



# Beyond Avoidance: the Psychosocial Impact of Food Allergies

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## Abstract

Over the past few years, the rates of food allergies have dramatically increased. As a result, the lives of patients and their caregivers have been dramatically altered. While most attention surrounding food allergies has focused on treatment, less consideration has been given to the mental health ramifications of living with this condition, among them depression, anxiety, post-traumatic stress, being bullied, and an overall poorer quality of life. At the same time, patients' family lives are often disrupted. Parents of food-allergic children, especially mothers, report anxiety, depression, and a decreased quality of life. Indeed, mental health issues associated with food allergies are likely underrecognized. In this review, we describe not only the psychosocial impacts of food allergies but also survey treatments that can be used to address this burgeoning problem. Interventions include educating members of the greater community about food allergies, camps for food allergic children, and support groups for parents. For physicians, treatment options consist of oral challenges, proximity challenges, oral immunotherapy, and cognitive behavioral therapy. Although the existing research is built on an already strong foundation, ultimately more studies are needed to deepen our understanding of the relationship between food allergies and mental health.

**Keywords** Food allergy · Depression · Anxiety · Quality of life · Bullying

## Introduction

We are in the midst of a food allergy epidemic. Rates of food allergies are as high as 5–8% in children and 3–4% in adults, with prevalence rates increasing 50% between 1999 and 2011 [1, 2]. For peanut and tree nut allergies, the prevalence rates tripled between 1997 and 2008 [3]. The reason behind the rise in food allergies is unclear, though researchers have their conjectures. For example, the hygiene hypothesis suggests our lack of exposure to microbes in a hypersanitary society hinders normal immunoregulatory responses, resulting in immunologic reactions to benign proteins like foods. By contrast, the dual allergen exposure hypothesis posits that initial exposure to food allergens through the skin, especially in infants

with atopic dermatitis, results in allergic sensitization, whereas ingesting the food orally first instead leads to tolerance.

Regardless of the pathophysiological mechanisms, food allergies can have a profound effect on a family's life, trickling into aspects of day-to-day living both large and small. Grocery shopping, cooking dinner, and preparing snacks become challenging, as food package labels do not consistently list food allergens [4]. When dining out, families will frequent the same "safe" restaurant over and over, or they may avoid eating out altogether. Other families will limit vacations requiring airplane flights or overnight stays [5]. Socially, food allergies can affect a child's ability to play at a friend's house, and limit participation in birthday parties, organized sports, and camps [6]. Healthwise, parents become concerned about nutritional deficiencies and negative impacts on their child's growth. Caregivers may need to reduce work hours or quit their jobs. And if parents must change schools or choose to homeschool their children, the whole family's life is uprooted.

Some of the fears of exposure to food allergens are well-founded. Every year in the USA, 200,000 people visit the emergency room and 9500 children are hospitalized for food allergy reactions [7, 8]. While fatalities are rare, they do occur. A website devoted to food allergies documented 15 deaths in 2017 and 12 in 2016, though this is only a fraction of the

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deaths that in actuality occur [9]. What's more, there are economic consequences: \$1.7 billion for arranging special diets, \$857 million for avoidance of unintentional exposures, and \$650 million for changing schools [10].

Frustratingly, the treatment for food allergies has, for decades, been unchanged: strict avoidance, an epinephrine auto-injector, and a written anaphylaxis action plan. While we passively wait years to see if a child outgrows his food allergies, a host of psychological problems can develop: depression, anxiety, and being bullied in school. At the same time, parents, as caregivers for their food-allergic children, can experience emotional stress, including anxiety, depression, and hypervigilance.

The purpose of this review, then, is to not only summarize recent findings on the psychiatric co-morbidities that arise in families who cope with food allergies, but also to review options for interventions. As the rate of food allergies continues to rise, the psychological repercussions will become increasingly salient. It is no longer sufficient for a physician simply to diagnose a child with food allergies and prescribe an epinephrine auto-injector. Nowadays, it is also imperative to consider the psychological well-being of these children and their caregivers.

