completed the questionnaire. The survey was anonymous and participants received a grocery store gift card as an incentive. The study was deemed exempt by the Nationwide Children's Hospital Institutional Review Board and parents provided informed consent verbally; the Institutional Review Board granted a waiver for verbal rather than written consent.

Analyses

Analyses were conducted using SAS (version 9.2, 2009, SAS Institute Inc, Cary, NC). Demographic characteristics of participants from the two studies were tabulated. For each study, the distribution of scores in each domain was assessed and the median, interquartile range, minimum and maximum scale scores reported. Cronbach's coefficient alpha, a measure of the variance attributable to the scale relative to the overall variance (35), was calculated to determine the internal consistency of items within each domain and the standardized alpha reported. To assess test-retest reliability, parents in CHAMPS were invited to return to the research center to repeat the questionnaire approximately two weeks after initial administration. Forty-four parents self-selected to participate; their responses to the questionnaire at the first administration were compared with their responses on the repeat administration using Spearman correlations. It was not possible to assess test-retest reliability in the Ohio study because the questionnaire was anonymous. To assess construct validity, Spearman correlations between the domain scores within each study were assessed. Spearman correlations rather than Pearson correlations were used because the domain scores were ordinal and not normally distributed. To provide evidence of discriminant validity, the Kolmogorov-Smirnov test (a non-parametric t-test) was used to compare the distribution of scores on each domain for typically developing children to those of children with autism spectrum disorders in CHAMPS.

Results & Discussion

Meals in our Household was evaluated in two studies with a total of 305 participants. The questionnaire is written at a fifth grade level (Flesch-Kincaid reading grade level = 4.9) (36). Table 2 presents sociodemographic characteristics of participants in CHAMPS and the Ohio study. By design, participants in these two evaluation samples differed relative to socioeconomic status, race/ethnicity, geographic location, and child developmental disability status. A majority of parents in CHAMPS were well-educated, married, and white. Participants in the Ohio study had less formal education, fewer were married, and more were of non-white race/ethnicity. In both samples, Meals in our Household was well-accepted and most participants completed the questionnaire within ten minutes.

Variability in domain scores within each sample was evident (Table 2, bottom). The range and interquartile range of scores were wide. The higher median domain scores and larger interquartile range observed in CHAMPS as compared to the Ohio study for the domains of “Problematic Child Mealtime Behaviors”, “Parental Concern about Child Diet”, and “Spousal Stress” are consistent with expectations for higher scores in these domains for children with autism spectrum disorders.

Reliability

To assess internal consistency, the correlation of each item with the total score of the domain was assessed. For the “Structure of Family Meals” domain, five items were deleted because they were poorly correlated with the scale (Cronbach's alpha for scale including five poorly fitting items was 0.36 in CHAMPS and 0.59 in the Ohio study). Table 1 presents the

final items included in the six domains. With exclusion of the aforementioned items, Cronbach's alpha for the “Structure of Family Meals” domain was 0.66 in CHAMPS (n=110) and 0.73 in the Ohio study (n=179). For the “Problematic Child Mealtime Behaviors” domain, alpha was 0.93 in CHAMPS (n=110) and 0.91 in the Ohio study (n=173). For “Parental Concern about Child Diet”, alpha was 0.90 in CHAMPS (n=111) and 0.93 in the Ohio study (n=186). For “Use of Food as a Reward”, alpha was 0.81 in CHAMPS (n=111) and 0.76 in the Ohio study (n=188). The consistency of these estimates in the two studies provides preliminary evidence that the items comprising the domains were similarly interpreted by participants across socioeconomic contexts.

