Revista Contexto & Saúde
Editora Unijuí
Programa de Pós-Graduação em Atenção Integral à Saúde
ISSN 2176-7114 – v. 24, n. 48, 2024
http://dx.doi.org/10.21527/2176-7114.2024.48.14009
HOW TO CITE:
Lima KPO, Bagni UV, Souza BG, Rodrigues CJB, Ferreira DM. Healthy and inclusive nutrition in schools: A look at school food for children with autism spectrum disorder. Rev. Contexto & Saúde, 2024;24(48):e14009

ORIGINAL ARTICLE

Healthy and Inclusive Nutrition in Schools:
A Look at School Food for Children with Autism Spectrum Disorder

Karen Priscila Oliveira Lima[1]; Ursula Viana Bagni[2]
Bárbara Guimarães Souza[3]; Carla Janaina Bonfim Rodrigues[4]
Daniele Mendonça Ferreira[5]

Highlight:

1. Sensory processing and food selectivity influence school feeding.
2. Lack of ASD child nutrition knowledge hinders school inclusion.
3. Professional training and family engagement are important for overcoming challenges.

ABSTRACT

This study aimed to describe the perception of caregivers and professionals who work in public schools about the process of feeding children with Autism Spectrum Disorder in the school environment to contribute to their inclusion. This is a qualitative research carried out through interviews with caregivers and school employees (pedagogues, teachers, cooks, and principals). Open questions were asked about the knowledge of Autism Spectrum Disorder, and about the process and difficulties of feeding these children at school. The interviews were transcribed in full and the results were organized and analyzed using the content analysis technique, whose interpretation was based on references in the area of food and human rights. From the analysis of the narratives, five categories emerged that comprised the characteristic behaviors of children during feeding, knowledge about Autism Spectrum Disorder and feeding, food selectivity, sensory processing disorder, and school dropout related to feeding difficulties. It was observed that the feeding process of children with Autism Spectrum Disorder is marked by disturbing behaviors, generating anguish and a feeling of impotence in professionals and family members. Caregivers of children with Autism Spectrum Disorder who do not eat properly consider withdraw them from school. Faced with these difficulties, the need for professional qualification was identified, considering that knowledge of the disorder, especially the characteristics related to food, can effect the inclusion of these children and reduce school dropout related to food.

Keywords: autism spectrum disorder; food fussiness; school feeding; social inclusion.

---

[1] Universidade Federal Fluminense (UFF). Niterói/RJ, Brasil. https://orcid.org/0000-0003-3492-0019

[2] Universidade Federal Fluminense (UFF). Niterói/RJ, Brasil. https://orcid.org/0000-0002-3355-1795

[3] Universidade Federal Fluminense (UFF). Niterói/RJ, Brasil. https://orcid.org/0000-0001-5255-9402

[4] Universidade Federal Fluminense (UFF). Niterói/RJ, Brasil. https://orcid.org/0000-0001-6616-0232

[5] Universidade Federal Fluminense (UFF). Niterói/RJ, Brasil. https://orcid.org/0000-0001-7122-8270

INTRODUCTION

Childhood autism is a pervasive developmental disorder that affects three main areas of behavior – communication, socialization, and imagination[1]. The varying degrees of the disorder have been grouped as Autism Spectrum Disorder (ASD)[2], and among the associated manifestations is sensory processing disorder – a condition that affects the perception of senses such as touch, smell, taste, vision, and proprioception.

People with ASD may experience difficulties with chewing and swallowing[3], as well as preferences for certain textures, temperatures, colors, and smells over others, leading to food selectivity, refusal, and feeding disorders[4]. Food selectivity is quite common in children with autism and can result in a diet restricted to few foods, which may lead to nutrient inadequacy and contribute to malnutrition, overweight, obesity, and even exacerbation of behavioral symptoms associated with ASD[3].

The school environment is highly beneficial for children with ASD, and when enrolled in regular education, they exhibit positive behavioral changes, increased interaction, and the development of autonomy. In this setting, children spend many hours of the day being exposed to numerous stimuli, making it a learning environment that also fosters the social development of students[5].

Brazil has legislation that ensures the inclusion of students with specific educational needs in the educational system, such as the Brazilian Inclusion Law[6]. However, to be inclusive in practice, the school must be responsive to the needs of its students, making necessary adaptations with different strategies and resources[5]. Inclusion goes beyond receiving the child with disability; it involves promoting a comprehensive welcoming in multiple dimensions, modifying space, habits, and local processes[7]. In this sense, considering that children have one or more meals at school, attention to the nutrition of students with special dietary needs is part of school inclusion.