## Experiences of Children and Adolescents with Food Allergies

Food allergies can be a source of apprehension for children. Recent studies show that the incidence of a diagnosable anxiety disorder, as defined in the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5), is no greater among children with food allergies than in the general population. However, children do have higher levels of distress regarding specific aspects of living with food allergies. One study surveying 8–16-year-olds determined that children with food allergies did not have increased anxiety compared to children without allergies [11]. Another study also found that children with food allergies had similar overall distress scores compared to controls, without an increased incidence of anxiety disorders [12]. But upon closer analysis of the specific subscales involving measures of distress, children with food allergies had significantly elevated scores for coping in an anxious manner as evidenced by heightened vigilance in avoiding allergen exposures. They also had elevated scores for separation-induced panic and were fearful when their parents were not around. The authors of both studies surmise that these children may have acquired adequate cognitive and emotional tools to cope with their food allergies, such that they are not meeting the full criteria for an anxiety disorder. Yet their ongoing concern of having an allergic reaction still results in legitimate fear.

Food allergies can also result in post-traumatic stress symptoms (PTSS). PTSS is increased when a child has previously experienced anaphylaxis, or when the stress of unpredictable exposure to food allergens is too great. In a study of 25 food-

allergic children ages 7–13, subjects were surveyed on their experiences with PTSS. Two subjects met criteria for a probable diagnosis of post-traumatic stress disorder (PTSD), while 9 additional children met criteria for subsyndromal PTSD [13]. The authors note that avoidance as a coping strategy, while necessary to prevent further reactions, can also be psychologically disabling. In extreme cases, food avoidance can result in debilitating social isolation and perpetuate anxiety about the possibility of future reactions.

For a child with food allergies, the transition to adolescence can be challenging. As kids become teenagers, the relationship between parents and children, who begin to exercise their independence, changes. As a result, adolescents start to share less of their daily lives with adults, and parents cannot as readily monitor their kids. And due to peer pressure, teens are often prone to risky behaviors. Indeed, a survey of college students with food allergies found that only 40% followed dietary restrictions, and an abysmal 6.6% carried an epinephrine auto-injector [14]. Not surprisingly, the risk of death from accidental food ingestion increases during adolescence [15].

These changes in the inner lives of food-allergic teenagers are captured in recent reports. In one study of 10–16-year-olds, subjects with food allergies were more likely to have symptoms of separation anxiety, generalized anxiety, anorexia nervosa, and depression [16]. Food allergies were associated with increased vigilance with regard to food ingestion, but were not associated with a higher likelihood of meeting diagnostic criteria for a psychiatric disorder. Instead, these symptoms reflected an adaptive attention to detail. In another survey, mothers reported that their teenage and young adult children with food allergies had increased symptoms of depression, anxiety, and ADHD [17]. Depression was attributed to the stress of being afflicted with a chronic condition, the realization that having food allergies can be a permanent condition, and social exclusion from peers. The teenagers' anxiety, on the other hand, may have reflected the distress of their parents, who must exhibit constant attentiveness around their children. Interestingly, there was a disagreement between adolescents and their mothers regarding the severity of all these issues. In this instance, it's unclear whether the mothers are exaggerating the symptoms or their children are downplaying their emotions. This disparity was noted in another survey, which described stark differences in the ways parents and their children perceived the attention given to allergic reactions and dietary restrictions [18]. Overall, the data suggests that adolescents internalize the stress related to managing their food allergies.

## Bullying

One major source of hardship for children with food allergies is bullying. Bullying can be directed against a food-allergic person in different ways: taunting, threatening him with forced

food ingestion, throwing food in his direction, or even surreptitiously contaminating his lunch. This phenomenon was initially described in 2010, when Lieberman et al. found that 24% of all food-allergic teens and adults had been harassed at some point because of their food allergy [19]. Eighty-two percent of these incidents occurred at school, mainly instigated by classmates, though alarmingly, 21% of food-allergic students reported that teachers and school staff were the perpetrators. Thus, it may not be surprising that 99% of teachers underestimated the amount of taunting directed against food-allergic children, with only 4% reporting first-hand knowledge of a bullying event [20]. Most children were bullied solely because of their food allergies. Fortunately, there have been no reported instances of any fatalities caused by bullying.