Participants who reported that they lived with a spouse or partner were eligible to complete the “Spousal Stress Related to Child's Mealtime Behavior” domain. In CHAMPS, 90% of participants responded to these items, as did 61% of participants in the Ohio study. Cronbach's alpha for this domain was 0.87 in CHAMPS (n=100) and 0.73 in the Ohio study (n=118). The lowest internal consistency was for the domain of “Influence of Child's Food Preferences”. Because participants who had only one child, or did not report having a spouse/partner were not eligible, this domain could be calculated for fewer participants (73% of participants in CHAMPS and 48% of participants in the Ohio study). Cronbach's alpha was acceptable in CHAMPS at 0.65 (n=81), but was low in the Ohio study at 0.39 (n=93). The domain of “Influence of Child's Food Preferences” was included in Meals in our Household because unusual and highly selective eating patterns are often observed in children with autism spectrum disorders (33) and understanding the impact of these eating patterns on the family was of interest. However, of the six domains in Meals in our Household, this one performed least well, particularly in the Ohio study. This may be a result of the limited number of items in this domain. The internal consistency was poor in the Ohio study, but adequate in CHAMPS - both for children with an autism spectrum disorder (n=43, alpha = 0.63) and for typically developing children (n=38, alpha = 0.63). Thus it could not be determined why this domain had a low internal consistency in the Ohio study, but particularly in populations in which many family configurations are non-traditional, the “Influence” domain should be interpreted cautiously. It may be useful to broaden this domain in future work to include the child's influence on other aspects of the family eating environment.

After an interval of between 10 and 30 days (median: 19.5 days), 44 parents from CHAMPS (n=31 with a typically developing child, n=13 with a child with an autism spectrum disorder) repeated Meals in our Household. Domain scores from the first and second administrations were highly correlated. Overall, Spearman correlations ranged from r=0.80 to r=0.95 and averaged r=0.88. Test-retest reliabilities were similar for parents of typically developing children (Spearman correlations ranged from 0.72 to 0.94 with a mean of 0.84) and parents of children with autism spectrum disorders (range: 0.82 to 0.98; mean:0.91). Thus, test-retest reliabilities of the six domains were excellent irrespective of whether or not the child had an autism spectrum disorder.

Validity

Construct validity is supported by the observed correlations among the domains in each study (Table 3). High scores on the “Structure of Family Meals” domain were negatively correlated with problematic child mealtime behaviors, and parental concern about child diet. This was true in both studies and is consistent with evidence linking the frequency and quality of family meals to many positive child and family outcomes (3, 5, 8, 37-38). Whether having family meals has a causal influence on these domains cannot be determined from these data, but could be addressed in future studies using the questionnaire. The “Structure of Family Meals” domain measures the extent to which children are exposed to what might be considered traditional family-style meals (i.e., meals prepared at home, eaten

with family, at a table, without television). Most epidemiologic studies of family meals have focused upon family meal frequency, but some have assessed mealtime environments more comprehensively using multiple questions (26, 37). Observational coding systems have also been developed (39-43), but these methods are often impractical for larger studies because they are time consuming and require training to administer and code accurately.

High levels of “Problematic Child Mealtime Behaviors” were positively correlated with the domains of “Parental Concern”, “Food as a Reward”, “Spousal Stress”, and “Influence” (Table 3). Further evidence for construct validity is that the magnitudes of the correlations between domains within the two studies were similar and the direction of the association was always consistent. High parental concern about children's diet was similarly related in both studies to the domains of “Use of Food as Reward” and “Spousal Stress”. Future research could determine the extent to which parental concern about children's diets influences their use of food as a reward.

Meals in our Household domain scores for children with autism spectrum disorders differed from typically developing children in CHAMPS, and provide evidence of discriminant validity. Children with autism spectrum disorders had significantly higher median scores in the domains of “Problematic Child Mealtime Behavior” (32 versus 16), “Parental Concern about Child Diet” (29 versus 6), “Use of Food as a Reward” (9 versus 5), and “Spousal Stress” (11 versus 6). The influence of the child's preferences on what other family members ate was higher among children with autism spectrum disorders (7 versus 4.5), but the difference did not reach statistical significance. The median score for the “Structure of Family Meals” domain was statistically significantly higher for typically developing children (30 versus 27) but the magnitude of the difference was small. As expected, typically developing children scored substantially lower on the domain of “Problematic Child Mealtime Behaviors” than did children with autism spectrum disorders, but it is important to note that children's scores in this domain showed considerable variability in the Ohio study as well as among typically developing children in CHAMPS.

