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Original Article

Quality of life assessment in pediatric patients with food allergy

Análise da qualidade de vida em pacientes pediátricos com alergia alimentar

Analice Val de Paula[1], Lídia Lacerda Guimarães[1], Leticia Luisa Mattos[2], Luiza Elian Reis[2], Érica Godinho Menezes[2], Wilson Rocha Filho[1]

ABSTRACT

Background: Food allergy can affect the well-being of patients and their families. **Objective:** To investigate the quality of life of patients with food allergy followed up at a multidisciplinary treatment center using a validated questionnaire. **Methods:** Patients aged 0 to 18 years followed up at the Food Allergy Outpatient Clinic of João Paulo II Pediatric Hospital between 2012 and 2017 were invited to answer a quality-of-life assessment questionnaire for information on type of allergy, clinical presentation, presence of atopic dermatitis, prescription of an epinephrine kit, duration of follow-up at the clinic, and duration of follow-up with a dietitian. **Results:** A total of 77 patients were included, with a mean age of 3.38 years. Most participants rated their quality of life as fair (43%) and had less than 6 months of outpatient follow-up (52%). From those meeting with a dietitian, 52.4% had less than 6 months of follow-up. Immunoglobulin E (IgE)-mediated allergy was identified in 51% of participants, and 66.66% of them required an epinephrine kit. There was no statistically significant association between quality of life and the study variables. **Conclusion:** A quality-of-life assessment questionnaire is an important tool for evaluating patients with food allergy, allowing us to profile these patients and to act individually on issues that might negatively impact their daily lives.

Keywords: Child, food hypersensitivity, quality of life, child health.

RESUMO

Introdução: A alergia alimentar pode afetar o bem-estar dos pacientes e de seus familiares. Esse trabalho busca, por meio de questionário validado, investigar a qualidade de vida desses pacientes, acompanhados em um centro de tratamento multidisciplinar. **Métodos:** Pacientes entre 0 e 18 anos, monitorados no Ambulatório de Alergia Alimentar do Hospital Infantil João Paulo II entre 2012 e 2017, foram selecionados para responder a um questionário de avaliação de qualidade de vida com coleta de informações acerca do tipo de alergia, sua apresentação clínica, presença de dermatite atópica, prescrição ou não de *kit* de Adrenalina®, tempo de acompanhamento no serviço e tempo de acompanhamento por nutricionista. **Resultados:** Foram incluídos 77 pacientes, com idade média de 3,38 anos, em sua maioria revelando qualidade de vida regular (43%) e com acompanhamento no Serviço inferior a seis meses (52%). Daqueles acompanhados por nutricionista, 52,4% o faziam há menos de seis meses. Alergia IgE mediada foi identificada em 51% dos sujeitos da pesquisa, com 66,66% dos mesmos sob prescrição de *kit* de Adrenalina®. Não houve associação estatisticamente significativa entre qualidade de vida e as variáveis analisadas. **Conclusão:** O questionário de qualidade de vida é um importante instrumento de avaliação de pacientes com alergia alimentar, permitindo traçar o perfil dos mesmos e atuar individualmente nos quesitos que impactam negativamente o seu dia a dia.

Descritores: Criança, hipersensibilidade alimentar, qualidade de vida, saúde da criança.

1. Hospital Infantil João Paulo II - Belo Horizonte, MG, Brazil.
2. Centro Universitário de Belo Horizonte - UniBH - Belo Horizonte, MG, Brazil.

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Introduction

Food allergy, an abnormal immune response to food proteins, may be immunoglobulin (IgE)-mediated, partially IgE-mediated, or non-IgE-mediated.[1,2] It affects more children than adults and its prevalence has been increasing worldwide in recent years, estimated at approximately 6% in children < 3 years of age and 3.5% in adults.[3] Patients with this condition are at risk of developing serious reactions that, if not treated properly, can be fatal.

Restricting the intake of allergenic food proteins is essential for treatment, which requires discipline on the part of the patient and the patient's family. For example, labels on manufactured products must be carefully read in light of the possibility of cross-contamination, and some school and social activities involving food intake must be restricted.[4] Furthermore, children with anaphylaxis should carry adrenaline kits, and their guardians should receive adequate training in their use. Thus, diagnosis of a food allergy can compromise the quality of life of patients and their families, and psychiatric disorders can result.[5-7] Such outcomes are especially prevalent in school-age children.[8]

Many quality of life questionnaires have been developed for children and adolescents with food allergies, seeking a better understanding of the impact of diagnosis and treatment in the daily lives of patients and their families.[9-12] In this context the present study was developed, aiming to investigate the quality of life of patients assisted at a reference center for multidisciplinary treatment of food allergies by applying a validated questionnaire.

Methods

Study design and population

This cross-sectional, descriptive study was conducted at the Food Allergy Clinic of the Hospital Infantil João Paulo II – Fundação Hospitalar do Estado de Minas Gerais between 2012 and 2017. This center offers care by a multidisciplinary team of doctors from different specialties (pediatricians, allergists, pediatric gastroenterologists, dermatologists), nurses, and nutritionists.

