

The Impact of Food Allergies on Quality of Life

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Abstract

Food allergy is a serious problem affecting a growing number of children worldwide. There is a large body of evidence supporting the detrimental effects that food allergy can have on a child's quality of life. With validated tools, we can identify these children and focus on how to protect, guide, and help them to live a safe life.

Recent research articulates how food allergies impact health-related quality of life (HRQL). There are studies reported from the child's perspective, as well as studies reported from the parent's perspective. With the development of validated disease and age-specific questionnaires, researchers can reliably gather data on the psychological aspect of children with food allergies.

The purpose of this article is to provide a review of the literature examining the psycho-social impact of food allergies on children. This article was designed to outline suggestions to help physicians care for the whole child — both mind and body.

CME EDUCATIONAL OBJECTIVES

1. Recognize and appreciate the impact of food allergies on psychosocial health.
2. List the factors that have been shown to negatively affect health-related quality of life.
3. Understand how physicians can directly help to improve a child's quality of life while living with food allergies.

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Disclosure: The author has no relevant financial relationships to disclose.

doi: 10.3928/00904481-20130619-12



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Food allergies are emerging as a major public health problem in the United States.¹ Currently, food allergies affect approximately 6% to 8% of children across the country, and are increasing in prevalence for reasons that are poorly understood. Food allergic reactions are the No. 1 cause of emergency room visits for anaphylaxis in the US,² and peanut allergy is responsible for the leading number of fatalities due to food-induced anaphylaxis.³

There are currently no cures available for patients with food allergy. Therapy is focused on food avoidance and emergency treatment of accidental food allergen ingestion. Children with food allergies must therefore maintain a constant degree of vigilance about food-allergen avoidance in numerous settings, including home, school, camp, restaurants, parties, etc. This constant state of hypervigilance can lead to reduced health-related quality of life (HRQL), as children bear the burden and fear of accidental ingestion.

HEALTH-RELATED QUALITY OF LIFE

HRQL refers to an individual's or group's perception of the effect of an illness and its treatment on their quality of life and activities of daily living. It considers three major aspects of overall health: physical, social, and psychological well-being.^{1,4} There are two types of instruments being used to measure HRQL — generic and disease-specific questionnaires. The generic questionnaires enable researchers to compare HRQL of different diseases and/or any disease to normal controls. The disease-specific questionnaires are more sensitive in detecting changes in HRQL-related to a particular illness because they focus on areas that are specific to the disorder.

The first study to measure the impact of food allergy on HRQL used a generic instrument. This study was published

by Primeau et al⁵ in 2000 and examined the impact of peanut allergy on HRQL compared with rheumatologic disease. This study found that the families of peanut-allergic children experienced significantly more disruption in their day-to-day activities and in their familial-social interactions compared with families of a child with chronic rheumatologic disease.

A study performed in the United Kingdom used a disease-specific questionnaire to evaluate the quality of life (QoL) of children with peanut allergy in comparison to the quality of life of children with type 1 diabetes mellitus.³ The authors found that HRQL was more impaired in children with peanut allergy than with type 1 diabetes. The children with peanut allergies were very frightened of an accidental peanut ingestion while the children with diabetes were only moderately frightened about experiencing a hypoglycemic attack. In addition, children with peanut allergies were more anxious about being away from home and eating away from home. These children were also more restricted in their physical activities than the children with diabetes because they felt more threatened by potential dangers in their environment.

A study performed by King et al⁶ found that girls with a peanut allergy reported a significantly greater impact on QoL in comparison to their sisters, especially for QoL in school, physical health-related QoL and overall QoL. In contrast, boys with peanut allergy rated only QoL in school significantly lower than their brothers. In this study, females with food allergies report overall poorer QoL than their male counterparts.

An interesting finding was reported by Le et al⁷ who studied children with peanut, tree nut, and fruit allergies. Though peanuts and tree nuts more frequently cause severe symptoms compared with fruit, the influence of food allergies on daily life did not differ between patients.

The authors found that 55% of patients in the peanut/tree nut group reported that food allergy influenced their daily life at home to a great extent, and 60% of the patients in the fruit group reported similarly. The impact on daily life outside of the home was higher, 72% and 62%, respectively. A possible explanation for this similarity in impact is that 52% of children in the fruit-allergic group were allergic to three or more fruits. Studies have previously shown that the greater the number of food allergies a child has, the higher the impact and the lower their perceived HRQL.⁸

Children with food allergies are often described as atopic individuals. Many children with food allergies suffer from comorbidities such as asthma and eczema. Sicherer et al⁹ found that children with coexistent eczema and asthma combined had significantly lower scores for general HRQL. They also found the greater number of food allergies a child has, the lower their perceived overall HRQL.

BURDEN OF ILLNESS

Parental Anxiety

Food avoidance for children with food allergies does limit allergic symptoms, but if accidental ingestion occurs, symptoms can be acute and severe, requiring emergency medical treatment. The burden of anxiety that this can create falls upon the child, the parents, and all caregivers of the child. This impact has far-reaching consequences. The burden consists of both avoidance of food allergens and an understanding of the emergency treatment required if an exposure were to occur.