Meals in our Household was designed for researchers interested in understanding mealtimes in families with preschool and school-age children living in the United States irrespective of children's developmental disability status. However, it is important to recognize the limitations of the questionnaire. It was not designed to assess feeding or eating problems and does not assess eating disorders. Nor is it appropriate for infants and toddlers. Evaluation of the questionnaire was conducted in two independent study populations but neither was representative of a defined target population. If responses to Meals in our Household systematically differed for parents who volunteered to participate in these studies, then generalizability could be limited. In addition, the domains assessed may not be relevant outside the United States, nor in some cultural contexts. A further limitation of the questionnaire is that it is subject to social desirability bias and it is not known whether participants differed in their interpretation or understanding of the questions.

The Meals in our Household questionnaire assesses both objective and subjective aspects of family mealtimes. The domains assessed in Meals in our Household, while related to the experience and behavior of the child, are more accurately a reflection of the perceptions and expectations of the parent. This is one aspect, in addition to age range, that differentiates Meals in our Household from the Mealtime Behavior Questionnaire (19).

Conclusions

The Meals in our Household questionnaire provides researchers interested in family meals with a tool to assess children's mealtime environments and behavior, and parents' perception

of how children's mealtime behavior and diet influence the family. This parent-report instrument has been preliminarily evaluated in two distinct study populations that vary relative to socioeconomic status, race/ethnicity, geographic location, and child developmental disability status. Further use and evaluation of the questionnaire is needed, but these promising findings of reliability and initial validity suggest that researchers interested in understanding children's mealtime behaviors and environments in the context of family may find Meals in our Household useful.

For nutrition professionals who counsel families, the questionnaire could help to facilitate discussion with parents about their children's mealtime behavior, their concerns about their child's diet, and their use of food to reward children or manage problematic behavior. Registered dietitians and others who interact with families may find that the domains assessed in Meals in our Household are of interest to their clients. Although the questionnaire has not been evaluated in a clinical context, nutrition professionals may wish to incorporate items or concepts from it into their own assessment strategies.

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Table 1
Meals in our Household Questionnaire - Items, Instructions, & Scoring

Domain	**Structure of Family Meals**
Instruction	Mealtimes are different for different families. We are interested in what meals are like in your household. For each of the following items, please choose how often the statement describes mealtimes with your child and/or in your household.
Response options	Never (0), Rarely (1), Sometimes (2), Often (3), Always or Almost Always (4) *R=reverse coded*
Items	1 My child eats meals with myself or other family members. 2R The television is on in the same room when my child is eating meals. 3 Our family eats an evening meal at a regular time. 4R Meals in our household are rushed. 5 We eat meals in the kitchen or dining room. 6R we eat meals in the car. 7R Everyone in our household eats something different at meals. 8 At meals, my child eats the same food as everyone else. 9 Someone in our household cooks meals. 10 We say grace or have a ritual at the start of meals.
Domain	**Problematic Child Mealtime Behaviors**
Instruction	Children's behavior at mealtimes can be an issue for parents and in families. Sometimes children behave well at meals and sometimes they could behave better. Parents also have different expectations for children's behavior at meals. For each of the following statements, please choose how often the statement describes your child's behavior during the **past 3 months**, and for each statement choose how much of a problem that aspect of your child's behavior is for you. Please note that a behavior that occurs *often* may be a *large problem* in one family and may be *not a problem* or a *small problem* in another family. Likewise, a behavior that occurs *rarely* may be a *large problem* or may be *not a problem*.
Response options	i: Never (0), Rarely (1), Sometimes (2), Often (3), Very Often (4) j: Not a problem (0), Small problem (1), Medium problem (2), Large problem (3)
Items	1i My child refuses to come when it is time to eat. 1j How much of a problem is it that your child refuses to come when it is time? 2i My child has tantrums or acts out during meals. 2j How much of a problem is it that your child has tantrums during meals? 3i My child complains about what is served. 3j How much of a problem is it that your child complains about what is served? 4i I argue with my child about what he/she eats. 4j How much of a problem is arguing with your child about what he/she eats? 5i My child seeks a lot of attention during meals. 5j How much of a problem is it that your child seeks attention during meals? 6i My child does not stay seated during meals. 6j How much of a problem is it that your child doesn't stay seated during meals? 7i My child squirms or fidgets while eating. 7j How much of a problem is it that your child squirms or fidgets while eating?8i My child has poor table manners. 8j How much of a problem is it that your child has poor table manners? 9i My child overstuffs his/her mouth with food. 9j How much of a problem is it that your child overstuffs his/her mouth?

