

REVIEW ARTICLE

Bullying and quality of life in children and adolescents with food allergy

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Abstract: Food allergy is an increasing phenomenon in Australia, with most recent reports of food allergy occurring in 1 in 12 children. A number of studies have demonstrated that children and adolescents with food allergies experience a decreased quality of life across a number of domains. More recent evidence suggests that this population also experiences an increased occurrence of bullying compared to similar school-aged children. Some individuals have reported being bullied because of their allergies, whilst others have reported specific allergy-related-bullying, such as being touched with foods that they are allergic to or having their food being intentionally contaminated with an allergen. Where there may be a risk of severe anaphylaxis, this is of great concern. This article reviews the current literature on bullying in populations of children and adolescents with food allergies. Several papers worldwide have investigated this, providing evidence of its occurrence in North America, Canada, Italy and Japan.

Key words: adolescent; allergy; bullying; child; teasing.

Introduction

Food allergy is a common occurrence with more than 10% of infants and about 8% of children affected.^{1,2} Research in paediatric populations reveals a significant decrease in quality of life (QoL) reported by food allergic individuals^{3–9} with the majority of concerns of children and adolescents involving their social situations and interactions.¹⁰ At various times, children with food allergies need to reveal their condition and this is particularly so in the school setting.

Key Points

- 1 Recent research shows that food allergy affects 1 in 12 children in Australia and is increasing.
- 2 It has been well observed internationally that bullying does exist in children and adolescents with food allergies, and it occurs more often than in similar school-aged children.
- 3 More than 30% of children and adolescents have reported being bullied solely because of their food allergy in some studies, with reports of up to 25.8% experiencing multiple episodes of bullying. Whilst this is the case, no research has been done on bullying in children and adolescents with food allergies in Australia.

A small number of QoL studies^{3,9} have found that bullying of individuals with food allergies is occurring. These authors suggest that this problem deserves more widespread attention and that these children with food allergies should be questioned about bullying. Several studies^{11–18} worldwide have investigated bullying in food allergic individuals, providing evidence for its occurrence in North America, Canada, Italy and Japan. More than 30% of children and adolescents have reported being bullied solely because of their food allergy in some studies,¹² with reports of up to 25.8% experiencing multiple episodes of bullying.¹⁷ From an Australian perspective, there is a paucity of information on this subject.

Impact of food allergy diagnosis on health-related QoL

A diagnosis of food allergy has significant implications for the child or adolescent and for the wider family circle with reduced scores in a number of domains in QoL surveys.

The diagnosis of food allergy can have a significant impact on the child and his/her family including restrictions on family activities involving socialising and eating out. Food allergies are associated with high levels of distress and worry in the parent or guardian concerning the child's condition.⁵ In one particular study, 34% of food allergic families reported that food allergy had an impact on school attendance, with 10% of parents choosing to home school their food allergic children because of the risk of exposure to potential food triggers.⁶

A food allergy diagnosis may lead to social isolation of the child for a number of reasons, ranging from separation from peers at lunchtime at school to home schooling by parents. Some children and families may restrict social activities including attendance at

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parties.⁶ Thus, children with food allergy may be at an increased risk of social-emotional and developmental difficulties, increased social isolation and concomitant feelings of depression or social anxiety.¹⁹

Adolescents with food allergy report social isolation as the most disturbing aspect of their disease.⁸ In another study, younger children with food allergy were concerned about having to explain to others that they have a food allergy.⁴

Bullying

Bullying has been defined as consisting of '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'.²⁰ Some examples of each of these four forms of bullying include: name calling and threats, hitting and punching, ostracising, and hiding or damaging possessions.