In Brazilian public schools, the provision of free meals is guaranteed by the National School Feeding Program (Programa Nacional de Alimentação Escolar – PNAE), a public policy designed following the principles of Food and Nutritional Security (Segurança Alimentar e Nutricional – SAN) and the Human Right to Adequate Food (Direito Humano à Alimentação Adequada – DHAA). Its objectives include providing part of the students' daily nutritional needs by offering meals that contribute to improved academic performance and learning, including the implementation of nutritional education activities that promote the formation of healthy eating habits[8].

The PNAE also provides specific meals for children with Special Dietary Needs (Necessidades de Alimentação Especial – NAE), aiming to cater to the population in its entirety[9].

However, despite the support provided by the creation of legal provisions ensuring the right to inclusion in schools, in practice, professionals often lack the necessary knowledge to handle these students, in addition to a lack of engagement, appropriate materials, and resources[10]. Although studies report on the difficulties and dietary issues of children with autism[3,11], the literature does not address specific issues regarding how the feeding process of these children occurs in schools daily, nor does it discuss possible overcoming strategies.

Understanding the process of acceptance of school meals by students with ASD, as well as the difficulties faced by the different stakeholders, can contribute to the definition of strategies for integration in the school environment, aiding in learning, quality of life, and the effective inclusion of these students. Thus, this study aimed to analyze the perception of caregivers and professionals working in public schools regarding the feeding process of children with ASD in school and their difficulties, to promote inclusion.

METHODS

This was an exploratory, descriptive research with a qualitative approach conducted from May to June 2022 with caregivers of children diagnosed with ASD regularly enrolled in participating schools in the municipality of Niterói (RJ), as well as staff (teachers, pedagogues, principals, cafeteria workers) who had direct interaction with the students. Considering the need for a period of coexistence with the child in school to express social perceptions related to their nutrition, staff members with less than 6 months of interaction with students with ASD were excluded from the study. Caregivers of students diagnosed with ASD who were enrolled in selected schools for less than 6 months, or who had low school attendance (less than 75% of the weekly class hours), were also excluded.

For participant recruitment, the Municipal Education Secretariat provided a list of schools with students diagnosed with ASD who were regularly enrolled. These schools were then randomly selected and ordered for visitation. The number of schools visited corresponded to achieving the desired number of research participants. Since this was a qualitative study, the number of participants was determined by theoretical saturation, which refers to saturation through theoretical sampling aimed at developing the conceptual codes already identified[12].

After obtaining written informed consent to conduct the research, each school provided a list of students with ASD in the institution, as well as contact information for the caregivers, to invite them to participate in the study.

Interviews were conducted by trained university researchers who had no prior relationship with the participants. They were conducted at the school itself at a mutually agreed-upon time with the volunteers, based on each individual's availability. Caregivers were invited to attend the school, facilitated by the pedagogue or principal, at a time that preceded the child's departure.

All information about the project and the assurance of anonymity and confidentiality of the information obtained from the interviews was provided. Volunteers signed a written Informed Consent Form to be interviewed and were identified by pseudonyms to ensure anonymity.

Information was collected using the techniques of free observation, recorded in a field diary, and individual open interviews. To answer the research question "What is the feeding process like for children with ASD in school and what challenges are faced for healthy and inclusive eating?", the interview script consisted of open-ended questions based on the following dimensions: 1) knowledge about ASD; 2) feeding process in the school environment; 3) difficulties of feeding children with ASD at school. The testimonies (corpus) were recorded using a digital recorder, and the audio files were stored in the cloud to ensure no loss of recorded content.

The interviews were transcribed in full and imported into the MAXQDA 2020 software program for categorization and data analysis[13].

The research technique was based on Content Analysis[14] and was structured into three phases: 1) pre-analysis; 2) material exploration, categorization, or coding; and 3) treatment of results, inferences, and interpretation. In the pre-analysis stage, a floating reading of all material was conducted. This was followed by inductive data analysis.

The responses found were coded throughout the analysis, meaning that categories were created based on previous readings as well as the confrontation with the data presented, configuring an inductive data analysis. In this phase, the main points of the interviews were selected to address the research objectives, categorizing them into sub-themes. For a better understanding of the research object, and to present the distribution and relevance attributed to categories and subcategories, as well as to participant groups (professionals and caregivers), an analytical triangulation process was also used, focusing on the quantitative dimension through absolute frequency (n) and relative frequency (%) of the codes identified in the narrative excerpts.

The entire process was carried out with meticulous readings of the material by two trained researchers, independently, to avoid perception bias and provide a differentiated view of the proposed categories. The final classification of the analysis categories was obtained after discussion and convergence of the categories from both researchers.

