



Mealtime behavior among parents and their young children with food allergy

Linda Jones Herbert, PhD^{*,†}; Priya Mehta, BA[†]; Hemant Sharma, MD, MHS^{*,†}

^{*} Division of Allergy and Immunology, Children's National Health System, Washington, DC

[†] The George Washington University, School of Medicine and Health Sciences, Washington, DC

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ABSTRACT

Background: Food allergies are increasingly prevalent in the pediatric population. Balancing allergen avoidance with the promotion of healthy eating behaviors can be challenging for families.

Objective: To characterize mealtime behaviors among parents of young children with food allergy.

Methods: Seventy-four parents of young children with food allergies (≤ 7 years of age) completed measures of mealtime behavior, perceptions of food allergy risk and severity, pediatric parenting stress, and food allergy-related quality of life. Mealtime behavior reports were compared with published data regarding typically developing children, young children with type 1 diabetes, and children with diagnosed feeding disorders (with or without related medical factors).

Results: Parents of young children with food allergies reported frequent mealtime concerns. Specifically, they reported significantly more mealtime behavioral concerns than typically developing peers, comparable mealtime behavioral concerns to young children with type 1 diabetes, and significantly fewer mealtime behavioral concerns than children with diagnosed feeding disorders. Parental mealtime concerns were positively correlated with other parent perceptions of food allergy, such as risk of allergen exposure, illness-related parenting stress, and food allergy-related quality of life.

Conclusion: Young children with food allergy and their parents are more likely to exhibit mealtime behavioral concerns than typically developing peers and their parents. Future research should investigate the effect of food allergies and maladaptive mealtime behaviors on children's nutrition to provide clinical guidelines for parents who may benefit from psychosocial and/or nutritional support.

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Introduction

Food allergies are increasingly prevalent in the pediatric population, affecting an estimated 8% of children in the United States.^{1,2} Food allergy diagnosis can be life-altering for the child and family; a key component of treatment is allergen avoidance to prevent potentially life-threatening allergic reactions.^{3–5} In early childhood, parents are often responsible for all aspects of food allergy management because children may be too young to understand the complexities of allergen avoidance and lack the skills necessary to implement food allergy management.⁶ Thus, food allergy management can be tedious, time-consuming, and stressful for parents.^{6–9} Further complicating food allergy management is that parents are responsible for supporting their child's normal developmental needs, such as promoting healthy eating habits, social

skills, and autonomy.^{10–12} Finding a balance between safe food allergy management and engagement in normal developmental tasks may be challenging.

A primary developmental task during early childhood is the establishment of healthy eating habits. Mealtime behavioral concerns are very common in healthy, typically developing children. Approximately 25% to 45% of parents of typically developing children report concerns with their child's feeding and mealtime behaviors, including disruptive child behaviors (eg, food refusal, food selectivity, getting up from the table).^{13–16} Many parents report anxiety about their child's mealtime behaviors and use maladaptive techniques to encourage their child to eat.¹⁷ These behaviors may have unintended consequences, such as more or less food intake or lack of a varied diet, which may then contribute to inadequate or excess weight gain and/or inappropriate nutritional intake.¹⁷ Furthermore, behavioral problems at mealtime may increase parental stress and decrease quality of life.

For families of children with chronic illnesses who require strict diet management, such as type 1 diabetes, mealtime behavioral

Reprints: Linda Jones Herbert, PhD, Division of Allergy and Immunology, Children's National Health System, 111 Michigan Ave NW, Washington, DC 20010; E-mail: ljherbert@childrensnational.org.

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concerns are even more common than among families of typically developing children.^{18,19} These concerns may have consequences for illness-specific physiologic and psychosocial outcomes.²⁰ For example, more frequent problematic child and parent mealtime behavior was significantly associated with poorer diabetes-related quality of life in a sample of parents of young children with type 1 diabetes.²¹ Given the need to focus on eating and food consumption similar to children with type 1 diabetes, children with food allergy may also be at greater risk for mealtime behavioral concerns than typically developing children. However, little is known about mealtime behavioral concerns among children with food allergy. Preliminary research indicates that food allergy patients may be overrepresented at feeding clinics compared with the general population,²² and feeding concerns are common among children diagnosed with cow's milk allergy, food protein–induced gastrointestinal allergies, and eosinophilic gastrointestinal disorders.^{23–25} However, no prior studies have examined mealtime concerns among children with a broader array of food allergies; therefore, it is unknown whether those concerns are increased compared with typically developing children or associated with increased parenting stress and/or poorer quality of life.