For an infant or young child, parents would carry this burden. To leave one's baby in the care of another can be stressful for any parent, but add to this, hoping that your child will not be exposed to their potentially life-threatening allergen, is a concern above and beyond "normal" worry. A study conducted by

King et al⁶ in 2009 found that mothers scored significantly higher than fathers on the normal means on state anxiety, trait anxiety, and perceived stress. Mothers were also found to score their psychological and physical QoL as significantly worse than fathers.

Marital Discord

The differences in anxiety, stress, and QoL found for parents of children with food allergies are similar to previous findings of parents of children with other chronic illnesses such as asthma and diabetes mellitus. The difference in perceived impact of food allergies between mothers and fathers can lead to family tension and further poor health outcomes for all family members. It has been found that divorce rates are higher in parents of children with chronic illnesses.¹⁰ As food allergies continue to be similarly compared to chronic illnesses, marital discord arising from differences in perceptions regarding food allergy should be addressed. Dr. Bacal suggests that this can be initially touched upon by simply asking the child and/or parent how the rest of the family feels about their food allergy and how the family as a unit manages it.

Other helpful information to know is whether the household is allergen free and whether all family members agree on an allergy action plan. Knowing the larger context may alert a health care professional to any family conflicts that may be present surrounding the food allergy.

Separation Anxiety

As the child grows and acquires an understanding of his or her allergy, this burden is shared with the child and the child's multiple caregivers, including parents, extended family, school teachers, and friends' parents. King et al⁶ found that children with peanut allergies rated separation anxiety as significantly higher than their siblings.

Separation anxiety is a normal developmental milestone, which usually ends around the age of 2 years. It can, however, return during periods of stress. This may have an effect on a child's school performance and social functioning when a child does not want to be separated from his or her parent. And yet, one might argue that this returned separation anxiety and stress is justifiably warranted as the child overhears his or her parent giving instructions on how to administer an epinephrine auto-injector in the event of an emergency.

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Hypervigilance

An additional burden on the food-allergic child and their family includes the necessity to read food ingredient labels, making food shopping and meal preparation challenging. The family of a food-allergic child must plan their own food for social events where food may be served, adding a task to an already busy family and reminding the child that he or she may not eat the same foods as his or her friends. Families with a food-allergic child must additionally find safe restaurants that provide some degree of food allergy awareness. For example, Avery et al³ found that 60% of peanut-allergic individuals always went to the same restaurant because it catered to people with peanut allergies.

AWARENESS AND STIGMATIZATION

Food allergies are often underestimated as a result of poor awareness and a misconception that allergies are "nuisance" diseases, rather than poten-

tially serious or even life-threatening illnesses. For example, many schools still maintain the stance that such nuts are needed for many children to provide a protein-rich lunch. Consequently, the food-allergic child is directed to a specific "peanut/tree-nut free" zone/table at school. This school environment is arguably not a completely safe environment. The child's social milieu is being governed by their food allergy and the stigma of being labeled has begun.

'SOCIAL VULNERABILITY'

There is a social vulnerability associated with food allergies, which some researchers have shown to predispose children with food allergies to bullying. There are many definitions of bullying. Recent legal definitions in the United States identify bullying as any act that is intentionally carried out to harm another person with a specific characteristic or vulnerability.^{10,11} Shemesh et al¹² found that 31.5% of children with food allergies reported bullying specifically due to food allergies. The bullying included threats with food; 80% of the threats are made by classmates.

The researchers concluded that bullying was significantly associated with decreased QoL and increased anxiety and distress for the food-allergic children and their parents. Parents, however, only knew about their child's experiences of bullying in 52.1% of cases, yet parental awareness of bullying was associated with better quality of life and decreased amount distress in the children.¹²

In a study of food-allergic teens, Lieberman et al¹³ found that 35.2% reported having been bullied. Of those bullied, 79% attributed this specifically to their food allergy and 80% of the perpetrators were classmates. Shockingly, 21% reported bullying by a teacher or other school staff member. Typically the food-allergic children were verbally teased (64.7%); the most common physical act was having the child's food allergen

waved in their face (43.5%). Though none of the food-allergic children experienced allergic reactions due to the acts of bullying, the high risk is obvious.

The teens provided different reasons for the maltreatment — 78.8% reported being bullied simply because of having a food allergy. Other subjects felt that bullying was because of having to carry an “epi-pen,” having to be secluded to a specific area (eg, sitting at a peanut-free table), or having to receive special treatment in general. The consequences of bullying were reported as feelings of sadness (65.7%), embarrassment (64.2%), and nervousness (50%) in the teens. Table 1 summarizes the details of bullying. Sadly, instances of bullying are common and repetitive: 86% of those children bullied reported that they had experienced bullying on more than one occasion.¹³

FAMILIARITY WITH FAMILY’S FOOD ALLERGY EXPERIENCES

At approximately 7 years of age, children develop the cognitive ability to understand the serious nature of food allergy. Children living with food allergies face many challenges, hurdles, disappointments, uncertainties, and surprises. The attending physician must address both the patient’s physical and psychological health issues. It is helpful for the physician to have an awareness of what a food-allergic child and his or her family struggles with, how they cope with the food allergy, and what fears or daily worries they experience.