The third phase corresponded to the interpretation of the results through the search for the meaning of messages, guided by the following theoretical frameworks:

- Law 13,146 of 2015, known as the Statute of the Person with Disabilities, aims to ensure and promote the rights and freedoms of persons with disabilities on an equal basis, aiming at their social inclusion and citizenship[6];
- Organic Law on Food and Nutritional Security (Losan), which creates the National Food and Nutritional Security System (Sisan), aims to ensure the – Human Right to Adequate Food (DHAA)[15];
- Law 11,947 of 2009 of the National School Feeding Program (PNAE)[16], which guarantees the right of public Basic Education students to food, also ensures the feeding of students with Special Dietary Needs (NAE)[9].
- Law 12,764 of 2012, popularly known as the Berenice Piana Law, institutes the National Policy for the Protection of the Rights of Persons with Autism Spectrum Disorder. Through it, individuals with autism gained recognition as persons with disabilities, having their rights and those of their families ensured in social spheres[17].

To enhance the quality of the present study's report, the recommendations from the Consolidated Criteria for Reporting Qualitative Research (COREQ)[18] were followed.

The research project was authorized by the Municipal Education Foundation of Niterói (FME) and approved by the Research Ethics Committee of the School of Medicine at the Federal Fluminense University under protocol number CAAE 56169322.7.0000.5243. The research followed all the precepts of Resolution No. 466/2012[19] and Resolution No. 510/2016[20] of the National Health Council, which determine the guidelines and regulatory norms for research involving human subjects, as well as specific ethical guidelines for human and social sciences.

RESULTS

Among the 6 schools indicated by the Municipal Education Secretariat for visitation, 2 were included in the study to reach the number of research participants corresponding to the theoretical sampling of the qualitative method based on content saturation. School 1 had 12 students with ASD regularly enrolled in the institution, while School 2 had 33. Both institutions offered full-time early childhood and primary education.

A total of 29 individuals were interviewed, comprising 16 professionals from municipal public schools (9 female teachers, 1 male teacher, 1 female principal, 2 female pedagogues, and 3 female cafeteria workers) and 13 caregivers of children with ASD (3 fathers and 10 mothers). The children they were responsible for ranged from 2 to 9 years old, with 12 males and 1 female.

Through inductive data analysis, guided by the research question and objectives, five categories were established: 1) knowledge about ASD and feeding; 2) characteristic behavior during feeding; 3) school dropout related to feeding difficulties; 4) food selectivity; 5) sensory processing disorder (SPD). Some categories were organized into subcategories, and the frequency of corresponding narrative excerpts for each category and subcategory is presented in Table 1.

Table 1 – Description of codes linked to the number of citation excerpts from the categories and subcategories identified in the narratives of caregivers and school professionals who accompany students with Autism Spectrum Disorder. Niterói, Rio de Janeiro, Brazil – 2022

Categories	Subcategories	Number of citation excerptsin the narratives	
		n	%
Characteristic behaviors during feeding (n=61; 39%)	Perceptions and difficulties of professionals at school	26	17%
	Perceptions and difficulties of caregivers at school	19	12%
	Characteristic behaviors	16	10%
Knowledge about ASD and feeding (n=26; 17%)	Received guidance / prior knowledge	15	10%
	Did not receive guidance	11	7%
Food selectivity (n=36; 23%)	Non-specific selectivity	20	13%
	Textures	10	6%
	Colors	4	3%
	Odors	2	1%
Sensory processing disorder (SPD) (n=24; 15%)		24	15%
School dropout related to feeding difficulties (n=9; 6%)		9	6%
	Total number of codes	156	100%

Source: The authors.

Regarding characteristic behaviors during feeding and the various conducts present during the feeding of children with ASD, it was possible to identify 61 mentions from caregivers and teachers about the obstacles experienced by the team, caregivers, and the children themselves during meals at school.

In the reports, the most common behaviors are evidenced by acts of resistance, through extreme responses such as screaming, attempts to escape, crying, and distraction. The following narrative exemplifies these adversities:

> ...he sees the cafeteria door, he already starts screaming, throwing himself on the floor, he really screams, like that, and he doesn't eat anything. We offer him the plate of food and he gets desperate, you'd have to see it because I don't know if I'm able to convey his desperation to you (teacher 1; school 1).

Information about ASD is more well-known among professionals (71%) than among parents (42%) (Figure 1).

