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Bullying in Australian children and adolescents with food allergies

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Abstract

Background: Food allergy is an increasing concern worldwide. The significant impact of food allergies on quality of life and bullying has been well described in international studies. No studies have yet investigated the occurrence of bullying in children and adolescents with food allergies in the Australian population. This study aimed to characterize and examine the frequency of bullying and describe those most responsible and the effects of the bullying on the victims.

Methods: Questionnaires were developed based on those used in previous studies and were distributed throughout paediatric allergy clinics. Children and adolescents aged 10-19 with food allergies were recruited to complete the questionnaire independently, whilst parents completed the questionnaire on behalf of their children aged 5-9 with food allergies. The data were tabulated and analysed using descriptive statistics.

Results: Ninety-three questionnaires were completed. Overall, 39 (42%) children experienced some form of bullying. This was higher in the older children and adolescent group, where 53% (18/34) were bullied. In addition, 23% (21/93) of the cohort were bullied or teased specifically because of their allergy. Food allergens had been used in the bullying in 24 cases, but no child reported being forced to eat foods to which they were allergic. Two adolescents experienced allergic reactions.

Conclusions: This study highlights that those with food allergy are subject to a high degree of bullying. This risk of bullying for children with food allergy indicates a significant social problem that requires addressing to positively assist these children.

KEYWORDS

adolescents, allergy, anaphylaxis, Australia, bullying, children, food allergy, harassment, paediatrics, teasing

1 | INTRODUCTION

Worldwide, food allergy is an increasing concern for children, adolescents and their families, with most recent Australian reports showing food allergy occurrence in 1-in-12 children.^{1,2} The significant impact food allergies has on quality of life has been well documented previously³⁻⁹ with major concerns of children and adolescents related to accidental exposure and specific social interactions (such as kissing a person who just ate an allergen).¹⁰

The incidence of bullying in this population has only recently been examined, with several studies highlighting its occurrence in North America, Canada, Italy and Japan.¹¹⁻¹⁹ In some studies, more than 30% of children and adolescents have reported being bullied solely because of their food allergy, with reports of up to 26% experiencing multiple episodes of bullying.²⁰ Despite high levels of food allergy in Australia, no study has yet characterized bullying in this population.

Bullying is of great concern to children and adolescents and is defined as "repeated verbal, physical, social or psychological behaviour that is harmful and involves the misuse of power by an individual or group towards one or more persons."²¹ It is a risk factor for anxiety, depression, suicidal ideation, school avoidance and social rejection.²²

By surveying children and adolescents in allergy clinics, we aimed to examine the frequency of bullying in this population with food allergies; characterize the bullying in terms of how, where and why it takes place; describe those most responsible for bullying; and describe the effects of the bullying on the children and adolescents with food allergies.

2 | METHODS

Two questionnaires were developed based on similar surveys carried out in previous international studies.^{7,8,11,15,17} Most of the questionnaires were not formally validated. One was generated for parents to complete on behalf of their children (5-9 years old), and the second was tailored in its phrasing to be answered independently by older children and adolescents (10 years and older). Experienced allergy specialists oversaw and refined the final questionnaires. The majority of questions were in a multiple-choice format.

Demographic data were collected within the questionnaires including age, sex, types of food allergies, adrenaline auto-injector prescription and other health conditions. Any experiences of bullying, as a result of food allergies or otherwise, were explored. Further questions surveyed the frequency of bullying, what had occurred, who was involved and why they believed they were bullied. The location of encounters and the results of the bullying on the individual were recorded also.

The questionnaire was distributed in paediatric allergy clinics at two metropolitan centres. All children and adolescents between the ages of 5-19 with food allergies attending these clinics were invited to participate in the study. Participants were determined to be food allergic based on food allergy history and confirmatory tests. The only exclusions were children below the age of 5 and respondents who experienced language barriers and therefore could not understand the questionnaire. We wished to capture as many respondents as possible over the duration of the study. Children and adolescents aged 10-19 with food allergies were encouraged to complete the questionnaire independently, whilst parents completed the questionnaire on behalf of their children aged 5-9. Emphasis was placed on involving the child in answering the questions as much as possible.