Gladden *et al.*²¹ and Gredler²² have identified and recommended five specific components required in the definition of bullying: power imbalance, intention to harm, victim experiences harm, repetition and aggressive behaviours.²³

Previous research has documented that bullying is a risk factor for anxiety, depression, suicidal ideation, school avoidance and social rejection.²⁴ 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 level.²⁵

Bullying in the Australian population

Approximately one in four (27%) Australian students aged 8–14 report being bullied, from primary to high school. Hurtful teasing was reported as the most common bullying behaviour, closely followed by lies. Peers are present in 87% of bullying interactions, mostly as onlookers who do nothing to help the victim.²⁶

In the Australian Bureau of Statistics (2012) report, of those who had been bullied, 34% had reported that their school attendance had been affected and 17% reported an impact on their progress at school. Furthermore, 34% reported having

trouble making friends, playing with other children or taking part in sport/leisure activities at school as a result of the bullying behaviour.²⁷

Depending on the environment, some groups may be at an increased risk of experiencing bullying – such as lesbian, gay, bisexual or transgender (LGBT), those with disabilities, and those who are socially isolated.²⁷

Bullying in people with chronic health conditions

Adolescents with chronic health conditions are more likely to be victims of bullying, and victims of multiple forms of bullying. Rates of teasing and social exclusion are significantly higher in this group than in the general population.²⁸

Some previous studies have shown that other atopic conditions, particularly atopic dermatitis, in contrast to food allergy, do not appear to have any substantial teasing or harassment as a result of the disease.^{29,30} Some academics believe this may be due to the lifestyle modifications that are required to accommodate those with food allergies, such as the need to be extremely diligent; advice to exclude certain foods from the playground and canteen; and the need to have emergency treatment on hand.¹¹

Bullying in people with food allergies

There are no published studies to date which have examined bullying in Australian food allergic cohorts. Several international papers^{11–18,31} explore the distress and anxiety experienced by those living with food allergies as a result of teasing and harassment or bullying. In a study from a cohort of 251 families, 32% of surveyed children had reported being bullied due to food allergy at least once.¹² A follow-up study showed that QoL was reduced for those who were bullied: for those newly bullied QoL decreased, and where bullying decreased QoL improved.¹³

Lieberman *et al.*¹¹ used a structured questionnaire to determine the characteristics of bullying and teasing of children with food allergies. A total of 50% of respondents reported experiences of bullying. Comparatively, a similar school age cohort had an incidence of about 17%.¹¹ There was a variation in the reasons for

Table 1 Bullying in children and adolescents with food allergy, including subset of participants recalled for follow-up longitudinal study

Paper	Country of population group	Age of study group	Number of participants in test group	Control populations	Instrument to measure bullying	Questionnaire completed by	Reports of any bullying (%)	Reports of multiple episodes of bullying (%)	Bullying because of food allergy (%)
Shemesh <i>et al.</i> (2013)	North America	8–17 years	251	No	Revised Olweus Bully/Victim Questionnaire	Children	45.4†	ND	31.5
Shemesh <i>et al.</i> (2013)	North America	Parental report of child	251	No	Revised Olweus Bully/Victim Questionnaire	Parents	36.3	ND	24.7
Annunziato <i>et al.</i> (2014)	North America	8–17 years	124	No	Revised Olweus Bully/Victim Questionnaire	Children	ND	9.9‡	29.0

†Compared to an estimated population control of approximately 17–35%. ‡More than twice a month. ND, no data.

Table 2 Bullying in children and adolescents with food allergies studies published as an abstract

Paper	Country of population group	Age of study group	Number of participants in test group	Control populations	Instrument to measure bullying	Questionnaire completed by	Specific types of bullying	Reports of multiple episodes of bullying (%)	Food allergy specific bullying (%)
Morris <i>et al.</i> (2012)	North America	6–12 years	18	No	Use of validated questionnaires	Children or parents	NA	ND	33.0
Lin and Sharma (2014)	North America and Canada	11–22 years	84	No	Online questionnaire assessing food allergy clinical history, behaviours, beliefs and social factors	Adolescents	Teasing Physical forms	16† 8†	71 45.0

†More than once or a few times; NA, not applicable; ND, no data.

bullying, such as being bullied simply because of their food allergy; having to carry or wear medications; or having special treatment. There were both non-physical (taunts) and physical forms of bullying (allergen waved in face), with the former more common. Respondents mostly reported feelings of sadness or depression and embarrassment or humiliation as a result of the bullying.