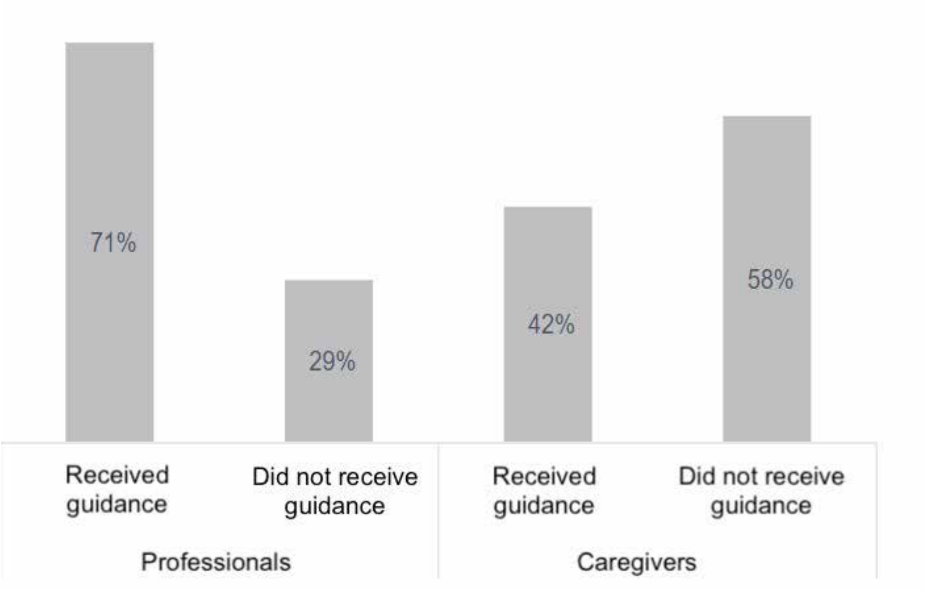

Figure 1 – Frequency of reports from caregivers (n=13) and professionals (n=16) regarding knowledge about Autism Spectrum Disorder. Niterói, Rio de Janeiro, Brazil – 2022.

This prior knowledge about the subject, whether acquired on their own or provided by a professional, was mentioned in 15 reports, with the following narrative standing out:

> We received guidance from the network, nutrition professionals from the network came here to the school to talk to us, and we received guidance from a professional who works specifically in the resource room and who is now doing a master's degree focused on special education. So we have internal and external training... And I think my graduation, back when I did pedagogy, and I did pedagogy in an inclusive context too, which allowed me some foundation to understand these processes (teacher 4; school 2).

On the other hand, in 11 excerpts, the prior absence of guidance on ASD and feeding was revealed until they had contact with the child, characterizing the difficulty in managing ASD at school:

> No. Just about restrictions, you know, like receiving a report, then they passed it on to us, but nobody came here to explain to us, you know, how it would be, things like that... (cafeteria worker 1; school 2).

The category "Food selectivity" was the second most cited category, identified in 36 excerpts (23%) (Table 1). The most reported difficulties were related to odors, textures, and colors of certain foods.

The following quote reveals the obstacles that caregivers and professionals face during meals served at schools:

> ...[student's name], at breakfast, he doesn't accept absolutely anything. He really has a lot of restrictions, you know, a lot of resistance to accepting food at school, and the mother reports that at home he eats, but not here, this is for breakfast. He doesn't accept lunch at all... (teacher 7; school 2).

It's possible to notice the manifestation of "food selectivity" in the quotes below, as professionals refer to the preference for certain food colors, discomfort with specific odors, and rejection of foods based on their texture:

> Nothing of color [student's name] likes, for example, beetroot, chayote... He only likes rice, we chop chicken very small mixed in the rice, meat, very small mixed in the rice (teacher 2; school 2).

> ...then we came to the conclusion that he didn't accept the food here because of the smell. Because the mother said she blends, puts meat, vegetables, a very well-cooked pasta. The rice, no, he doesn't even accept it blended, and she doesn't put too much seasoning. So I think, like, what bothered him was the smell of the seasoning of the food (teacher 4; school 1).

The category "Sensory processing disorder" was identified in 24 narrative excerpts. Among the interviewed professionals, half of them described behaviors related to SPD, while only 5 parents reported these characteristics.

It is worth noting here the feeling of helplessness revealed by the professional in the face of this condition:

> ...when the grandmother put a little spoonful of rice and beans in his mouth, it seemed like it was burning him all over, he screamed non-stop. He only stopped screaming when I went to the sink to wash his mouth, then he stopped screaming and hugged me... (teacher 2; school 1).

The last identified category, "School dropout related to feeding difficulties," referred to reports that mentioned considering withdrawing the child from school because they do not eat during the entire time they are at the facility. A total of 9 excerpts were identified in this category, as exemplified in the narratives:

> ...but here in the daycare, it's been very difficult, and I'm sort of opting to take him out of daycare altogether, because it's wearing me out, you know, to keep coming. I see that he really isn't eating, and the emotional toll, right? Because we come here. I live here in this community, up here, so I go up and down 6 times, 3 times down, and 3 times up, and it's affecting my health, you know? My legs, I have varicose veins, and this is becoming very exhausting... (mother 3; school 1).

DISCUSSION

The characteristic behaviors of ASD during feeding reported by school professionals were represented by feelings of helplessness and fear of children spending several hours at school without eating and becoming unproductive. Some parents showed overload and insecurity. Such evidence is corroborated in the literature, which points out that feeding is a delicate moment for children with ASD and their caregivers[21]. However, no studies were found relating to the characteristic behaviors of children with ASD during feeding at school, highlighting a knowledge gap in the development of strategies to overcome these difficulties.