We included patients ≤ 18 years of age whose food allergy diagnosis was confirmed through clinical history, showing an irrefutable cause and effect relationship, in addition to reproducible symptoms from repeated exposure to the suspected food. When necessary, an immediate skin test was performed and specific IgE dosage for the food was determined, or an oral provocation test was performed. Patients with non-IgE-mediated food allergies were included when they had a reproducible and irrefutable clinical history with the food in question. When necessary, these patients were given an oral provocation test to confirm the diagnosis. Eosinophilic esophagitis was confirmed by macroscopic findings from an upper digestive endoscopy, complemented by histology showing ≥ 15 eosinophils per field. Data were collected from all patients (both personal and disease-related) using a specific form.

Patients with a history of anaphylaxis received an adrenaline kit and their parents/ caregivers were trained in its correct handling. Patients and/or family members/ caregivers who were unable to adequately fill out the questionnaires, as well as patients with congenital and/or systemic diseases that could compromise their quality of life, were excluded from the study.

Quality of Life Questionnaire

Standardized questionnaires for assessing quality of life in food allergy patients, originally developed in English by DunnGalvin et al.,[9] were applied to patients and their parents, caregivers or legal guardians, with the same person responding throughout the study. First, we validated Portuguese versions of the questionnaires at our service. During the translation and adaptation process, the questionnaires were filled out by the same caregiver on 2 occasions, with a maximum interval of 1 week between applications. Agreement > 90% was found between the applications. After this, the questionnaires were applied every 3 months. Questionnaires for patients ≤ 12 years of age were only filled out by parents/ caregivers, while those for patients 13-18 years of age were filled out partly by the patients and partly by their parents/caregivers.

In general terms, the questions addressed 3 domains involved in the disease: emotional impact, food anxiety, and social and dietary limitations. Each item presents options for quantifying the impairment of the patient's quality of life on a scale from 1 (none) to 6 (extreme). The final result is the mean of the sum of the mean values obtained in each domain. Values 0-2, 3-4, and 5-6 indicate good, average, and poor quality of life, respectively (Appendices 1, 2 and 3).

Statistical analysis

The data were analyzed using IBM SPSS Statistics 16.0. The following variables were considered: quality of life (poor, average, or good), follow-up time at our service, follow-up with a nutritionist (and duration), allergy type (IgE-mediated, non-IgE-mediated, or mixed), diagnosis according to the clinical presentation of the allergy, and adrenaline kit prescription. The statistical tests included chi-square, Student's *t*-test, and the Kruskal-Wallis test. $P < 0.05$ was considered statistically significant.

Results

Initially, 90 patients were selected, of whom 13 (14.4%) were excluded either due to clinical follow-up failure or incorrect questionnaire completion. Thus, the study was based on data from 77 patients, of whom 41 (53.2%) were male and 36 (46.8%) were female, with a mean age of 3.38 years (Figure 1).

Quality of life (Table 1) was analyzed in the context of the following variables: follow-up time at our service, follow-up with a nutritionist (and duration), classification and clinical presentation of allergy, and prescription or not of an adrenaline kit (Tables 2 and 3). Regarding patient follow-up time (Table 4), 22 (28.5%) were monitored for > 12 months, 15 (19.5%) for 6-12 months, and 40 (52%) < 6 months. Among the latter group, after diagnosis and follow-up, the quality of life was good, average, and poor in 19 (47.5%), 15 (37.5%), and 6 (15.0%) patients, respectively. Of the 15 patients followed from 6-12 months, quality of life was good, average, and poor in 6 (40.0%), 6 (40.0%), and 3 (20.0%), respectively. Finally, of the 22 patients followed up > 12 months, the quality of life was good, average, and poor in 6 (27.3%), 12 (54.5%), and 4 (18.2%), respectively. The association between quality of life and follow-up time was not significant ($p = 0.602$).

Of the total sample, 42 patients (54.5%) were followed up by a nutritionist for variable periods (Table 5): 22 for < 6 months (52.4%); 9 for 6-12 months (21.4%); 11 for > 12 months (26.2%). The quality of life of these patients was good, average, and poor in 19 (45.2%), 18 (42.9%), and 5 (11.9%), respectively. There was no significant association ($p = 0.382$) between quality of life and follow-up with a nutritionist, or between quality of life and follow-up time with a nutritionist (Table 6). Of the 22 patients followed up ≤ 6

