CHILD FOOD EDUCATION: ASSESSMENT OF DIETARY PROFILE AND PLAYFUL STRATEGIES FOR THE PROMOTION OF HEALTHY HABITS WITH CHILDREN FROM COMMUNITIES IN RECIFE

EDUCAÇÃO ALIMENTAR INFANTIL: AVALIAÇÃO DO PERFIL ALIMENTAR E ESTRATÉGIAS LÚDICAS PARA A PROMOÇÃO DE HÁBITOS SAUDÁVEIS COM CRIANÇAS DE COMUNIDADES DO RECIFE

EDUCACIÓN ALIMENTARIA INFANTIL: EVALUACIÓN DEL PERFIL ALIMENTARIO Y ESTRATEGIAS LÚDICAS PARA LA PROMOCIÓN DE HÁBITOS SALUDABLES CON NIÑOS DE COMUNIDADES DE RECIFE

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ABSTRACT

The increase in childhood obesity in Brazil has raised concerns, especially in vulnerable communities, where factors such as low educational levels, limited access to healthy foods, and cultural habits hinder the promotion of nutritional health. In this context, playful educational activities have proven effective in engaging children in learning about healthy eating from an early age. This project aimed to evaluate the knowledge of children aged 7 to 12 years regarding healthy eating habits and to promote awareness through interactive workshops. The activity was carried out in December 2024 with 23 children from communities near the Federal Rural University of Pernambuco, conducted by Nursing students from UNINASSAU Recife Caxangá. Diagnostic questionnaires, thematic presentations, games ("true or false" and "food memory"), sensory dynamics, a final quiz, and the distribution of educational materials were applied. The questionnaire results showed that the children have a high consumption of ultra-processed foods and a low intake of fruits and vegetables. The playful strategies promoted greater engagement and understanding among the children regarding healthy eating, especially in the correct identification of natural and processed foods. The experience also contributed to the training of the extension students and reinforced the role of the university as an agent of social transformation.

Keywords: Food Education. University Extension. Childhood Obesity. Health Promotion. Healthy Eating.

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RESUMO

O aumento da obesidade infantil no Brasil tem gerado preocupação, especialmente em comunidades vulneráveis, onde fatores como baixa escolaridade, acesso limitado a alimentos saudáveis e hábitos culturais dificultam a promoção da saúde nutricional. Nesse contexto, ações educativas lúdicas mostram-se eficazes para envolver crianças no aprendizado sobre alimentação saudável desde os primeiros anos. Este projeto teve como objetivo avaliar o conhecimento de crianças de 7 a 12 anos sobre hábitos alimentares saudáveis e promover a conscientização por meio de oficinas interativas. A atividade foi realizada em dezembro de 2024 com 23 crianças de comunidades próximas à Universidade Federal Rural de Pernambuco, conduzida por alunos do curso de Enfermagem da UNINASSAU Recife Caxangá. Foram aplicados questionários diagnósticos, apresentação da temática, jogos ("verdadeiro ou falso" e "memória alimentar"), dinâmicas sensoriais, quiz final e distribuição de material educativo. Os resultados do questionário mostraram que as crianças têm alto consumo de alimentos ultraprocessados e baixa ingestão de frutas e vegetais. As estratégias lúdicas promoveram maior engajamento e entendimento das crianças sobre alimentação saudável, com destaque para a identificação correta de alimentos naturais e industrializados. A experiência também contribuiu para a formação dos extensionistas e reforçou o papel da universidade como agente de transformação social.

Palavras-chave: Educação Alimentar. Extensão Universitária. Obesidade Infantil. Promoção da Saúde. Alimentação Saudável.

RESUMEN

El aumento de la obesidad infantil en Brasil ha generado preocupación, especialmente en comunidades vulnerables, donde factores como el bajo nivel educativo, el acceso limitado a alimentos saludables y los hábitos culturales dificultan la promoción de la salud nutricional. En este contexto, las acciones educativas lúdicas se muestran eficaces para involucrar a los niños en el aprendizaje sobre alimentación saludable desde los primeros años. Este proyecto tuvo como objetivo evaluar el conocimiento de niños de 7 a 12 años sobre hábitos alimentarios saludables y promover la concientización mediante talleres interactivos. La actividad se realizó en diciembre de 2024 con 23 niños de comunidades cercanas a la Universidade Federal Rural de Pernambuco, llevada a cabo por estudiantes del curso de Enfermería de UNINASSAU Recife Caxangá. Se aplicaron cuestionarios diagnósticos, presentación de la temática, juegos ("verdadero o falso" y "memoria alimentaria"), dinámicas sensoriales, un cuestionario final y distribución de material educativo. Los resultados del cuestionario mostraron que los niños tienen un alto consumo de alimentos ultraprocesados y una baja ingesta de frutas y vegetales. Las estrategias lúdicas promovieron un mayor compromiso y comprensión de los niños sobre la alimentación saludable, destacándose la correcta identificación de alimentos naturales e industrializados. La experiencia también contribuyó a la formación de los extensionistas y reforzó el papel de la universidad como agente de transformación social.