The caregivers' reports focused on the lack of support from schools and the perception of unpreparedness among professionals dealing with the children. Often, the school staff considered all possibilities exhausted, requiring caregivers to come to the school to try to offer meals to their children on their own. Summoning caregivers to provide school meals to their children can ensure their inclusion and continued presence in school by enabling their feeding. In contrast, some caregivers reported difficulties in traveling to the school several times a day, either due to work, distance, or other daily responsibilities. One possible consequence of these events could be school dropout, as the alternative of repeatedly attending school on the same day may be unfeasible according to some caregivers' accounts.

The interviews with professionals emphasize the behavioral issues related to feeding in individuals with ASD, as well as the presence of negative reinforcement in feeding behavior, such as restlessness, impulsivity, and communication difficulties[22]. Common characteristics of ASD, such as rigidity in routines, communication difficulties, restricted interests, and sensory processing disorder, can alter how these children establish their relationship with food[22]. Consequently, meals are marked by atypical behaviors, such as destabilizing upon entering the cafeteria, throwing oneself to the ground, screaming, throwing food, running, and even physically assaulting professionals. Studies show that traumatic and frustrating experiences like these make living with these children more challenging and stressful, leading professionals to perceive themselves as incapable of effectively working with their students[23].

Therefore, there is a need for professional qualification, as evidenced in the interviews by noting that more detailed and accurate information about the characteristic feeding behaviors of ASD is not provided to professionals. These findings show a nonconformity with the legislation since continuous training of professionals should be offered by the government[6]. It is also worth noting that cafeteria workers are an essential part of the process and should be integrated into training projects. Inclusion through nutrition requires the participation of the entire school staff, addressing all the particularities that the disorder represents.

In the narratives related to obtaining “prior knowledge about ASD”, it was observed that the majority of citations in this category were related to the previous acquisition of information about the condition, especially among school professionals. The lack of knowledge about the disorder was more prevalent among caregivers, and the little they acquired was through their own experiences with the child. The literature confirms that the process of continuous training of teachers is deficient, and it is essential that they are adequately prepared to provide learning for children with ASD with well-directed strategies and resources[5].

Studies have shown that there is little or insufficient information being disseminated to caregivers and professionals directly involved with children with ASD[23–25]. As highlighted by Hofzmann et al.[24], many families still do not receive adequate guidance on how to manage their children with autism, which hinders the child in rehabilitation and developmental processes. In the research conducted by Couto et al.[23], teachers reported the need for the municipal government to provide courses, training, and specializations to help them deal with autistic children in school, considering it as a minimum support to assist in understanding and school inclusion.

According to the National Policy for the Protection of the Rights of Persons with Autism Spectrum Disorder, it is the government’s responsibility to provide information about ASD[17]. The participants’ reports indicate that information is being directed to schools but not to all staff members who are part of them and who have direct contact with children with ASD. Based on the accounts of some parents, there is also difficulty in managing the behavior of children with ASD due to a lack of information or guidance. According to the literature, caregivers need to be directed, as the good prognosis of a child with autism depends on prior knowledge of the family and the professionals around them[24].

Studies have revealed that the majority of teachers do not feel prepared to meet the needs of students with ASD, despite the increasing number of enrollments of these children in schools after the enactment of Law 12,764/2012, which penalizes establishments that refuse enrollment of individuals with ASD[5,17]. Therefore, it is essential to invest in the continuous training of education professionals, a duty of the government according to Law 13,146/2015[6]. Sensory alterations are quite common in ASD and can also be used as a parameter for obtaining the diagnosis[3]. On average, between 69% and 95% of children with autism present sensory processing disorder (SPD)[28].

Although common among children with ASD, behaviors related to SPD were seldom reported among parents. This fact may be related to the absence or insufficiency of knowledge about SPD. There is believed to be a misunderstanding of the characteristics that comprise autism, posing a challenge for caregivers, as this dysfunction also represents a limitation for children with autism to eat, as they cannot correctly interpret the sensory messages that the body receives during feeding.

This knowledge deficit becomes evident in the analysis of the study participants’ reports. Many expressed anguish and a sense of helplessness in the face of the manifestations that children exhibit during feeding, mainly due to their lack of familiarity with management strategies related to SPD.

This is a fundamental topic to be discussed with school professionals as well as caregivers because children with ASD, especially those who cannot verbally express themselves, will manifest SPD in the form of unusual behaviors and actions. These students become destabilized in certain situations and seek sensory regulation. When professionals and family members are familiar with SPD, they can prepare the child to cope with these challenges. For example, a child who doesn't eat at school due to discomfort with the noises in the cafeteria should be removed from the environment and directed to a quieter area. In this case, it's not about segregation but rather a temporary adaptation until their sensory issues are addressed, and the child can be carefully reintegrated into the environment[26].