In another study, Shemesh et al. examined how bullying affected families, in particular the relationship between food-allergic children and their parents [21]. Only about half of children told their parents they had been bullied. Yet after they shared their experiences with their parents, children reported a better quality of life (QoL). In this context, “quality of life” is defined as the impact of an illness and its therapy upon a patient, as perceived by the patient [22]. Effective intervention is dependent on dialogue between parents and school staff. Parental action—which could include talking with the principal, teacher, or the offender’s parents—was associated with a 2.10 increased odds of bullying cessation [23]. However, when these children were followed prospectively, 69% of children, despite the interventions, still continued to be bullied 1 year after the inciting event.

Notable examples of bullying are highlighted in the media. In October 2016, a student at Central Michigan University smeared peanut butter on the face of an unconscious, peanut allergic classmate [24]. The student awoke the next day with a swollen face. After the victim’s mom posted a detailed account on Facebook, police investigated, and the bully eventually plead guilty to assault and battery. In January 2018, a teen rubbed pineapple on her hand and then gave a girl with known pineapple allergy a high-five. The victim was treated in the hospital, while the perpetrator was charged with felony aggravated assault and criminal conspiracy [25]. And a scene in the movie “Peter Rabbit” (2018) portrays a human who develops anaphylaxis when rabbits trying to get into his garden use a slingshot to lob a blackberry straight into his mouth [26]. The human injects himself with epinephrine, and subsequently crumples to the ground. After pressure from food allergy advocacy groups, Sony, the distributor of the movie, was forced to apologize.

## The Effect of Food Allergies on Families

Even prior to receiving a definitive diagnosis by a physician, families with food allergies can have emotional distress. After all, wait times to see a specialist can be long, and some

geographic areas lack access to an allergist. In the meantime, with limited guidance, patients and their families attempt to adjust their habits in order to avoid suspected allergens. Venter et al. compared parental reports of health-related QoL in children with physician-confirmed food allergy versus those with suspected food allergy [27]. Both groups had reduced QoL in the domains of food anxiety, emotional impact, and social and dietary limitations. Furthermore, Birdi et al. found that parents of children with food allergies had more anxiety and depression, regardless of whether the allergy was parentally suspected or physician-diagnosed [28]. The increased anxiety levels were related to a lack of knowledge on how to treat allergic reactions. The authors also hypothesize that the greater levels of depression among parents of children with a physician-diagnosed food allergy are likely due to these parents internalizing the life-threatening and sometimes incurable nature of food allergies.

Though food allergies affect the entire family, mothers have an increased level of stress and anxiety compared to other family members. King et al. used validated surveys to assess QoL, anxiety, and perceived stress in 46 families of children with peanut allergies. Mothers reported more anxiety and stress, and a greater impact on their QoL, than anyone else in the family, including the food-allergic children themselves [29]. Moreover, Gupta et al. surveyed 2900 parents and found that 25% reported that having a child with a food allergy caused a strain in their marriage [30]. The authors suggest that the disparity between mothers’ and fathers’ perceived stress and anxiety regarding their children’s food allergies likely contributed to marital discord.

Rouf et al. conducted a qualitative investigation of eight mothers raising young children with food allergies. The researchers offered the survey to all recruited parents, but notably, no fathers responded. Fear and anxiety were prominent emotions that mothers reported, particularly if they had previously witnessed severe allergic reactions [31]. Some mothers also experienced grief and loss, due to the limitations that having a food allergy placed on the child and their family. At the same time, mothers felt the pressure of being primarily responsible for the safety and health of their children. Dishearteningly, some mothers faced resistance from others in the community when explaining their child’s food allergy, and are also forced to navigate the social discomfort that results from other families minimizing the potential risk associated with their child’s food allergies [31]. Indeed, the difficult social interactions mothers face is in part due to the general public’s many misperceptions regarding prevalence, symptoms, and diagnosis of food allergies [32].

Moreover, Fedele et al. evaluated families’ food allergy management skills, characterized by their level of competency, along with any associated anxiety [33]. Mothers who were extremely anxious about food allergy were described as “anxious high responders,” with frequent thoughts about food

exposure causing death. Indeed, they become mentally paralyzed from their fear of a reaction. In addition, the children of mothers who were anxious high responders had higher general anxiety as well as higher trait anxiety, which is the tendency to anticipate a possibly threatening situation with more anxiety.