Domain	**Structure of Family Meals**
	10i My child refuses to eat what is served.
	10j How much of a problem is it that your child refuses to eat what is served?
Domain	**Use of Food as a Reward**
Instruction	Parents use many ways to reward and encourage children. For each of the following, please tell us, by checking one box per row, how often the statement describes you and/or your child.
Response Options	Never (0), Rarely (1), Sometimes (2), Often (3), Very Often (4)
Items	**1** I give my child food to keep him/her quiet when shopping or traveling.
	2 I give my child food to reward him/her for good behavior.
	3 I withhold a food my child likes as a consequence for bad behavior.
	4 My child expects to be given a favorite food as a reward.
	5 I give my child a special food to celebrate an achievement.
	6 I give my child food to persuade him/her to do something he/she does not really want to do.
Domain	**Parental Concern about Child's Diet**
Instruction	Some parents have concerns about what their child eats and other parents have few or no concerns about what their child eats. For each of the following, please rate how concerned *you* are.
Response Options	Not at all concerned (0), A little concerned (1), Somewhat concerned (2), Quite concerned (3), Very concerned (4), Extremely concerned (5)
Items	**1** Child is not eating enough.
	2 Child is eating too much.
	3 Child eats a lot of junk food.
	4 Child eats only a few types of food.
	5 Child is not getting good nutrition.
	6 Child has poor eating habits.
	7 Child will not try new foods.
	8 Child is not flexible about what he/she eats.
	9 Child has food allergies or intolerances.
	10 Child will eat foods I don't want him/her to.
	11 Child eats too much fat.
	12 Child eats too much sugar.
	13 Child does not eat breakfast.
	14 Child does not eat vegetables.
	15 Child does not eat fruits.
	16 Child does not drink milk.
	17 Child does not eat meat.
Domain	**Spousal Stress Related to Child's Mealtime Behaviors**
Instruction	If you have a spouse or partner who lives with you, please tell us how much you agree or disagree with the following statements.

Domain	Structure of Family Meals	
Response options	Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), Strongly Agree (5)	
Items	**1**	My child's behavior at meals bothers my spouse/partner.
	2	My spouse/partner does not enjoy eating with my child.
	3	My child's mealtime behavior is a source of stress in my relationship with my spouse/partner.
	4	My spouse/partner and I have different expectations about my child's mealtime behavior.
Domain	**Influence of Child's Food Preferences on what other Family Members Eat**	
Response options	**i:** Never (0), Rarely (1), Sometimes (2), Often (3), Always or Almost Always (4) **j:** Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), Strongly Agree (5)	
Items	1i	My child's food preferences influence what I, myself, eat.
	2j[a]	My child's food preferences influence what my spouse/partner eats.
	3j[b]	My child's food preferences influence what other children in our household eat.

[a]Assessed if living with a spouse/partner.

[b]Assessed if more than one child in household.