Although no individuals reported experiencing an allergic reaction due to the act of bullying, the possibility that this risk exists is very concerning. This is particularly so in cases of children being touched with an allergen or their food intentionally being contaminated. Of great concern is that of those who reporting bullying, 21% described an act done by a teacher or other member of school staff.¹¹

Shemesh *et al.*¹² used a revised Olweus Bully/Victim Questionnaire to test the hypotheses that: bullying is common among food allergic patients and would be reported by more than 30% of respondents; parent and child reports of bullying of the child would not be consistent; and repeated bullying would be associated with lower QoL and increased distress in both parents and children. In their study, there were differences between reports of bullying between children and their parents. Two-hundred and fifty-one patient and parent pairs completed the surveys, 45.4% of the children reported being bullied or harassed for any reason, and 31.5% specifically due to food allergy. This was compared to 36.4 and 24.7% for parental reports, respectively. Results showed that most children who were bullied about their food allergy reported that they had told someone about what happened (87%). However, parents knew about child-reported bullying in only about 52% of cases.¹² The major limitation of this study was the lack of control group of non-food allergic individuals with similar demographics.

Annuziato *et al.*¹³ commenced a longitudinal evaluation of food allergy-related bullying. This involved the 251 patient and parent pairs from the Shemesh survey completing a second identical questionnaire, approximately 1 year later. Questionnaires were returned by only 49% of the original respondents, and there was a similar number of participants who reported bullying due to food allergies (29%). Results from these studies are shown in Table 1.

A 2012 study on bullying and teasing in children with food allergy in Mississippi, was published as an abstract reporting results from eighteen questionnaires. Whilst they report only a 'minority' of patients reporting bullying, one third of respondents (6/18) experiencing bullying, a figure that is very concerning.¹⁴

Lin and Sharma conducted a study on teasing and bullying among adolescents with food allergy, which showed great prevalence, with 71% of respondents reported having been teased by other children because of their food allergy and 45% having been bullied (Table 2).¹⁵ This startling percentage was identified by the question: 'Other kids try to make me eat food I am allergic to'. Bullying was also associated with various emotional characteristics in these adolescents, with feelings of embarrassment, feeling different than everyone else, and also feeling left out because of their food allergies.³²

As discussed by Oppenheimer and Bender¹⁶ to really assess the effect of bullying and food allergy, a comparison is needed between the prevalence of bullying in food allergic and non-allergic children to better understand the scope of this problem.

Table 3 Published full articles on bullying in children and adolescents with food allergies

Paper	Country of population group	Age of study group	Number of participants in test group	Control populations	Instrument to measure bullying	Questionnaire completed by	Reports of any bullying (%)	Reports of multiple episodes of bullying (%)	Bullying because of food allergy (%)
Lieberman <i>et al.</i> (2010)	North America	Ranging from <4 to >25 years of age	353	No	Self generated questionnaire	Mostly by parents	24.1	20.7	19.0
Lieberman <i>et al.</i> (2010)	North America	5+ years†	262	No	Self generated questionnaire	Mostly by parents	35.2	ND	ND
Muraro <i>et al.</i> (2014)	Italy	8–19 years	120	Yes‡	Olweus Bully/Victim Questionnaire	Children	60.0§	25.8¶††	30.0‡‡\$\$\$
Yamamoto-Hanada <i>et al.</i> (2015)	Japan	6–12 years	117	No	Self generated questionnaire	Parents	ND	ND	16.2

†When excluding those under 5 years of age, as they would be unlikely to experience bullying. ‡120 participants matched to patients for sex and age. §Compared to a control of 31.7%. ¶Participants reported 'sometimes' or 'more often'. ††Compared to a control of 8.3%. ‡‡Inclusive of the 5.8% of participants who reported food allergy specific bullying as 'sometimes' or 'more often'. \$\$\$Food allergy-related bullying. ND, no data.