## Food Allergy Management

To successfully manage food allergies and their psychological repercussions, many different aspects of care should be considered. First, educating all parents, especially those unfamiliar with food allergies, should be a priority. Rather than occurring at home, most instances of food-induced anaphylaxis take place at a friend's house [34]. Yet only 43.6% of caregivers of children without food allergies are familiar with epinephrine auto-injectors [35]. In addition, patients and families turn to the internet to learn about food allergies. In one study, all 184 participants reported searching for information on food allergies online [36]. Of course, some websites are better than others, and the internet is rife with misinformation. As a starting point, families can peruse the websites listed in Table 1, which includes vetted material from national allergy organizations.

Also, schools have a role in managing food allergies. Given that, in any classroom, two or more children are likely to have food allergies, most schools are already accommodating. Food allergies are considered a “hidden disability” by the United States Department of Agriculture. Consequently, if a food-allergic child's needs are not being adequately addressed at school, parents can initiate a 504 Plan, which provides accommodations for children with disabilities so that they can be academically successful [37].

Of course, physicians are integral in helping families cope. A careful review of the basic tenets of food allergy treatment, including epinephrine auto-injector use and vigilant avoidance, is an important first step. In support of this, one study

of children with nut allergies found that both mothers and children had lower levels of anxiety when the child was prescribed an epinephrine auto-injector [38]. However, children who had an epinephrine auto-injector did not carry it all the time, or strictly avoid nut-containing products, suggesting that some children and families, despite physician-initiated education, are still not adherent to the treatment plan.

The time a physician is allotted at the initial food allergy consultation to assess mental health-related issues is limited. A study evaluated the efficacy of a workshop that asked allergists, using a standard questionnaire, to identify anxiety in food-allergic patients. However, the workshop did not increase the rate of case identification [39]. Furthermore, the allergists reported that they did not have time to implement the screening questions into their practice. Though there may be some resistance, it is still important for allergists to think about the mental well-being of their patients. Indeed, the stress from having a food allergy may be more burdensome than the food allergy itself. For a list of screening questions to ask patients during an office visit, and to determine what further actions need to be taken, see Table 2 and Fig. 1. Importantly, if a parent or child feels that it is warranted, a separate appointment, solely devoted to discussing the psychological aspects of food allergies, should be considered.

To help physicians screen for mental health-related disorders, various surveys have been described in the literature [22, 40, 41]. These surveys are used both for academic studies and in the clinical setting. The most commonly implemented tool is the Food Allergy Quality of Life Questionnaire (FAQLQ), which is available in many different languages, and evaluates QoL in children, teens, and adults [21]. The Pediatric Food Allergy Quality of Life Questionnaire (PFA-QL), which was validated in the UK in 2013, was developed to measure food allergy QoL specifically in children [41]. The Scale of Psychosocial Factors in Food Allergy (SPS-FA), by contrast, is Chilean in origin, and, compared to the PLA-QL and FAQLQ, focuses more on the caregiver–child relationship

**Table 1** Online resources

Organization	Website	Comments
Food Allergy Research and Education	<a href="https://www.foodallergy.org/">https://www.foodallergy.org/</a>	One of the most prominent food allergy advocacy organizations
Asthma and Allergy Foundation of America	<a href="http://www.kidswithfoodallergies.org/">http://www.kidswithfoodallergies.org/</a>	Information from the oldest allergy charity in the USA. Local support groups available
Allergy Eats	<a href="http://www.allergyeats.com">www.allergyeats.com</a>	Locator for food-allergy friendly restaurants. Also has a phone app available
Allergic Living Recipes	<a href="https://www.allergicliving.com/recipes/">https://www.allergicliving.com/recipes/</a>	Food-allergen free recipes
American Academy of Allergy, Asthma, and Immunology	<a href="http://www.aaaai.org/conditions-and-treatments/allergies/food-allergies">http://www.aaaai.org/conditions-and-treatments/allergies/food-allergies</a>	“From the Library” section on the right side of the website is particularly useful
Anaphylaxis Campaign	<a href="https://www.anaphylaxis.org.uk/">https://www.anaphylaxis.org.uk/</a>	A British website with many resources about living with food allergies, including travel tips
Allergic Child	<a href="http://home.allergicchild.com/">http://home.allergicchild.com/</a>	A blog about family life with food allergies