Table 1
Quality of life in the study population

Classification	Frequency	
	n	%
Good	31	40.3
Average	33	42.8
Poor	13	16.9

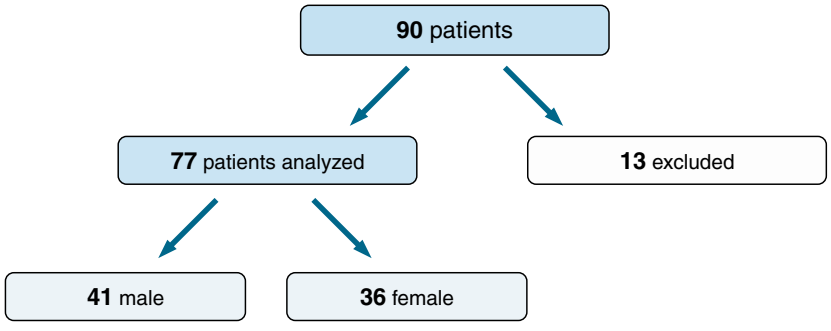

Figure 1
Patient selection flowchart

Table 2
Description of the population studied

Characteristics	n	%
Follow-up with nutritionist		
Yes	42	54.5
No	35	45.5
Adrenaline kit		
Yes	26	33.8
No	51	66.2
Atopic dermatitis		
Yes	31	40.8
No	45	59.2
No data	1	–
Follow-up time at service		
< 6 months	40	52
6-12 months	15	19.5
>12 months	22	28.5
Follow-up time with nutritionist		
< 6 months	22	52.4
6-12 months	9	21.4
>12 months	11	26.2
Not applicable	35	–
Allergy type		
IgE-mediated	39	50.6
Non-IgE-mediated	20	26.0
Mixed allergy	18	23.4
Clinical presentation of allergy		
Proctitis	12	15.6
FPIES	8	10.4
Eosinophilic esophagitis	3	3.9
IgE-mediated allergy	39	50.6
Atopic dermatitis as a single presentation	15	19.5

FPIES = Food Protein Induced Enterocolitis Syndrome.

Table 3
Comparison between follow-up with a nutritionist, adrenaline kit prescription, atopic dermatitis, follow-up time at the service, follow-up time with a nutritionist, allergy type, clinical presentation of the allergy, and quality of life (QOL) classification

Characteristics	Good QoL	Average QoL	Poor QoL	p-value
Follow-up with nutritionist				
Yes	19 (45.2%)	18 (42.9%)	5 (11.9%)	0.382
No	12 (34.3%)	15 (42.9%)	8 (22.8%)	
Adrenaline kit				
Yes	8 (30.8%)	13 (50%)	5 (19.2%)	0.503
No	23 (45.1%)	20 (39.2%)	8 (15.7%)	
Atopic dermatitis				
Yes	13 (41.9%)	13 (41.9%)	5 (16.2%)	0.934
No	17 (37.8%)	20 (44.4%)	8 (17.8%)	
Follow-up time at service				
< 6 months	19 (47.5%)	15 (37.5%)	6 (15%)	0.602
6-12 months	6 (40%)	6 (40%)	3 (20%)	
> 12 months	6 (27.3%)	12 (54.5%)	4 (18.2%)	
Follow-up time with nutritionist				
< 6 months	13 (59.1%)	8 (36.4%)	1 (4.5%)	0.257
6-12 months	3 (33.3%)	4 (44.5%)	2 (22.2%)	
>12 months	3 (27.2%)	6 (54.6%)	2 (18.2%)	
Allergy type				
IgE-mediated	12 (30.8%)	19 (48.7%)	8 (20.5%)	0.082
Non-IgE-mediated	11 (55%)	9 (45%)	0 (0)	
Mixed allergy	8 (44.4%)	5 (27.8%)	5 (27.8%)	
Clinical presentation				
Proctitis	7 (58.4%)	5 (41.6%)	0 (0)	0.232
FPIES	4 (50%)	4 (50%)	0 (0)	
Eosinophilic esophagitis	1 (25%)	0 (0)	2 (75%)	
IgE-mediated allergy	12 (30.8%)	19 (48.7%)	8 (20.5%)	
Atopic dermatitis	7 (46.6%)	5 (33.4%)	3 (20%)	

FPIES = Food Protein Induced Enterocolitis Syndrome.

Table 4
Relationship between follow-up period and quality of life (QoL)

	< 6 months	6-12 months	>12 months
Good QoL	19 (47.5%)	6 (40%)	6 (27.3%)
Average QoL	15 (37.5%)	6 (40%)	12 (54.5%)
Poor QoL	6 (15%)	3 (20%)	4 (18.2%)
Total	40 (52%)	15 (19.5%)	22 (28.5%)
P-value		0.602	

months, quality of life was good, average, and poor in 13 (59.1%), 8 (36.4%), and 1 (4.5%) respectively. In those followed up 6-12 months, quality of life was good, average, and poor in 3 (33.3%), 4 (44.5%), and 2 (22.2%), respectively. Finally, among those followed up > 12 months, quality of life was good, average, and poor in 3 (27.3), 6 (54.6%), and 2 (18.2%), respectively (Table 5).

IgE-mediated allergy was identified in 39 patients, among whom quality of life was good, average, and poor in 12 (30.8%), 19 (48.7%), and 8 (20.5%), respectively. Of the 20 patients with non-IgE-mediated allergy, quality of life was good and average in 11 (55.0%) and 9 (45.0%), respectively. Finally, among the 18 patients with mixed allergy, quality of life was good, average, and poor in 8 (44.4%), 5 (27.8%),

Table 5
Relationship between follow-up period with a nutritionist and quality of life (QoL)

	< 6 months	6-12 months	>12 months
Good QoL	13 (59.1%)	3 (33.3%)	3 (27.2%)
Average QoL	8 (36.4%)	4 (44.5%)	6 (54.6%)
Poor QoL	1 (4.5%)	2 (22.2%)	2 (18.2%)
Total	22 (52.4%)	9 (21.4%)	11 (26.2%)
Total		42 (54.5%)	
P-value		0.257	

and 5 (27.8%), respectively. The association between quality of life and allergy type was not significant (Table 7).