Regarding food selectivity, most reports (56%) did not specify the difficulties related to this category (textures, colors, odors). Studies have shown that the obstacles related to food selectivity in children with ASD are mainly linked to how meals are presented, as well as the temperature, smells, and textures characteristic of each food[3]. The literature highlights that sensory dysfunctions stand out early in the development of a child with ASD and, therefore, are a notable characteristic[1]. The rejection and refusal of certain foods are also related to organic alterations associated with autism, such as chewing and swallowing problems, with vomiting, gag reflex, coughing, and choking during meals being common, present in about 15% of children with ASD[21]. It is presumed that the obtained result stems from the lack of knowledge of signs and characteristics that encompass the condition.

Caregivers were surprised by their children's selective behaviors, especially when they associated selectivity with SPD. Children who experience nausea upon seeing a certain food or those who cannot tolerate certain textures in the mouth, as indicated in the reports, are children with sensory dysregulation. As is known, food selectivity is related to SPD in children with autism[3].

The narratives of the professionals were more focused on adaptations made by themselves so that the children would accept what was offered in the school cafeteria. The time spent together and the exchange of experiences between the staff and the families of children with ASD enabled a significant improvement in the acceptability of food for these students. By refusing meals offered at schools, children can go many hours without eating, which can impair learning and participation in social events, contributing to the process of school exclusion[3].

According to the guidelines of the National School Feeding Program (PNAE), schools must offer healthy and adequate food to students. Foods high in sugar, fat, and salt, processed foods, canned foods, beverages with low nutritional value, and other unhealthy items are limited by the program. Furthermore, menus should be adapted to meet the needs of students diagnosed with special dietary requirements, including ASD, as long as they are in line with the guidelines for healthy eating. To comply with the legislation, the Program Implementing Entity limits the offer of external foods to children within the school environment, as well as some changes to the meals served to students. However, flexibility in how food is offered, in response to requests from caregivers and teachers, could positively contribute to the child's adaptation to school meals. The adaptation of school meals for children with ASD often involves the exclusion of a nutrient associated with a clinical manifestation, such as a gluten-free, lactose-free, dairy-free, sugar-free, or soy-free diet. However, it is also necessary to consider the behavioral relationship of children with autism with food, characterized by food refusal and selectivity. Therefore, the approach and communication of the nutritionist with families to understand food acceptance and behavior at home can help in adapting menus at school, as well as promoting food and nutrition education so that families can adopt a healthier diet at home, with nutritional quality similar to that offered by the PNAE.The accounts of some caregivers associated with school dropouts demonstrate that, at times, students end up being withdrawn from regular education due to issues related to feeding. It becomes evident in the parents' statements the anxiety generated by the number of hours the child spends at school without eating or the difficulty imposed in offering food to the child in the school environment, either due to the lack of management by the professionals or the attachment to the routine of the child with ASD who only eats with a specific person. According to the literature, the majority of students with autism drop out of school before completing high school, leading to an unfavorable prognosis for this population, who remain living with their caregivers or are institutionalized. These individuals also present difficulties in relationships with people who are not their family members[27].

Regarding school dropout, it is worth highlighting 3 relevant laws: Law 13.146/2015, which addresses the obligation of the government to ensure the permanence of individuals with disabilities in schools, with the elaboration of individualized measures to meet their specific needs[6]; Law 11.947/2009, which guarantees access to adequate food in public schools, including students with ASD[16]; and Law 11.346/2006, which establishes the Human Right to Adequate Food[15]. Food is part of the activities developed in school. A child with autism has specific needs that require adaptations that are not being made within the school environment. Therefore, a child who does not eat at school during the entire period may be in a situation of food insecurity, and one of the long-term consequences is school dropout, which also violates the right to education. Furthermore, the school, as a place of inclusion, is promoting a situation of school exclusion[27].

In ASD, there are numerous particularities involving eating, especially when the individual is outside their usual environment. The child may require a specific utensil, a quieter environment, a certain type of food, or a particular person. Smells, textures, and the presentation of the meal can negatively affect the process[21]. Therefore, adaptations related to the school environment should also include adaptations related to eating. Children with autism need to legitimately participate in all activities at school, where learning takes place, and school inclusion is effectively achieved[7].

This study proposed, in an unprecedented manner, an examination of the food intake of children with ASD in public schools, aiming to analyze the strengths and weaknesses surrounding the topic, thereby providing support for future actions to effectively promote the inclusion of these children through school meals. Therefore, the study may bring benefits in shaping future public policies and continuing education programs.

FINAL REMARKS

The difficulties related to the feeding of children with ASD in schools corresponded to the lack of knowledge about the particularities of the disorder, hindering the achievement of inclusion. The feeding process is a tense moment, permeated by disruptive behaviors, which generate distress in caregivers and professionals dealing with the children. Some children cannot eat and spend many hours without eating at school. Faced with this situation, some families consider withdrawing their children from the institution, directly resulting in school dropouts. The correct management of these situations in schools was identified as the main determinant for children to eat.