To ensure confidentiality, all questionnaires were anonymous, and there were no identifying data on any returned questionnaire. If questions were left blank, they were not included in the analysis.

The data were tabulated and descriptive statistics were used to analyse demographic data and to characterize the occurrence of bullying in these individuals. The study was approved by the

South-Western Sydney Local Health District Human Research Ethics Committee (Reference: HREC/16/LPOOL/87).

3 | RESULTS

Approximately three hundred and eighty numbers of patients were approached to participate, and ninety-three questionnaires were consented to and completed (24% response rate). This included 59 parents completing questionnaires on behalf of their 5- to 9-year-old children, and 39 older children and adolescents completing theirs independently. Demographic information concerning this group is shown in Table 1. Eighty-three of 93 (89%) respondents were primary school aged (5-12 years old) (including some about to start school), and the remaining 10 (11%) were of high school age (13-18 years old).

Nut allergies (peanut, closely followed by tree nuts) were the most common allergies represented, affecting 65 (70%) and 60 (65%) of the children and adolescents, respectively. This was followed by egg allergy in 32 (34%) of respondents. One respondent was avoiding no foods at the time of the questionnaire as a result of a successful food allergen challenge; however, they had avoided foods previously.

Overall, 39 of 93 (41.9%, 95% CI 31.9-51.9) children experienced some form of bullying. This was higher in the older children and adolescent group (aged 10-18) where 52.9% (18/34, 95% CI 36.1-70.0) were bullied. Within the younger children (aged 5-9), 35.6% (21/59, 95% CI 23.4-47.8) were bullied. The difference between these two groups was not statistically significant ($P = 0.103$). Of the 39 who were bullied, 21 (54%) were bullied directly because of their food allergy; 13 (33%) were bullied due to a medical condition other than their food allergy; and 29 (74%) were bullied for other reasons. Some individuals attributed bullying to more than one reason. Overall, 22.6% (21/93, 95% CI 14.1-31.1) of the cohort were bullied or teased because of their food allergy.

For those not bullied, 31% were concerned that they may experience bullying as a result of their food allergy in future. In the free text section of the questionnaire, parents revealed that they believed their children were not bullied due to protective factors such as their child having good friends at school ($n = 8$), being too young for bullying ($n = 6$) or because other children at school had a good understanding of the severity of allergies and were educated by their teachers ($n = 7$).

Of those bullied for any reason, 23/30 reported repeated bullying between 1 and 4 times in the last month, and 18/27 reported being bullied more than 10 times since starting their formal school careers. Overall, 37.6% (35/93, 95% CI 27.8-47.5) of our cohort experienced multiple episodes of bullying. Sixty-three percentage reported being bullied by different groups or people. The most common perpetrators were classmates ($n = 31$) and children in other classes ($n = 23$).

More specifically for those bullied because of their food allergy, 12/18 reported being bullied between 1 and 4 times in the last month, and 11/21 more than 10 times since beginning to attend