Regarding clinical presentation of the allergy, among the 12 patients with proctitis (15.6%), quality of life was good in 7 (58.4%) and average in 5. Of the 8 patients with food protein-induced enterocolitis syndrome (10.4%), quality of life was good in 4 (50%) and average in 4 (50%). Of the 3 patients with eosinophilic esophagitis (3.9%), quality of life was good in 1 (25%) and poor in 2 (75%). Of the 39 patients with IgE-mediated allergy (50.6%), quality of life was good, average, and poor in 12 (30.8%), 19 (48.7%), and 8 (20.5%), respectively. Of the 31 patients with atopic dermatitis (40.2%), quality of life was good, average, and poor in 13 (41.9%), 13 (41.9%), and 5 (16.2%), respectively. Of the 15 patients in whom atopic dermatitis was the only manifestation (19.5%), quality of life was good, average, and poor in 7 (46.68%), 5 (33.4%), and 3 (20%), respectively. There was also no significant association between quality of life and clinical presentation of food allergy (Table 8).

Adrenaline kits were prescribed to 26 (66.66%) of 39 patients with IgE-mediated allergy. Of these, quality

Table 6
Relationship between follow-up with a nutritionist and quality of life (QoL)

	Follow-up with a nutritionist	No follow-up with a nutritionist
Good QoL	19 (45.2%)	12 (34.3%)
Average QoL	18 (42.9%)	15 (42.9%)
Poor QoL	5 (11.9%)	8 (22.8%)
Total	22 (52.4%)	9 (21.4%)
P-value	0.382	

Table 7
Relationship between food allergy pathophysiology and quality of life (QoL)

	IgE-mediated allergy	Non-IgE-mediated allergy	Mixed allergy
Good QoL	12 (30.8%)	11 (55.0%)	8 (44.4%)
Average QoL	19 (48.7%)	9 (45.0%)	5 (27.8%)
Poor QoL	8 (20.5%)	2 (22.2%)	5 (27.8%)
Total	39 (50.6 %)	20 (26.0%)	18 (23.4%)
P-value	0.082		

Table 8
Relationship between diagnosis of food allergy and quality of life (QoL)

	Proctitis	FPIES	Eosinophilic esophagitis	IgE-mediated allergy	Atopic dermatitis	Atopic dermatitis as only manifestation
Good QoL	7 (58.4%)	4 (50%)	1 (25%)	12 (30.8%)	13 (41.9%)	7 (46.68%)
Average QoL	5 (41.6%)	4 (50%)	0	19 (48.7%)	13 (41.9%)	5 (33.4%)
Poor QoL	0	0	2 (75%)	8 (20.5%)	5 (16.2%)	3 (20%)
Total	12 (15.6%)	8 (10.4%)	3 (3.9%)	39 (50.6%)	31 (40.2%)	15 (19.5%)
P-value			0,232			

FPIES = Food Protein Induced Enterocolitis Syndrome.

of life was good, average, and poor in 8 (30.8%), 13 (50%), and 5 (19.2%), respectively. Once again, the association between these variables was not significant (Table 9).

Most of the patients followed up < 6 months had good quality of life. Most of the patients followed up > 12 months had average quality of life. Of the total number of patients, approximately 50% were followed up with a nutritionist (generally for < 6 months), and had good quality of life.

When analyzing patients according to food allergy type, approximately 50% had an IgE-mediated allergy and average quality of life. However, those with non-IgE-mediated or mixed allergies generally had good quality of life. IgE-mediated allergy and atopic dermatitis were the main clinical presentations, with

Table 9
Relationship between prescribing adrenaline kits for patients with IgE-mediated allergies and quality of life

	Received an adrenaline kit®
Good quality of life	8 (30.8%)
Average quality of life	13 (50%)
Poor quality of life	5 (19.2%)
Total	26 (66.66%)
P-value	0.503

the quality of life ranging from good to average, even in the other clinical presentations. The quality of life among those who were prescribed adrenaline kits was predominantly average.

There was no significant association between any of the variables and quality of life in this sample.

Discussion

The quality of life of children diagnosed with food allergy has been the subject of studies in recent years, leading to the development of many questionnaires as a tool to assess the impact of the disease and its treatment on the individual and those around him.