The sensory processing disorder and selective eating were involved in the process surrounding the feeding difficulties of children with ASD in schools. Restrictive eating patterns associated with the rigidity of routines contribute to and intensify the obstacles related to feeding.

The study emphasizes the importance of continuous training for professionals, particularly including the theme of feeding related to ASD, highlighting the behavioral and sensory characteristics that represent the greatest difficulties during the child's feeding process at school. It is also worth noting the importance of family involvement in this process, as most reported not receiving guidance on the disorder. Therefore, the partnership of both is essential for the inclusion process to be effective.

Among the limitations of the study, it is worth noting that the interviews were conducted in schools with caregivers of children regularly enrolled. Therefore, data related to dropout rates may not have been accurately measured, as caregivers of already dropped-out children were not interviewed. Through the reports, it is possible to infer the reality of school dropout resulting from the inability of children with ASD to feed themselves at school. Considering this limitation alongside the data collected in the interviews, it is presumed that school dropout rates may be more significant than effectively measured in this study. This gap could be explored in future research.

REFERENCES

[1] Sanches TTB, Taveira L da S. Autismo: uma revisão bibliográfica. Cad Intersaberes [Internet]. [cited 10 Fev. 2023]. 2020;9(18):34-42. Available from: https://cadernosuninter.com/index.php/intersaberes/article/view/1356

[2] American Psychiatric (APA). Manual diagnóstico e estatístico de transtornos mentais. 5. ed. Porto Alegre: Artmed; 2014.[3] Gama BTB, Lobo HHM, Silva AKT, Montenegro KS. Seletividade alimentar em crianças com Transtorno do Espectro Autista (TEA): uma revisão narrativa da literatura. Rev Artig Com [Internet]. [cited 3 Fev. 2023]. 2020;17:1-11. Available from: https://acervomais.com.br/index.php/artigos/article/view/3916

[4] Monteiro RC, Santos CB dos, Araújo R de CT, Garros D dos SC, Rocha ANDC. Percepção de professores em relação ao processamento sensorial de estudantes com Transtorno do Espectro Autista. Rev Bras Educ Espec [Internet]. [cited 3 Fev. 2023]. 2020;26(4):623-638. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-65382020000400623&tlng=pt

[5] Camargo SPH, Silva GLD, Crespo RO, Oliveira CRD, Magalhães SL. Desafios no processo de escolarização de crianças com autismo no contexto inclusivo: diretrizes para formação continuada na perspectiva dos professores. Educ Em Rev [Internet]. [cited 3 Fev. 2023].2020;36:e214220. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-46982020000100223&tlng=pt

[6] Brasil. Lei n. 13.146, de 6 de julho de 2015. Institui a Lei Brasileira de Inclusão das Pessoas com Deficiência (Estatuto da Pessoa com Deficiência); 2015.

[7] Weizenmann LS, Pezzi FAS, Zanon RB. Inclusão escolar e autismo: sentimentos e práticas docentes. Psicol Esc E Educ [Internet]. [cited 3 Fev. 2023]. 2020;24:e217841. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-85572020000100343&tlng=pt

[8] Brasil. Ministério da Educação. Cartilha Nacional da Alimentação Escolar. 2. ed. Brasília: FNDE; 2015. 88 p.

[9] Brasil. Ministério da Educação. Caderno de referência: alimentação escolar para estudantes com necessidades alimentares especiais. Brasília: FNDE; 2017. 65 p.

[10] Thiarlyne DBA, Assis CL. A criança com autismo e suas barreiras na inclusão educacional: um estudo em escolas públicas de Cacoal-RO. Integr Académica En Psicol [Internet]. [cited 10 Feb. 2023]. 2022;10(28):12-33. Available from: https://integracion-academica.org/attachments/article/336/28%20Integraci%C3%B3n%20Academica%20en%20Psicologia%20V10N28.pdf#page=15

[11] Colares S da S, Ferraz F, Perry IDS, Soratto J. Gestão do cuidado de estudantes com necessidades alimentares especiais vinculados ao Programa Nacional de Alimentação Escolar. Physis Rev Saúde Coletiva [Internet]. [cited 3 Feb. 2023]. 2020;30(4):e300407. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-73312020000400604&tlng=pt

[12] Moura CO de, Silva ÍR, Silva TP da, Santos KA, Crespo M da CA, Silva MM da. Percurso metodológico para alcance do grau de saturação na pesquisa qualitativa: teoria fundamentada. Rev Bras Enferm [Internet]. [cited 10 fev. 2023]. 18 Oct. 2021;75. Available from: http://www.scielo.br/j/reben/a/h6skK6tnvW4phBYzvxpWJ3Q/abstract/?lang=pt

[13] VERBI Software. MAXQDA 2020. Berlin: VERBI Software; 2020.