**Table 2** Screening questions for physicians to ask during a food allergy consultation

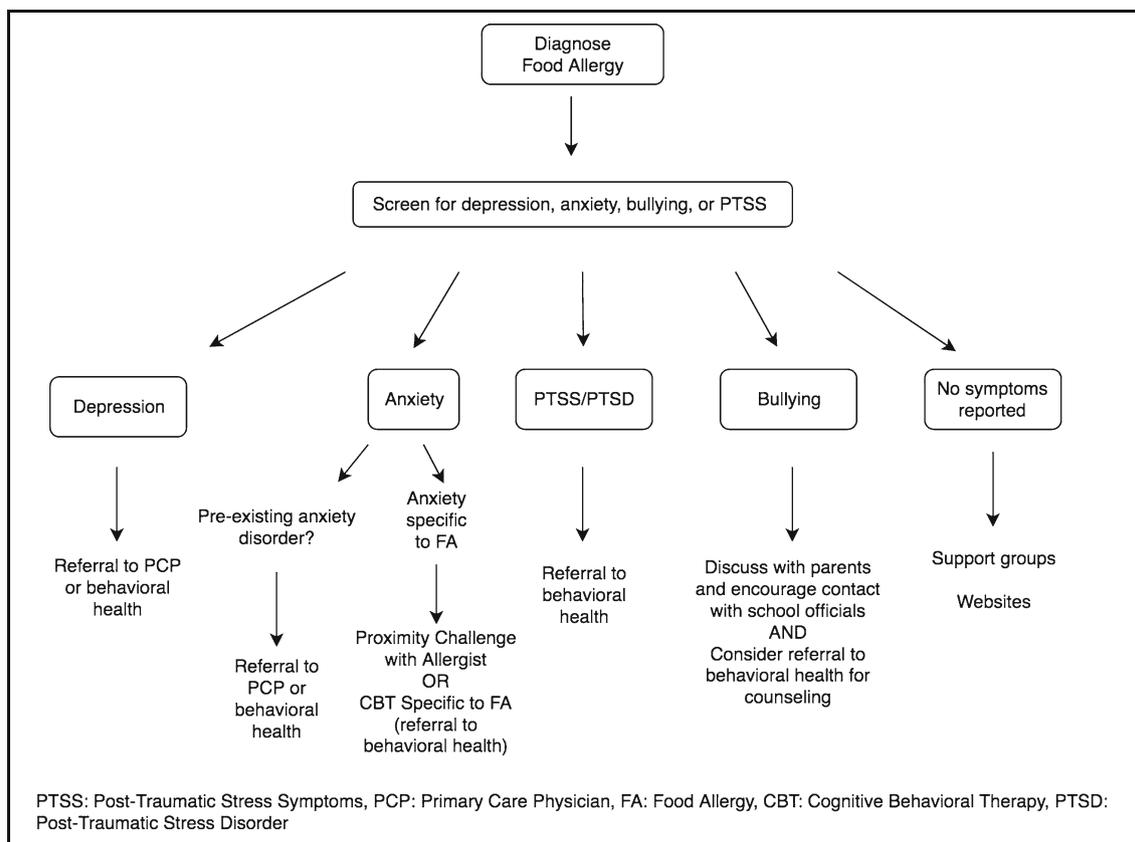
- Have you ever been diagnosed with depression, anxiety, or post-traumatic stress disorder?
- In the past 2 weeks, have you felt sad or lost interest in doing things you typically enjoy?
- Have you felt excessive worry or anxiety on most days in the past 6 months? Do you worry about everything, or only about your food allergy specifically?
- If you have experienced anaphylaxis, do you ever have recurring intrusive memories of the event or nightmares about the incident?
- Have you ever experienced bullying because of your food allergy?

[40]. More recently, the SPS-FA was validated in the UK as well [42]. See Table 3 for pertinent questions, some of which are drawn from these surveys that a doctor, a food-allergic child, and his caregivers can consider together.