Generic questionnaires assess health-related quality of life using four basic domains (physical, psychological, social relationships, and the environment), allowing comparisons between groups of healthy individuals and those with different diseases.[13,14] Avery et al., for example, compared a group of peanut-allergic children with another group of children with insulin-dependent diabetes mellitus. The incidence and level of anxiety were higher in the peanut allergy group.[15] Calsbeek,[16] in turn, compared 98 food allergy patients with a group of 758 patients with chronic gastrointestinal diseases, finding that children and adolescents in the former group suffered a greater daily impact at school and in their recreational activities than the latter group. A Dutch study also compared general quality of life scores among individuals with food allergy, irritable bowel syndrome, diabetes mellitus, rheumatoid arthritis, and asthma. The quality of life of the food allergy group was worse than in the diabetes mellitus group and better than in the asthma, rheumatoid arthritis, and irritable bowel syndrome groups.[16]

The results of studies based on a generic assessment of quality of life suggest that the emotional effects observed in patients with food allergies are difficult to compare with those of individuals with other chronic diseases. Certain characteristics of patients with food allergies can lead to higher degrees of anxiety, although they seem to have less impact on their socialization than in those with non-episodic chronic illnesses.[5,17]

Studies on quality of life in food allergy patients have shown that certain specific factors can affect daily life, such as adrenaline prescription, history of anaphylaxis, and perceived responsibility for safeguarding one's own health. In that regard, DunnGalvin et al.[9] developed two quality of life questionnaires, one for children aged 0-12 years and another for adolescents aged 12-18 years. The questionnaires were prepared at University College Cork, Ireland, in five stages: the first involved the enumeration of items and content that precisely capture the concerns of parents, which was made possible through surveys of support groups, listening to experts, and a literature review. Clinical impact methodology was then applied to reduce the number of items in the questionnaire by assessing the frequency (number of parents endorsing each particular item), importance (mean scores given by parents for each question), and global importance (frequency vs. importance) of each item. In the third stage, the items were analyzed to determine the questionnaire scales, which were divided into 3 domains: emotional impact, food anxiety, and social and dietary limitations. In step 4, the questionnaire was validated using the Child Health Questionnaire and the Food Allergy Independent Measure. The fifth and final stage was cultural validation: the questionnaire was applied to patients at Duke University in the United States.[9,18]

The importance of multidisciplinary action (pediatrician, allergist, nutritionist, and psychologist) in food allergy treatment has been progressively highlighted,[19] especially the role of the nutritionist in the search for better quality of life for patients and their families/caregivers.[9,20,21] According to the Italian Society of Pediatric Nutrition and the Italian Society of Pediatric Allergy and Immunology, it is essential for children undergoing exclusion diets to be regularly monitored by a nutritionist,[19] with scheduled periodic reassessments to check nutritional needs, age-imposed adaptations, and diet adherence.[19] The follow-up plan should be based on age and growth pattern.[22] Thus, the nutritionist has a central role in supplying nutrients restricted by the diet (remembering that each age group requires special attention to certain nutrients), in addition to helping parents plan meals, which reduces anxiety and improves quality of life.[22]

Food allergies can also trigger psychological disorders in patients and their families.[23] The constant fear of anaphylactic reactions and the need for vigilance to prevent exposure to allergens create tension and are predictors of distress.[7] Ravid et al. demonstrated that such patients and their families are often more anxious and distressed and have poorer quality of life than the general population.[5]

Thus, this study sought to determine the quality of life and outline the psychological profile of the included patients. Regarding quality of life, no significant association was found among the variables, unlike internationally published data, in which there is an association between improved quality of life in food allergy patients and follow-up with a nutritionist, adrenaline prescription and injection training, and follow-up time at the service. Our small sample size (77 patients), the short follow-up period and, consequently, the number of times the questionnaire was applied might explain these divergent results, in addition to highlighting the need for prolonged nutritional support for patients at our Food Allergy Clinic. Moreover, our study did not assess whether quality of life varied according to the allergenic food or whether multiple food allergies intensify the negative effects on quality of life.

Our results also highlighted the patients' need for psychological support, although our clinic, unfortunately, does not provide such a service. According to the available data, this contributes to the fact that 59.7% of the sample has average or poor quality of life.

Conclusions

The quality of life questionnaire is an important monitoring tool for patients diagnosed with food allergy because it allows individualization of their profile and highlights factors that negatively impact their daily well-being.

Although published studies point to a direct association between certain variables and improved quality of life in this population, we did not find one, but rather a need for greater psychological support for patients followed at our Food Allergy Clinic.

Studies involving larger populations over a prolonged follow-up period should be encouraged in an effort to explore and identify other variables capable of improving therapeutic interventions and, consequently, the quality of life of children with food allergies.

Annex 1

Food Allergy Quality of Life Questionnaire for children 0 to 12 years old

ANEXO 1

Questionário de Qualidade de Vida na Alergia Alimentar

Crianças de 0 a 12 anos

Resposta dos pais

(FAQoL-PF)

Instruções aos Pais

- A seguir são situações sugeridas pelos pais que afetam a qualidade de vida de seus filhos devido a alergia alimentar.
- Favor indicar **qual o impacto** cada situação tem na **qualidade de vida de seu(sua) filho(a)** marcando um X nas opções numeradas de 0 a 6.

Opções de resposta

0 = nenhum
1= um pouco
2 = levemente
3 = moderado
4 = muito
5 = bastante
6 = extremo

Esse questionário é anônimo e será identificado por um código numérico, preservando sua identidade.

Há 4 seções neste questionário : **A, B, C e D.**

Se seu(sua) filho(a) tem de **0 a 3 anos**, favor responder a **seção A**
Se seu(sua) filho(a) tem de **4 a 6 anos,** favor responder **Seção A e B**
Se seu(sua) filho(a) tem **7 anos ou mais**, favor responder **Seção A, B e C**.