[14] Bardin L. Análise de conteúdo. 1. ed. São Paulo: Edições 70; 2016. 279 p.

[15] Brasil. Ministério do Desenvolvimento Social e Combate à fome [Internet]. Diário Oficial da União, Lei nº 11.346, de 15 de setembro de 2006. Sept. 15, 2006 p. 1. Available from: http://www.planalto.gov.br/ccivil_03/leis/l9431.htm

[16] Brasil. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica; 2009.

[17] Brasil. Lei n. 12.764, de 27 de dezembro de 2012. Institui a Política Nacional de Proteção dos Direitos da Pessoa com Transtorno do Espectro Autista; 2012.[18] Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care [Internet]. [cited 3 Fev. 2023]. 2007;19(6):349-357. DOI: https://doi.org/10.1093/intqhc/mzm042

[19] Conselho Nacional de Saúde (Brasil). Resolução n. 466, de 12 de dezembro de 2012. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos; 2012.[20] Conselho Nacional de Saúde (Brasil). Resolução n. 510, de 7 de abril de 2016. Dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais; 2016.[21] Magagnin T, Silva MA da, Nunes RZ de S, Ferraz F, Soratto J. Aspectos alimentares e nutricionais de crianças e adolescentes com transtorno do espectro autista. Physis Rev Saúde Coletiva [Internet]. [cited 3 Fev. 2023]. 2021;31(1):e310104. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-73312021000100600&tlng=pt

[22] Duarte CP, Perandin GP, Laviano L, Barreto TF. Abordagem interdisciplinar para avaliação e intervenção em dificuldades alimentares no autismo. Cad Pós-grad em Distúrb Desenvolv [Internet]. [cited 10 Fev. 2023]. 2021;21(2):109-127. Available from: https://editorarevistas.mackenzie.br/index.php/cpgdd/article/view/14913

[23] Couto CC, Furtado MC de C, Zilly A, Silva MAI. Experiências de professores com o autismo: impacto no diagnóstico precoce e na inclusão escolar. Rev Eletrônica Enferm. 2019;21:1-7.[24] Hofzmann R da R, Perondi M, Menegaz J, Lopes SGR, Borges D da S. Experiência dos familiares no convívio de crianças com Transtorno do Espectro Autista (TEA). Enferm Em Foco [Internet]. [cited 10 Feb. 2023]. 2019;10(2). Available from: http://revista.cofen.gov.br/index.php/enfermagem/article/view/1671

[25] Gaiato MHB, Zotesso MC, Ferreira L, Silveira R da R, Diodato R. Transtorno do espectro autista: Diagnóstico e compreensão da temática pelos responsáveis. Rev Contexto Saúde [Internet]. [cited 10 Fev. 2023]. 16 Nov. 2022;22(46). Available from: https://www.revistas.unijui.edu.br/index.php/contextoesaude/article/view/13209

[26] Bacaro PEF, Mori NNR. Transtorno de processamento sensorial e os prejuízos no processo de aprendizagem de alunos com transtornos do espectro autista: um recado para os professores. Res Soc Dev. 2020;9(11):e62691110314.[27] Rosa FD, Matsukura TS, Squassoni CE. Escolarização de pessoas com Transtornos do Espectro Autista (TEA) em idade adulta: relatos e perspectivas de pais e cuidadores de adultos com TEA. Cad Bras Ter Ocupacional [Internet]. 2019 [cited 3 Fev. 2023];27(2):302-316. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S2526-89102019000200302&lng=pt&nrm=iso&tlng=en

Submitted: February 15, 2023

Accepted: September 18, 2023

Published: April 3, 2024

Authors’ contributions:

Karen Priscila Oliveira Lima: Conceptualization, Data curation, Investigation, Methodology, Visualization, Writing – original draft.

Ursula Viana Bagni: Conceptualization, Formal analysis, Methodology, Project administration, Visualization, Writing – review & editing.

Bárbara Guimarães Souza: Data curation, Investigation, Methodology, Visualization, Writing – original draft.

Carla Janaina Bonfim Rodrigues: Investigation, Methodology, Visualization, Writing – original draft.

Daniele Mendonça Ferreira: Conceptualization, Formal analysis, Methodology, Project administration, Resources, Supervision, Visualization, Writing – review & editing.

All authors approved the final version of the manuscript.

Conflict of interest: There is no conflict of interest.

Financing: Does not have financing.

Corresponding author:
Daniele Mendonça Ferreira
Universidade Federal Fluminense (UFF)
Faculdade de Nutrição Emília de Jesus Ferreiro, Rua Mário Santos Braga, n. 30, 4º andar, Valonguinho, Centro – Niterói/RJ, Brasil. CEP: 24020-140.
daniele_ferreira@id.uff.br

Editor: Dr. Giuseppe Potrick Stefani
Editor-in-chief: Dr. Adriane Cristina Bernat Kolankiewicz