Oral food challenges, a staple allergy procedure, may also be helpful in alleviating anxiety. In a study of over 100 families who underwent oral food challenges, mothers reported increased anxiety on the day of the challenge, although children did not, suggesting differences in perceived risks [43]. Yet 3–6 months after the food challenge was performed, both mothers and their children reported improved food-related QoL, including decreased fear of accidental exposures and confidence in treating allergic reactions. This occurred even

if children had an allergic reaction during the oral challenge, since parents were able to witness how reactions can be safely treated with medications. Similarly, Herbert et al. studied mothers who had anxiety regarding oral food challenge referrals [44]. Mothers of children who participated in oral food challenges were able to effectively manage their anxiety, due to their trust in their physician's ability to handle an allergic reaction. Moreover, seeing their children successfully tolerate an allergenic food in smaller quantities decreased the mothers' level of anxiety about future reactions. Of note, even mothers whose children did not pass the food challenge reported no increase in their level of anxiety. Instead, they found it helpful to see what types of reactions could potentially occur while in a controlled setting.

Proximity food challenges, though not commonly performed, can be a useful intervention for families concerned that airborne or contact exposures will cause anaphylactic reactions. In reality, studies have proven that such exposure-induced reactions are exceedingly rare [45]. Nevertheless, the fear of casual contact still pervades. A step-wise proximity challenge, when successfully performed, helps assuage some of this fear. For instance, a proximity challenge for a peanut allergic child involves bringing an open jar of peanut butter increasingly closer to the child, until it is about 12 in. away from the child's face. After 10 minutes pass, a lack of allergic



**Fig. 1** Algorithm for managing psychiatric co-morbidities in patients with food allergies

**Table 3** General questions physicians, patients, and caregivers can contemplate together

For patients	<ul style="list-style-type: none"> <li>- How has your food allergy affected you emotionally?</li> <li>- How does your family understand your food allergy?</li> <li>- How has your food allergy affected your relationships with your family and/or friends?</li> <li>- Would you be interested in speaking with a mental health professional about how your food allergy is affecting you emotionally?</li> </ul>
For caregivers	<ul style="list-style-type: none"> <li>- What is the impact of your child's food allergy on your family?</li> <li>- How much time do you spend reading labels when you go shopping?</li> <li>- How has your child's food allergy affected you emotionally?</li> <li>- How has your child's food allergy affected your social interactions?</li> <li>- Have you felt discriminated against because of your child's food allergy?</li> <li>- Would you be interested in speaking with a mental health professional about how your child's food allergy is affecting you emotionally?</li> </ul>

symptoms rules out the possibility of anaphylaxis due to airborne exposure. Next, the physician will dab a small amount of peanut butter on the intact skin of the volar surface of the arm, and observe for 5 more minutes. With no contact exposure reactions, the arm can be cleaned off with water and soap. In their clinic, the authors tested not only peanut butter, but also cashew, almond, sunflower, soy, walnut, and cow's milk [46]. They reported that no patients had a systemic reaction, and only 1 had urticaria at the application site.

A large contributor to the distress associated with food allergies is the fact that no definitive treatment currently exists. Yet some exciting possibilities are on the horizon, including food oral immunotherapy (OIT). The concept behind food OIT, which has been extensively studied for the past decade and is currently available in limited settings, is similar to that of immunotherapy for environmental allergies. A patient ingests a minute quantity of a food that he is allergic to, and this amount is gradually increased, over many months, until he can consume a quantity that is large enough to prevent anaphylaxis from an accidental ingestion. Adverse reactions include gastrointestinal intolerance, allergic reactions during up dosing, and eosinophilic esophagitis. Peanut OIT is currently in phase 3 clinical trials, with the possibility that an FDA-approved product will exist in 2019. Similar treatments for egg and milk allergies are also being explored.

Despite the risks associated with OIT, there is a noticeable improvement in QoL in caregivers whose children undergo the procedure. Factor et al. studied the parents of 100 children being desensitized to peanuts, and found a significant decrease in food-related anxiety and a reduction in dietary restrictions [47]. Similarly, QoL studies involving milk OIT demonstrated improvement in a child's ability to eat at restaurants and engage in social activities [48, 49]. Even after undergoing OIT to multiple foods simultaneously, which is far riskier than single allergen OIT, caregivers still reported an improvement in QoL, including decreased dietary restrictions and increased social interaction with others [50]. In summary, this data suggests that in some instances, the risk of a reaction during OIT treatment is preferable to allergen avoidance alone.