Código:

SEÇÃO A : para todas as idades

	Por causa da alergia alimentar, o(a) meu(minha) filho(a) se sente	Nenhum 0	1	2	3	4	5	Extremo 6
1	Ansioso(a) e preocupado(a) ao comer	□	□	□	□	□	□	□
2	Diferente das outras crianças	□	□	□	□	□	□	□
3	Frustrado(a) por não poder comer as comidas que quer	□	□	□	□	□	□	□
4	Com medo de experimentar comidas novas	□	□	□	□	□	□	□
5	Incomodado(a) com o fato de que eu esteja preocupado(a) com a possibilidade dele(a) ter uma reação com o alimento	□	□	□	□	□	□	□

	Por causa da alergia alimentar, meu(minha) filho(a)……	Nenhum 0	1	2	3	4	5	Extremo 6
6	Passa mal (fisicamente)	□	□	□	□	□	□	□
7	Apresenta distúrbios emocionais	□	□	□	□	□	□	□
8	Tem poucas opções de alimentos para comer	□	□	□	□	□	□	□

	Por causa da alergia alimentar, meu(minha) filho(a) tem sido prejudicado(a) por……	Nenhum 0	1	2	3	4	5	Extremo 6
9	Receber mais atenção do que as outras crianças da idade dele(a)	□	□	□	□	□	□	□
10	Ter que amadurecer mais rápido que as outras crianças da idade dele(a)	□	□	□	□	□	□	□
11	Ter seu ambiente mais limitado que as outras crianças da idade dele(a)	□	□	□	□	□	□	□

	Por causa da alergia alimentar, o ambiente social do(a) meu(minha) filho(a) é restrito devido a limitações em……..	Nenhum 0	1	2	3	4	5	Extremo 6
12	Encontrar restaurantes seguros em que possamos ir em família	□	□	□	□	□	□	□
13	Encontrar locais de férias que possamos ir tranquilamente em família	□	□	□	□	□	□	□
14	Nas atividades escolares de outras pessoas (como dormir fora de casa, festas, brincar, etc.)	□	□	□	□	□	□	□

SEÇÃO B: somente para crianças com idade de 4 a 12 anos

Código:

	Por causa da alergia alimentar, a participação do(a) meu(minha) filho(a) é limitada……..	Nenhum 0	1	2	3	4	5	Extremo 6
15	Na escola, quando envolve atividades ou eventos relacionados a comida (lanches, festas etc.)	□	□	□	□	□	□	□

	Por causa da alergia alimentar, meu(minha) filho(a) se sente……	Nenhum 0	1	2	3	4	5	Extremo 6
16	Ansioso(a) quando vai a lugares diferentes	□	□	□	□	□	□	□
17	Incomodado(a) com o fato de ter que ser cuidadoso com o que vai comer	□	□	□	□	□	□	□
18	'Excluído(a)' de atividades envolvendo comida	□	□	□	□	□	□	□
19	Chateado(a) que os passeios da família são limitados	□	□	□	□	□	□	□
20	Preocupado(a) em comer, acidentalmente, um alimento que possa causar alergia nele(a)	□	□	□	□	□	□	□
21	Ansioso(a) quando se alimenta com adultos ou crianças que não conhece	□	□	□	□	□	□	□
22	Frustrado(a) pelas limitações da sua vida social	□	□	□	□	□	□	□

	Por causa da alergia alimentar, meu(minha) filho(a)……	Nenhum 0	1	2	3	4	5	Extremo 6
23	É mais ansioso(a) do que as outras crianças da mesma idade	□	□	□	□	□	□	□
24	É mais cuidadoso(a) que as outras crianças da mesma idade	□	□	□	□	□	□	□
25	Menos confiante em situações sociais que as outras crianças da mesma idade	□	□	□	□	□	□	□
26	Deseja não ter mais alergia alimentar	□	□	□	□	□	□	□

SEÇÃO C : somente para crianças de 7 a 12 anos

Código:

	Por causa da alergia alimentar, meu(minha) filho(a) sente se……	Nenhum 0	1	2	3	4	5	Extremo 6
27	Preocupado(a) com o seu futuro (oportunidades, relacionamentos)	□	□	□	□	□	□	□
28	Preocupado(a) com o fato das pessoas não entenderem a gravidade de sua alergia alimentar	□	□	□	□	□	□	□
29	Preocupado(a) com a pequena quantidade de informação nos rótulos de produtos	□	□	□	□	□	□	□
30	Limitado(a) pela alergia alimentar	□	□	□	□	□	□	□

Annex 2

Food Allergy Quality of Life Questionnaire for adolescents 12 to 18 years old

ANEXO 2

QUESTIONÁRIO DE QUALIDADE DE VIDA

EM ALERGIA ALIMENTAR 12 a 18 ANOS

Instruções

- As perguntas abaixo estão relacionadas a situações que afetam a qualidade de vida segundo a opinião de adolescentes portadores de alergia alimentar.
- Favor indicar **qual o impacto** de cada situação na **sua qualidade de vida,** marcando um "X" em uma das opções numeradas de 0 a 6.
- Se a situação não tiver **nenhum impacto**, favor marcar **0 (sem impacto).**
- **Este questionário é anônimo e será identificado por um código numérico, preservando a sua identidade.**