Gender			Food allergy	93 (100%)
Male			Peanut	65 (69.9%)
Female			Tree nuts	60 (64.5%)
Age			Egg	32 (34.4%)
Parents of young children (n = 59)	5	10 (10.8%)	Cow's milk	18 (19.4%)
	6	13 (14.0%)	Fish	13 (14.0%)
	7	12 (12.9%)	Fruit	11 (11.8%)
	8	13 (14.0%)	Sesame	10 (10.8%)
	9	11 (11.8%)	Wheat	5 (5.4%)
Older children and adolescents (n = 39)	10	11 (11.8%)	Soya	2 (2.2%)
	11	7 (7.5%)	Other seafood	1 (1.1%)
	12	6 (6.5%)	Other	13 (14.0%)
	13	3 (3.2%)	Number of foods avoided because of allergy	
	14	2 (2.2%)	0	1 (1.1%)
	15	3 (3.2%)	1	19 (20.4%)
	16	0 (0.0%)	2	12 (12.9%)
	17	1 (1.1%)	3	25 (26.9%)
Asthma	18	1 (1.1%)	4	8 (8.6%)
	54 (60.0%)		5	13 (14.0%)
			>6	10 (10.8%)
Atopic dermatitis	70 (77.8%)		Adrenaline auto-injector prescription	67 (72.0%)
Allergic rhinitis	42 (46.7%)			
Other health conditions	10 (11.1%)			

TABLE 1 Demographic characteristics of 93 food-allergic children and adolescents

school. Overall, 21.5% (20/93, 95% CI 13.2-29.9) of our cohort experienced multiple episodes of bullying because of their food allergy. Of major concern, three of these older children or adolescents experienced bullying by teachers.

The majority of bullying occurred in the school environment, with the most common location being the playground or sports-ground (n = 35), followed by the classroom (n = 19). There were a variety of reasons why older children and adolescents believed they were bullied and why parents believed their children were bullied (Figure 1). A large proportion attributed the maltreatment as being due to food allergy (n = 16) and because of being excluded from a group (n = 15). The key qualitative answers for "other" were "because they bully everyone"; personal differences; background; appearance; and eczema-related bullying.

Bullying often involved being "teased, called names or someone has said mean things to me" (n = 31) as well as other physical forms of bullying (Figure 2). Whilst food allergens were involved in the bullying in 24 of the individuals, there were no reports of children knowingly being forced to eat food to which they are allergic. One person, however, was tricked into eating something to which she was known to be allergic.

Most children and adolescents reported adverse consequences from bullying and teasing (Figure 3). The majority reported experiences of sadness (n = 30), whilst six stated that the bullying had no effect. Qualitatively, some reported: "I want to have friends. But they think I'm a zombie because of my skin," and "I get angry and hate

myself." Two adolescents reported experiencing an allergic reaction because of this bullying.

The majority of children and adolescents who experienced some kind of bullying reported to someone that it happened. This was most often their parents (n = 32), followed by school teachers (n = 24) and friends (n = 13). Thirty-five percentage of respondents showed concern that they or their children may be bullied or teased because of food allergy in future.

Many parents found great value in involving their child and completing these questions. Through both written final comments and informal verbal communications to researchers, parents thought that the questionnaire was very beneficial to open a discussion on bullying. In addition, after completing the questionnaire independently, many older children and adolescents felt comfortable to discuss their experiences of bullying with their families.

4 | DISCUSSION

Bullying in the general Australian school population has been reported to occur in 27% of children. In this study, 41.9% of children and adolescents with food allergies reported having been the target of bullying, 1.5 times higher than in the general school population.²³ As with other adolescents with chronic health conditions,²⁴ those with food allergies are more open to teasing and social exclusion than their peers without food allergies. A recent study by Muraro

FIGURE 1 "Why do you think you get bullied or teased?"/"Why do you think your child has been bullied or teased?" (n = 37)