The aim of this study is to characterize mealtime concerns among parents of young children with food allergy. To accomplish this aim, we (1) describe mealtime behavioral concerns among a sample of parents of young children with food allergy, (2) compare the mealtime concerns of parents in our sample with published data from 3 other samples (children with type 1 diabetes, children with diagnosed feeding disorders, and typically developing children), and (3) investigate the association of parents' mealtime concerns with parenting stress and food allergy–related quality of life.

Methods

Procedure

This study was approved by the Children's National Health System's institutional review board. Participants were recruited during a 16-month period (March 2014 to June 2015). Primary caregivers of children 0 to 18 years old with at least one diagnosed food allergy (hereafter referred to as parents) completed an online clinical assessment of food allergy–related psychosocial functioning as part of routine clinical care. Practitioners identified their patients who were diagnosed with food allergies at clinic appointments. Food allergies were diagnosed by allergists via one of several methods: skin prick testing, IgE testing, oral food challenge, or clinical history. Within a week of their child's food allergy clinic appointment, parents received an e-mail asking them to complete a set of questionnaires about their child's food allergy and their psychosocial functioning. The e-mail also included a link to a REDCap survey,²⁶ an encrypted web-based application that is designed to support data capture for research studies. After completing questionnaires, parents reviewed an information page that indicated their deidentified responses would be included in a research database. Parents had the option to opt out of their inclusion in this database. Only research team members had access to the deidentified data that were entered into the research database. A waiver of documentation of consent was approved for this project. Participants did not receive incentives. Approximately 34% of all potential participants (N = 303) completed the survey.

Participants

A total of 103 parents who received clinical care at an urban Mid-Atlantic food allergy clinic in a pediatric medical center completed the clinical assessment. Of these, 74 (72%) parents met the inclusion criteria: child age between 9 months and 7 years

(to be consistent with the feeding measure guidelines), diagnosis of at least one IgE-mediated food allergy by an allergist, access to the internet, and English fluency. No parents elected to opt out of including their responses in the deidentified research database.

Measures

Demographic questionnaire

As part of the online survey, participants first completed a demographic and medical questionnaire developed by the study team that assessed child age, sex, race, and ethnicity and parent age, sex, and education level. Parents also reported diagnosis of peanut, tree nut, cow's milk, egg, soy, wheat, fish, and/or shellfish allergy.

Child mealtime behavior

Parents completed the Behavioral Pediatrics Feeding Assessment Scale (BPFAS)¹⁵ to obtain parent report of children's mealtime behavior and parents' strategies for managing these behaviors. The BPFAS was developed for parents of children aged 9 months to 7 years. The measure includes 35 items regarding child behaviors (25 items) and parents' behaviors and emotions (10 items) associated with meals. For each behavior, parents report the frequency on a 5-point Likert scale and indicate a dichotomous endorsement (yes/no) of whether the behavior is a problem for the parent. Six scores are derived from the BPFAS: child behavior frequency, child problem, parent behavior frequency, parent problem, total behavior frequency, and total problem. Higher scores indicate more concerns. The BPFAS has acceptable validity and reliability among typically developing populations.¹⁵ It has also been successfully used in pediatric chronic illness populations, such as those with type 1 diabetes, with satisfactory internal consistency.^{21,27} The Cronbach α values for this sample were 0.91 for the total behavior frequency scale and 0.93 for the total problem scale.

Food allergy perceptions

Parents' perceptions regarding their child's risk of allergen exposure, food allergy severity, and food allergy worry were assessed. Perceived risk of allergen exposure was rated on a 4-point Likert scale (0 indicating no chance to 3 indicating high risk), perceived food allergy severity was rated on a 100-point visual analog scale, and food allergy–related worry was rated on a 100-point visual analog scale. Parents provided a rating for each individual food allergy, and then composite variables were created as the mean of the individual food allergy ratings.

Pediatric parenting stress

Stress regarding parenting a child with a medical illness was assessed via the Pediatric Inventory for Parents (PIP).²⁸ The PIP is a 42-item parent self-report measure. Parents rate the item's frequency in the last week (1 indicating never to 5 indicating very often) and the level of difficulty associated with it on a 5-point Likert-type scale (1 indicating not at all to 5 indicating extremely). Frequency and difficulty ratings are summed for an overall total frequency score and a total difficulty score. Higher scores indicate greater pediatric parenting stress. The PIP has been used in diabetes samples and samples with other pediatric conditions.^{28–30} The Cronbach α values for this sample were 0.92 for the frequency scale and 0.95 for the difficulty scale.

Food Allergy Quality of Life—parental burden

Parents' food allergy–related quality of life was assessed using the Food Allergy Quality of Life—Parental Burden (FAQL-PB).³¹ The FAQL-PB is a 17-item measure that assesses the effect of food allergy on parents' daily lives on a 7-point Likert scale (0 indicating not limited or troubled to 6 indicating extremely limited/troubled). A total score is derived by summing the items; higher scores

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