Escolha da resposta	Exemplo de resposta
0 = Sem impacto	
1 = Um pouco de impacto	Essa situação tem impacto na minha vida?
2 = Algum impacto	Sim, tem muito impacto na minha vida.
3 = Impacto	
4 = Um pouco mais de impacto	
5 = Muito impacto	
6 = Impacto extremo	

	Pergunta	0	1	2	3	4	5	6
	Devido a alergia alimentar, eu me sinto…							
	Diferente das outras crianças						X	

Código:

SEÇÃO A - 1ª PARTE: O impacto da Alergia Alimentar

	Por causa da alergia alimentar, eu me sinto…… (Nenhum → Extremo)	0	1	2	3	4	5	6
1	Ansioso(a) e preocupado(a) ao comer	□	□	□	□	□	□	□
2	Diferente das outras crianças	□	□	□	□	□	□	□
3	Frustrado(a) por não poder comer as comidas que quero	□	□	□	□	□	□	□
4	Com medo de experimentar comidas novas	□	□	□	□	□	□	□
5	Incomodado(a) com o fato de minha mãe ou meu pai estarem preocupados com a possibilidade de eu ter uma reação alimentar	□	□	□	□	□	□	□

	Por causa da alergia alimentar, …… (Nenhum → Extremo)	0	1	2	3	4	5	6
6	Me sinto mal	□	□	□	□	□	□	□
7	Me sinto irritado(a) (de saco cheio)	□	□	□	□	□	□	□
8	Não tenho muitas opções de alimentos para comer	□	□	□	□	□	□	□

	Por causa da alergia alimentar, eu não gosto de…….. (Nenhum → Extremo)	0	1	2	3	4	5	6
9	Receber mais atenção do que outros meninos(as) da minha idade	□	□	□	□	□	□	□
10	Ter de amadurecer mais rápido que outros(as) meninos(as) da minha idade	□	□	□	□	□	□	□
11	Ter que tomar mais cuidado no dia a dia do que outros(as) meninos(as) da minha idade	□	□	□	□	□	□	□
12	Ter que carregar minha adrenalina (ou anti-alérgico) para todo lugar que vou	□	□	□	□	□	□	□

	Por causa da alergia alimentar, tenho problemas em….. (Nenhum → Extremo)	0	1	2	3	4	5	6
13	Encontrar restaurantes seguros que eu possa ir com meus amigos e familiares	□	□	□	□	□	□	□
14	Escolher locais de férias que eu possa ir tranquilamente com meus amigos	□	□	□	□	□	□	□
15	Atividades sociais na casa dos outros (*dormir fora, festas, refeições*)	□	□	□	□	□	□	□
16	Eventos escolares que envolvem comida (*recreio, festa da turma*)	□	□	□	□	□	□	□

	Por causa da alergia alimentar, eu me sinto…… (Nenhum → Extremo)	0	1	2	3	4	5	6
17	Ansioso(a) quando vou a locais diferentes	□	□	□	□	□	□	□
18	Incomodado(a) com o fato de ter de ser cauteloso(a) com a comida	□	□	□	□	□	□	□
19	Excluído(a) de atividades envolvendo comida	□	□	□	□	□	□	□
20	Chateado(a) que os passeios da família (comer fora, celebrações) são limitados, devido a minha alergia alimentar	□	□	□	□	□	□	□
21	Preocupado(a) em comer acidentalmente um alimento que possa me causar alergia	□	□	□	□	□	□	□
22	Ansioso(a) quando me alimento com adultos e crianças que não conheço	□	□	□	□	□	□	□
23	Frustrado(a) pelas limitações da minha vida social	□	□	□	□	□	□	□

	Por causa da alergia alimentar, eu me sinto …… (Nenhum → Extremo)	0	1	2	3	4	5	6
24	Mais ansioso(a) do que as outros meninos(as) da minha idade	□	□	□	□	□	□	□
25	Mais cuidadoso(a) do que as outros meninos(as) da minha idade	□	□	□	□	□	□	□
26	Menos confiante do que as outros meninos(as) da minha idade	□	□	□	□	□	□	□
27	Na expectativa que minha alergia alimentar acabe.	□	□	□	□	□	□	□

	Por causa da alergia alimentar, eu me sinto…… (Nenhum → Extremo)	**0**	**1**	2	3	4	5	6
28	Preocupado(a) com meu futuro (relacionamentos, oportunidades, etc.)	□	□	□	□	□	□	□
29	Preocupado(a) com o fato das pessoas não entenderem a gravidade da minha alergia	□	□	□	□	□	□	□
30	Preocupado(a) com a pequena quantidade de informação nos rótulos dos produtos	□	□	□	□	□	□	□
31	Preocupado(a) com a possibilidade de ter uma reação ao beijar alguém que eu goste	□	□	□	□	□	□	□
32	Preocupado(a) que a alergia alimentar limita a minha vida em geral	□	□	□	□	□	□	□

Annex 3

Answer sheets

ANEXO 3

QQV Folha de Respostas (0-3 anos)