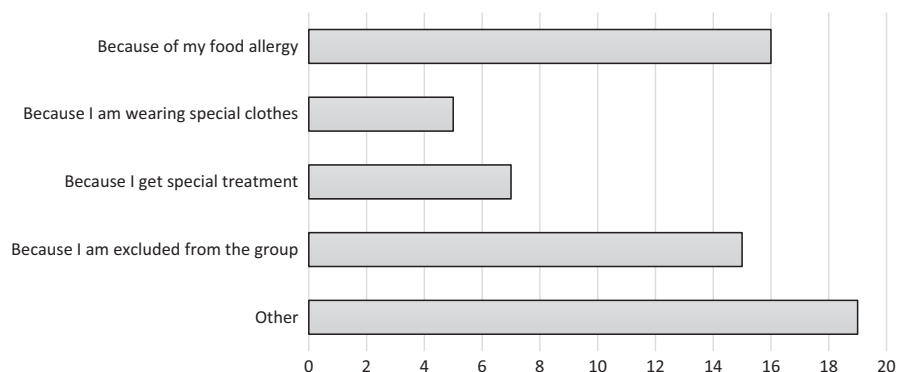
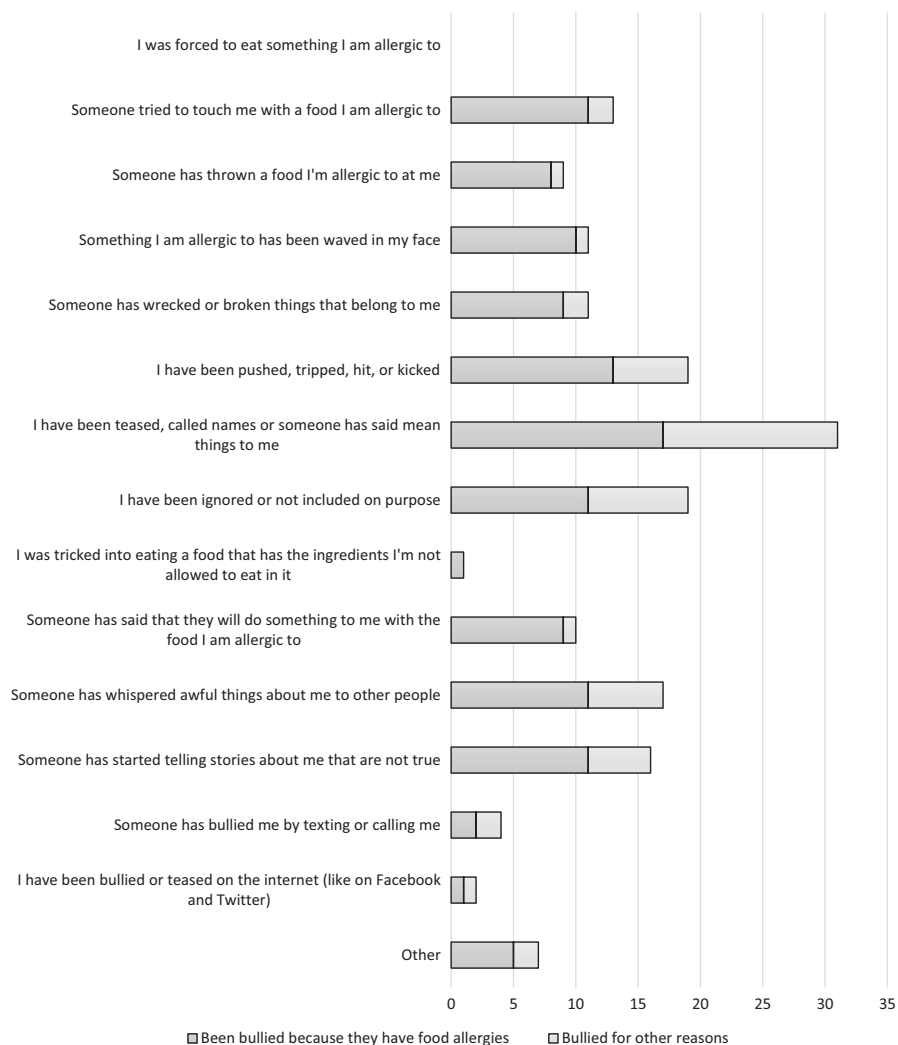


FIGURE 2 Forms of bullying experienced by children and adolescents with food allergies. Stratified into those who have been bullied because they have food allergies (n = 21) and those who are bullied for other reasons (n = 17)



et al¹⁷ found that Italian food-allergic school children had a probability of being bullied approximately 2 times higher than healthy peers. This was determined by examining healthy age- and sex-matched school children as controls.¹⁷