Table 2

Sociodemographic characteristics of participants in two evaluation studies of the Meals in our Household questionnaire and distribution of Meals in our Household domain scores in these studies

	CHAMPS[a] (n=111)		Ohio Study[b] (n=194)	
Child's age at last birthday	**n**	**Percent**	**n**	**percent**
3 – 5 years	50	45	94	48
6 – 8 years	38	34	63	32
9 – 11 years	23	21	37[c]	19
Child's gender				
Male	89	80	91	47
Female	22	20	102[d]	53
Child diagnosed with an autism spectrum disorder				
Yes	53	48	NA[e]	
No	59	52	NA	
Child's racial/ethnic group				
Non-Hispanic white	88	79	44	23
Non-Hispanic black	5	5	121	62
Hispanic	6	5	9	5
Other	12	11	20	10
Mother's highest level of education				
<High school	0	0	13	7
High school degree	5	5	81	42
Some college	25	23	82	42
College graduate	81	73	12	6
Don't know/missing	0	0	6	3
Father's highest level of education				
<High school	2	2	12	6
High school degree	16	14	86	44
Some college	25	23	56	29
College graduate	67	60	14	7
Don't know/missing	1	1	26	13

	CHAMPS[a] (n=111)				Ohio Study[b] (n=194)			
Marital status								
Married/living with partner	98	88			77	40		
Never Married	7	6			79	41		
Divorced/separated/widowed	6	5			36[d]	19		
Geographic location	Massachusetts				Central Ohio			
Time period of data collection	Jan 2007 – Dec 2008				July 2008 – Dec 2009			
Meals in our Household domain scores	**Median**	**IQR**	**Min**	**Max**	**Median**	**IQR**	**Min**	**Max**
Structure of Family Meals	28.0	6.0	17	39	31.0	7.0	16	40
Problematic Child Mealtime Behavior	23.5	21.0	1	62	12.0	14.0	0	46
Parental Concern about Child Diet	16.0	25.0	0	55	5.0	14.0	0	76
Use of Food as a Reward	7.0	6.0	0	20	5.0	7.0	0	16
Spousal Stress	8.0	6.5	4	20	4.0	4.0	4	15
Influence of Child's Food Preferences	6.0	6.0	2	12	5.0	3.0	2	12

[a] Childrens's Eating and Meal Patterns Study (CHAMPS).

[b] Conducted in pediatric clinic waiting rooms in Central Ohio.

[c] Percentages may not total due to rounding.

[d] In the Ohio study, data were missing for child gender (n=1) and marital status (n=2).

[e] Autism spectrum disorders were not assessed in the Ohio study, but it can be assumed that few, if any, children would meet diagnostic criteria for these disorders.

Table 3

Evidence of construct validity: Spearman correlations among Meals in our Household domain scores in two studies

		CHAMPS[a]					
	Domain	**Family Meals**	**Problem Behaviors**	**Parental Concern**	**Food as Reward**	**Spousal Stress**	**Child's influence**
Ohio Study[b]	Family Meals [c]		−0.38 ***	−0.52 ***	−0.19	−0.33 ***	−0.23
	Problem Behaviors [d]	−0.51 ***		0.67 ***	0.52 ***	0.66 ***	0 48 ***
	Parental Concern [e]	−0.29 ***	0.43 ***		0.46 ***	0.57 ***	0.49 ***
	Food as Reward [f]	−0.21 **	0.33 ***	0.33 ***		0.46 ***	0.35 **
	Spousal Stress [g]	−0.35 ***	0.51 ***	0.35 ***	0.31 ***		0.38 ***
	Child's influence [h]	−0.12	0.31 **	0.36 ***	0.24 *	0.47 ***	

P value for Spearman correlations:

* <0.05,

** <0.01,

*** <0.001.

[a] Children's Eating and Meal Patterns Study (n=111), assessed in Massachusetts January 2007- December 2008.

[b] Central Ohio Pediatric Clinic Waiting Rooms (n=194), assessed July 2008-December 2009.

[c] Structure of Family Meals

[d] Problematic Child Mealtime Behaviors

[e] Parental Concern About Child's Diet

[f] Use of Food as a Reward

[g] Spousal Stress Related to Child's Mealtime Behaviors

[h] Influence of Child's Food Preferences on what other Family Members Eat