1. Impacto emocional Domínio		2. Ansiedade alimentar Domínio		3. Limitações sociais e dietéticas Domínio	
Pergunta	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**
Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo	
Q. 2		**Q. 1**		**Q. 3**	
Q. 6		**Q. 4**		**Q. 8**	
Q. 7		**Q. 5**		**Q. 12**	
Q. 9				**Q. 13**	
Q. 10				**Q. 14**	
Q. 11					
Total		**Total**		**Total**	
Total / 6 = Pontos do domínio impacto emocional (IE)		Total / 3 = Pontos do domínio ansiedade alimentar (AA)		Total / 5 = pontos do domínio limitações sociais e dietéticas (LSD)	
Pontos do domínio IE=		**Pontos do domínio AA=**		**Pontos do domínio LSD =**	

QQV Score final = (Pontos do domínio IE+ Pontos do domínio AA+Ponto do domínio LSD) / 3

QQV Score final = (_____ + _____ + _____) / 3 = _____

QQV Folha de Respostas (4-6 anos)

1. Impacto emocional Domínio		2. Ansiedade alimentar Domínio		3. Limitações sociais e dietéticas Domínio	
Pergunta	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**
Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo	
Q. 2		**Q. 1**		**Q. 3**	
Q. 6		**Q. 4**		**Q. 8**	
Q. 7		**Q. 5**		**Q. 12**	
Q. 9		**Q. 16**		**Q. 13**	
Q. 10		**Q. 17**		**Q. 14**	
Q. 11		**Q. 20**		**Q. 15**	
Q. 23		**Q. 21**		**Q. 18**	
Q. 24				**Q. 19**	
Q. 25				**Q. 22**	
Q. 26					
Total		**Total**		**Total**	
Total / 10 = Pontos do domínio impacto emocional (IE)		Total / 7 = Pontos do domínio ansiedade alimentar (AA)		Total / 9 = pontos do domínio limitações sociais e dietéticas (LSD)	
Pontos do domínio IE=		**Pontos do domínio AA=**		**Pontos do domínio LSD =**	

QQV Score final = (Pontos do domínio IE+ Pontos do domínio AA+Ponto do domínio LSD) / 3

QQV Score final = (_____ + _____ + _____) / 3 = _____

QQV Folha de Respostas (7-12 anos)

Impacto Emocional Domínio		Ansiedade alimentar Domínio		Limitações sociais e dietéticas Domínio	
Pergunta	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**
Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo	
Q. 2		**Q. 1**		**Q. 3**	
Q. 6		**Q. 4**		**Q. 8**	
Q. 7		**Q. 5**		**Q. 12**	
Q. 9		**Q. 16**		**Q. 13**	
Q. 10		**Q. 17**		**Q. 14**	
Q. 11		**Q. 20**		**Q. 15**	
Q. 23		**Q. 21**		**Q. 18**	
Q. 24		**Q. 29**		**Q. 19**	
Q. 25				**Q. 22**	
Q. 26					
Q. 27					
Q. 28					
Q. 30					
Total		**Total**		**Total**	
Total / 13 = Pontos do domínio impacto emocional (IE)		Total / 8 = Pontos do domínio ansiedade alimentar (AA)		Total / 9 = pontos do domínio limitações sociais e dietéticas (LSD)	
Pontos do domínio IE=		**Pontos do domínio AA=**		**Pontos do domínio LSD =**	

QQV Score final = (Pontos do domínio IE+ Pontos do domínio AA+Ponto do domínio LSD) / 3

QQV Score final = (_____ + _____ + _____) / 3 = _____

QQV Folha de Respostas (12-18 anos)

1. Impacto emocional Domínio		2. Ansiedade alimentar Domínio		3. Limitações sociais e dietéticas Domínio	
Pergunta	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**	**Pergunta**	**Ponto (0-6)**
Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo		Coloque os pontos de cada pergunta abaixo	
Q. 2		**Q. 1**		**Q. 3**	
Q. 6		**Q. 4**		**Q. 8**	
Q. 7		**Q. 5**		**Q. 12**	
Q. 9		**Q. 17**		**Q. 13**	
Q. 10		**Q. 18**		**Q. 14**	
Q. 11		**Q. 20**		**Q. 15**	
Q. 24		**Q. 22**		**Q. 16**	
Q. 25		**Q. 30**		**Q. 19**	
Q.26				**Q.21**	
Q. 27				Q.23	
Q. 28				Q31	
Q. 29					
Q. 32					
Total		**Total**		**Total**	
Total / 13 = Pontos do domínio impacto emocional (IE)		Total / 8 = Pontos do domínio ansiedade alimentar (AA)		Total / 11 = pontos do domínio limitações sociais e dietéticas (LSD)	
Pontos do domínio IE=		**Pontos do domínio AA=**		**Pontos do domínio LSD =**	

QQV Score final = (Pontos do domínio IE+ Pontos do domínio AA+Ponto do domínio LSD) / 3

QQV Score final = (_____ + _____ + _____) / 3 = _____

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Corresponding author:
Wilson Rocha Filho
E-mail: wrocha2227@gmail.com