Recent international data showed the high prevalence of student reported bullying in Australia compared to other countries worldwide. In four separate 2015 studies,^{25,26} Australian students reported being bullied on a weekly and monthly basis more often than the international averages. Australia ranked 9th of 49

and 8th of 47 in the prevalence of bullying in Year 4 students. Internationally, bullying was more common in Year 4 students compared to Year 8.^{25,26} These results contrast our observations of a higher prevalence of bullying in older and adolescent children with food allergy.

In a variety of international studies exploring bullying in children with allergies, rates of children and adolescents reported being bullied solely because of their food allergy range from 16.2% to 45.0%, with reports of up to 26% experiencing multiple episodes

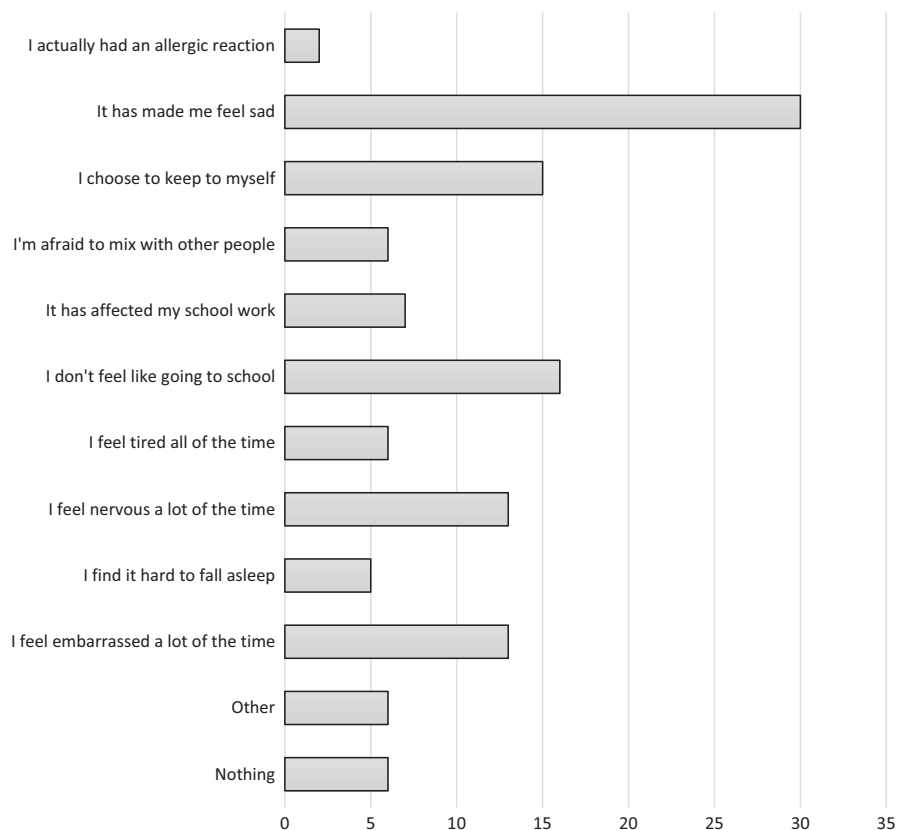


FIGURE 3 “What has happened because of the bullying? (Choose the ones that are similar to your child’s experiences)”/“What has happened to you because of the bullying?” (n = 38)

of bullying.²⁰ This study demonstrates that the problem is just as prevalent in Australia with 22.6% being bullied because of their food allergies and 21.5% on multiple occasions.