## Mental Health Interventions

Once children and families with psychosocial needs are identified, physicians can refer them to mental health providers or other resources in the community. However, few studies have evaluated the efficacy of psychosocial interventions specifically for children with food allergies. Knibb et al. followed a cohort of 11 and 12-year-olds with severe food allergies attending a week-long camp [51]. This camp provided a supportive therapeutic environment in a setting that was allergen free, and consisted of outdoor activities, confidence building, and workshops about managing food allergies. Follow-up questionnaires 3 and 6 months later demonstrated that participants had a reduction in anxiety and obsessive behaviors, gained confidence in talking to others about their food allergies, and developed an increased sense of agency in managing their own health. Though the study had a small sample size, the lasting effects of positive experiences at camp reinforce the importance of providing support and education to children regarding their food allergies.

Food allergy support groups are another resource that can aid in reducing anxiety. Sharma et al. studied the impact of having an allergist speak at a food allergy support group [52]. More than 90% of families felt comfortable with having an allergist at the meeting, and more than half felt that having an allergist give a talk to the group helped them feel more at ease speaking with their own child's allergist. Attending a food allergy support group decreased anxiety in over two-thirds of the responders, while a similar number felt that the group improved their child's QoL. Support groups are a useful forum for families not only to learn about food allergies, but also to commiserate and receive encouragement from other families facing similar challenges.

Because psychosocial interventions may be beneficial, the level of caregiver stress is also important to assess. Annunziato et al. surveyed mothers attending a food allergy conference, and 70% of them reported that a mental health referral would be helpful [53]. Barriers to receiving mental

health care included cost, lack of time, and lack of providers with specific expertise. Despite the barriers, common therapies like Cognitive Behavioral Therapy (CBT) can be effective. CBT involves assessing emotions, behaviors, and negative thoughts to see how they are causing and perpetuating a patient's anxiety and depression. Over the course of therapy, patients learn techniques to modify their thoughts and behaviors to improve their mood and anxiety. Knibb published a case series evaluating CBT as an intervention for mothers of children with food allergies [54]. She found that the mothers who received CBT for 12 weeks had reduced anxiety and depression with simultaneous improvement in overall mental health and QoL. What's more, this study found that only a subset of parents requires a mental health referral: parents whose children have complex food allergy issues, and those with an increased level of anxiety in general.

## Future Directions

Although the literature on food allergies and psychiatric comorbidities has blossomed in recent years, we have only just begun to tease out the intricacies of this relationship. One issue is that most data in the reviewed studies only captured a snapshot in time. More longitudinal research is needed on how a patient with food allergies copes over a lifetime, from the initial diagnosis in childhood to how he manages as an adult. Further, there is a dearth of information on prevalence rates of depression, anxiety, and PTSD in both patients with food allergies—particularly young children—and their caregivers. It is likely that the mental health issues associated with food allergies are underreported.

Moreover, there is a deficiency in data looking at how ethnic minorities cope with food allergies. The self-reported food allergy rate has nearly doubled in black children in the past 23 years—a rate increasing more quickly than that among whites and Hispanics—yet little is known specifically about the black children's QoL [55]. Immigrant communities have been similarly neglected. For example, East and Southeast Asians residing in Canada often face skepticism and disbelief when they disclose their food allergies to relatives in Asia, where food allergies are less common [56]. This, in turn, leads to social exclusion. How these patients navigate between different cultures is an area ripe for exploration.

In the clinical arena, physicians should become more cognizant of the relationship between food allergies and mental health. We should make sustained efforts to enlighten primary care physicians, especially pediatricians and family physicians, as well as allergists, for whom mental health aspects of food allergies should become a formalized part of the training curriculum. With the endorsement of the American Board of Allergy and Immunology, we can educate trainees during fellowship. For allergists already in practice, we can

incorporate this topic into the Continuous Assessment Program as part of the Maintenance of Certification. Additionally, at regional and national allergy meetings, we can devote breakout sessions to food allergies and mental health.

At the same time, with the increasing numbers of children and families with food allergies, psychiatrists, psychologists, and therapists can devote more effort to finding effective treatments to integrate into their practices. Eventually, allergists and psychiatrists, who historically have had limited interactions, can devise standardized guidelines on the psychosocial impact of food allergies. Ultimately, health care providers from different disciplines, working together, can help reduce the mental health burden of the food allergy epidemic. In the process, patients and their families will greatly benefit.

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Research Involving Human Participants and/or Animals** This article does not contain any studies with human participants or animals performed by any of the authors.

**Informed Consent** For this type of study, formal consent is not required.

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