Such a study examining a population of schoolchildren in Italy has since been published.¹⁷ Bullying was categorised into food allergy-related and general. A strength of this study was its wide demographic base: a combination of urban, suburban and rural children, matching food allergic children to equivalent healthy controls of similar age and demographic. Among allergic patients, 60% had been a victim of some bullying in last 2 months compared to a control (non-allergic) group reporting a frequency of 31%. So, food allergic students had a probability of being bullied approximately two times higher than non-allergic peers.¹⁷ On this basis, food allergic children should be included in the category of students at high risk of bullying. In regards to food allergy-related bullying specifically in this group 30% of patients reported that they have been bullied at least once (Table 3). They found no significant associations of bullying with adrenaline prescription, comorbidities and the number of excluded foods. These Italian researchers believed that questions about bullying experiences with peers should be included routinely during visits with patients and parents.¹⁷

A recent paper from Japan has also identified bullying in food allergic children and also characterised the large discrepancy in knowledge of food allergies between parents with children with and without food allergy.¹⁸ Among care givers with children with food allergies, 16.2% reported observing an experience of bullying, harassment or school refusal because of food allergy. What was interesting also was that only three of the 296 non-food allergy care givers had seen a child experience bullying, harassment or school refusal because of food allergy. This highlights the lack of awareness and knowledge in the general population. A limitation in this study is the lack of background information regarding the care givers themselves, in particular history of allergy. This confounder could potentially impact the results in both groups, as care givers take on their own personal experiences of allergies.

Interventions for food allergic bullying

A literature search revealed no publications on interventions for bullying in children or adolescents with food allergies. Whilst various interventions have been reviewed for bullying in general, bullying specific to food allergy presents a unique concern, which requires its own forms of intervention. A recent review discussed interventions for bullying in medically fragile youth, and recommendations for medical practitioners.³³ The recommendations included communication by medical practitioners to patient's teachers regarding the elevated risks and potential classroom interventions and encouraging parents to advocate for children's school needs.

Conclusion

There is evidence that both food allergies and bullying are common and individually have a significant impact on children and adolescents. Recent research worldwide has collectively examined these two entities and identified an increased prevalence of bullying in food allergic children, in comparison to the general population. Whilst these studies provide insight into this issue from countries such as North America, Canada, Italy and Japan, this is yet to be explored in an Australian context.

Multiple Choice Questions

1 Food allergies can have a significant impact on the family in all of the following areas 'except' for:

- a) Meal preparation
- b) Family social activities
- c) Parental employment
- d) School activities
- e) Family relations

Answer: c. Items that comprised the subscales of parental employment and finances and family relations were not as significantly affected by childhood food allergy. The percentage of care givers who reported impact ratings of 5 or greater ranged from 5 to 28% and 17 to 19%, respectively.⁶ (a), (b), (d) and (e) are incorrect. The total number of food allergies experienced by a child has been shown to be significantly positively associated with a greater impact on meal preparation, family social activities, family relations, stress and free time, school activities, autonomous social activities and employment and finances.⁶

2 Which of the following statements on bullying is true?

- a) Bullying is a risk factor for anxiety, depression, seizures, school avoidance and social rejection
- b) Approximately one third of those who have been bullied in Australia reported their school attendance to be affected
- c) Recent research has found that only victims of bullying were more likely to have negative health, financial, behavioural and social outcomes in adulthood
- d) Adolescents with chronic health conditions are as likely to be victims of bullying as the general population
- e) Bullying interactions generally occur in an isolated environment with only the bully/bullies and the victim present

Answer: b. Furthermore, 34% reported having trouble making friends, playing with other children or taking part in sport/leisure activities at school as a result of the bullying behaviour.²⁷ (a) is incorrect. Whilst epilepsy may be a cause of bullying, bullying is not a risk factor for seizures. Previous research has documented that bullying is a risk factor for anxiety, depression, suicidal ideation, school avoidance and social rejection.²⁴ (c) is incorrect. Involvement with bullying in any role was predictive of negative health, financial, behavioural and social outcomes in adulthood.²⁷ (d) is incorrect. Adolescents with chronic health conditions are more likely to be victims of bullying, and victims of multiple forms of bullying. Rates of teasing and social exclusion are significantly higher in this group than in the general population.²⁸ (e) is incorrect. Peers are present in 87% of bullying interactions, mostly as onlookers who do nothing to help the victim.²⁶

3 In Muraro *et al.*'s (2014) study on the comparison of bullying of food allergic versus healthy schoolchildren in Italy, the number of children who reported food allergy-related bullying was closest to:

- a) 15%
- b) 20%
- c) 25%
- d) 30%
- e) 35%

f) 35%

Answer: d. About 24.2% of food allergic schoolchildren reported food allergy-related bullying; 5.8% reported sometimes or more often.

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