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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 3- to 11-year-old children (including 53 children with autism spectrum disorders). Internal consistencies (Cronbach's α) for the six domains averaged .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 inter-relationships between domain scores that were of the same direction and similar magnitude in both studies. Consistent with discriminant validity, children with autism spectrum disorders had statistically significantly ($P<0.05$) higher domain scores for problematic child mealtime behaviors, use of food as reward, parental concern about child diet, and spousal stress, as 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.
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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 families 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 can 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-aged 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 2- to 6-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 3 and 11 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 3- to 11-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 his or her spouse or partner, and/or is a source of stress in their relationship; and 6) "Influence of Child's Food Preferences" measures how much the child's food preferences impact what other family members eat.

Items (see the Figure) were developed based on review of the literature, discussions with an interdisciplinary team of researchers and clinicians, including registered 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 with 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 is actually 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 (ie, 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 pretesting with a convenience sample of 10 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. The Figure 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 3- to 11-year-old children. Throughout this report these two samples are referred to as CHAMPS (the 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, MA (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 sex 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 or 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.

Statistical 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