Life-threatening food allergies promote anxiety as previously discussed in addition to possible depression and social isolation. Children may fear death caused by his or her allergy, anaphylaxis, restaurants, traveling, grocery stores, camp, and school field trips. A study by Bollinger et al¹⁴ reviewed the impact of food allergies on daily activities of 87 families. Seventy percent reported a significant impact of daily life

TABLE 1.

Food Allergy-Related Bullying

Who:	80% by classmates
	21% by school staff
Why:	79% due to food allergy
What:	64.7% verbally teased
	43.5% allergen waved in face
Effects:	65.7% sadness
	64.2% embarrassment
	50% nervousness

Data from Lieberman et al¹³

that was affected by meal preparation. There were 79% of respondents who reported a significant impact on restaurant dining, 11% did not want play dates at friends’ houses, 10% did not want to engage in activities with relatives, 10% missed birthday parties, and 10% home schooled (see Table 2).

Anticipatory Guidance

Physicians can help to alleviate some of these concerns by suggesting that families call ahead to restaurants and speak with the managers to determine if they can accommodate the food allergy. Once at the restaurant, families can provide a list of their allergens to the waiter. The Food Allergy Research & Education (FARE) website¹⁵ has a chef card that can be helpful at restaurants.

For food allergy safety during social gatherings, physicians can encourage parents to reassure their child that they have spoken to their friend’s parents, party or play date hosts, and school staff about how to properly manage their child’s food allergy. To help a child’s psychosocial well-being, it is important to understand these children’s subjec-

TABLE 2.

Negative Impact on Daily Life

Restaurant dining	79%
Meal preparation	70%
Playdates at friend’s houses	11%
Activities with relatives	10%
Birthday parties	10%
School	10%

Data from Bollinger et al¹⁴

tive feelings around their food allergies. Often, they feel frustrated, angry, sad, afraid, overwhelmed, depressed, anxious, confused, or stressed. To effectively help children with food allergies, physicians can benefit from understanding the Kubler-Ross Five Stages of Grief.¹⁶ This model can help physicians determine whether their patient and family are in the denial, anger, bargaining, depression, or acceptance phase of their allergy (see Sidebar 1).

OBSTACLES TO ACCEPTANCE

There are obstacles that children and their families face regarding managing their food allergy well. Avoidance of food allergens requires constant vigilance and is complicated because the presence of allergens is not always obvious. Previous research found that although 60% of individuals were aware that they had a food allergy, more than 50% of them were unaware that the food they were consuming contained the allergen.¹⁷

Although food labeling has improved, it remains somewhat ambiguous, inconsistent, and there is a lack of consensus among the medical community on how to best manage this information. Among the general public, there is a general lack of understanding and cooperation. Physicians must determine strategies to help their food-allergic children overcome these obstacles.¹⁸

SIDEBAR 1.

Kubler-Ross Grief Cycle

- Denial
- Anger
- Bargaining
- Depression
- Acceptance

SIDEBAR 2.

Methods of Empowerment for Food-Allergic Children

- Carry 2 epinephrine auto-injectors at all times
- Recognize symptoms and respond quickly
- Vigilance
- Be aware of anaphylaxis action plan
- Be familiar with food allergy action plan
- Do not share food
- Read food labels carefully

Education and support for children with food allergies can be empowering, strengthen the child's coping mechanisms, and lead to an overall improvement in QoL. Children with allergies need to create and understand a personal food allergy management plan that includes step-by-step instructions for what to do in case of anaphylaxis. Children with food allergies need support to help identify and manage fears. Those affected by food allergies need to know that they can manage their allergic symptoms by food avoidance and manage anaphylaxis by carrying an epinephrine autoinjector. Food-allergic children and their caregivers must recognize early allergic symptoms in order to respond quickly. Food-allergic children must learn how to read food labels, know not to share food, and maintain an overall sense of

vigilance regarding their food allergy to stay safe. Sidebar 2 suggests methods of empowerment.

CONCLUSION

It is evident that food allergy has a significant psychosocial effect on children and their families. In the absence of a cure for food allergies, children must remain constantly vigilant to avoid food allergens. This degree of hypervigilance has a daily impact and has been shown to negatively affect children's QoL. There is ample literature reporting the deleterious effects of food allergies on children. More research is needed to derive successful interventions that help the psychological well-being of food-allergic children. Moreover, this information needs to be made easily accessible for physicians to incorporate into his or her clinical practice. Overall, there is great need to educate children, their families, and the wider community on strategies that will actively support affected children and ensure his or her ability to effectively manage food allergies. ■

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