The age of our population was comparable to many international studies with a combination of reporting by children and parents.^{11,15,20} This method of reporting differed from the longitudinal Shemesh et al and Annunziato et al studies which simultaneously measured pairs of children with food allergies and their parent’s perceptions.^{12,13}

The process of measuring bullying is difficult, and our study was limited in using only self-reporting and parental reports with no other verification. Self-reporting can introduce bias as individuals may have different perceptions of what constitutes bullying.²⁷ Youth self-reports have previously been criticized for accuracy, and some studies of bullying have included supplementation with peer nomination, school records or parent reports.²⁸ A 2016 study by Polloni et al examined bullying in students with food allergies also from a teacher’s perspective. They demonstrated that there was a large discrepancy between the awareness and understanding of bullying from students with food allergies compared to the perspectives of teachers.¹⁹

Limiting factors in our study include the small sample size and the possibility of bias.

Children and adolescents who are affected by bullying may be more interested in completing the questionnaire. Alternatively, those who have been bullied may be more unwilling or hesitant to report some of their experiences. Despite these limitations, our

survey adds to the evidence that having a food allergy is a risk of being bullied, and therefore, individuals with food allergies may require additional resources and support in addressing this prevalent issue.

Further limitations to our study were exclusion of parents and children where English was not their first language. This is important as these children may be at greater risk of bullying than their English-speaking counterparts. In addition, as patients were recruited through allergy clinics, they likely represent patients with more severe allergy symptoms.

Beyond being bullied because of food allergies, respondents brought up concerns that coexisting atopic dermatitis may also increase the risk of bullying. There have been previous studies in children with atopic dermatitis also, discussing experiences and feelings of social isolation, peer-group rejection and teasing and bullying.²⁹ Future studies could look to further characterize the significance of other allergic comorbidities to bullying in these individuals with food allergies. In addition, this could be furthered by examining the relationship between allergy severity and bullying.

This study exemplifies many ways in which bullying can affect children and adolescents with food allergies. Bullying is a risk factor for anxiety, depression, school avoidance and social rejection, and hence, questions were included in the questionnaire to explore these concerns.²² Victims of bullying can also experience a loss of self-esteem and feelings of insecurity. This lack of security may be related to school avoidance and issues with learning ability and concentration levels.³⁰

We believe that there is a potential for this questionnaire to be used as a tool to initiate conversation in a safe and non-threatening manner. Whilst there has been significant support in minimizing bullying thus far, further research and discussion will promote evidence-based practices that may result in large scale implementation of interventions.

To explore paths for future interventions, a 2006 qualitative study explored strategies that adolescents and young adults with food allergies believed would make living with food allergies easier. Sixty-eight percentage of 13- to 17-year-olds thought educating other students would be helpful for their own lives. Many participants reported that not all their friends were aware of their food allergies. Confidence in communication about food allergies may have been impacted by the fact that 62% of the cohort reported experiences of teasing about their food allergies.¹⁰

Open discussion and education with children as well as teachers about allergies has been well supported in other studies. An Italian study, examining the knowledge, thoughts and feelings of school personnel on allergies found that 53% thought that allergic students suffered no consequences of their food allergy at school.³¹ Whilst our study exemplifies that this is not the case, anecdotal responses by parents in our study support the belief that education of friends, classmates and teachers about allergies played a role in the protection from bullying. Both a whole-school approach and close mentoring for bullying perpetrators have been shown to have a positive impact on bullying.²²

It is the role of clinicians, patient support organizations, schools and communities to minimize and overcome bullying in children and adolescents with food allergies. Strategies and interventions need to be implemented to protect children and adolescents from allergic reactions and experiences of teasing and bullying.

5 | CONCLUSION

This Australian study highlights that as with children in other parts of the world, those with food allergy are subject to a higher degree of bullying than the general Australian school-aged population. Children and adolescents who are bullied are at risk of development of depression, anxiety and other mental health problems. The identified risk of bullying for children with food allergies indicates a significant social problem that requires addressing to positively assist those living with food allergies.

CONFLICT OF INTEREST

The authors have no conflict of interests to report in association with this paper.

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