Palabras clave: Educación Alimentaria. Extensión Universitaria. Obesidad Infantil. Promoción de la Salud. Alimentación Saludable.

1 INTRODUCTION

According to the study carried out by the Observatory of Childhood Health, data released at the end of 2023 showed that Brazil has almost 3 times more overweight children (such as overweight and obesity), compared to the global average. Thus, it is notorious that diseases that were previously more common in adults, such as diabetes, had an aggravating increase in children during the COVID-19 pandemic period, between 2019 and 2021.

Healthy eating in childhood is essential to ensure the proper growth and development of children, in addition to contributing to the prevention of chronic diseases throughout life. Understanding the concept of healthy eating in this period is essential to guide balanced eating practices from the first years of life. A diet rich in fruits, vegetables, grains and quality proteins contributes to physical and mental development, strengthening the daily disposition. However, for a large part of the population in poverty, this dietary pattern is still a privilege. According to Müller et al. (2025), the difficulty in accessing healthy foods compromises the construction of adequate eating habits, especially in childhood, which can perpetuate inequalities throughout life. Complementing this panorama, a study by Fiocruz revealed that factors such as low education, precarious housing conditions, and consolidated cultural habits hinder the adoption of healthy eating practices in primary care services, increasing the challenges of health promotion in vulnerable communities (Silva et al., 2016).

In this context, public health promotion policies play a decisive role. Programs such as the National School Feeding Program (PNAE), the Unified Health System (SUS) and the Family Health Strategy act directly to guarantee the right to adequate food and nutritional education for families, especially in the most vulnerable communities.

In addition, according to scientific studies by the Pan American Health Organization (PAHO) on the role of nursing in Primary Care and in the Family Health Strategy (FHS), professionals in the area have made a difference in the promotion of child health, through constructive dialogical attitudes that prepare parents and families to have skills in the comprehensive care of children. Therefore, this care model aims to ensure health education on a continuous basis, through community actions to help prevent diseases and injuries, such as hypertension and diabetes, which are treated by nurses.

The application of playful methodologies in early childhood education has proven to be an effective tool to involve children in the learning process about healthy habits. Through games, stories and interactive activities, it is possible to raise awareness and educate the little ones about the importance of a nutritious and balanced diet. Activities such as children's culinary workshops, where students participate in the preparation of healthy snacks, allow direct contact with food and arouse interest in new flavors. Educational games such as "food

bingo", "food memory" and "food wheel" help to fix knowledge in a fun way. Other strategies include storytelling with characters that encourage healthy choices, puppet theaters that address the importance of fruits and vegetables, and the use of themed drawings and music. These methodologies favor not only learning, but also the change in eating behavior from childhood.

Given this, it is of fundamental relevance to take care of one's health from childhood to have a healthy growth. It is worth mentioning that university extension activities are important, as they show that the learning obtained in the nursing undergraduate course goes far beyond patient care in the hospital environment, as this training can also be used as a tool for social transformation, which can help promote the quality of life of society by providing health guidance. Therefore, it can be seen that the performance of socio-educational actions can make children's eating habits healthier. Finally, the justification for the project is based on the urgent need to promote educational actions that strengthen knowledge about healthy eating from childhood, preventing future health problems, such as cases of obesity, diabetes, hypertension, and other chronic diseases among children, as evidenced by Soares et al. (2023), who point to a direct relationship between the increase in the prevalence of Chronic Non-Communicable Diseases (NCDs), and contributing to the formation of a more conscious and healthy generation. In view of the above, this article aims to assess the level of knowledge of children between 7 and 12 years old about healthy eating habits and to promote awareness through educational workshops.

2 MATERIAL AND METHODS

The action was developed at the Department of Consumer Sciences of the Federal Rural University of Pernambuco (UFRPE), carried out in December 2024, with 23 children (between 7 and 12 years old) from communities surrounding the academic community of UFRPE, through playful workshops with games and presentations. The action was taught by students from the health courses of UNINASSAU Recife Caxangá.

The present extension report was developed with participating children, whose legal guardians previously signed the Term of Authorization for Participation and Use of Image, ensuring agreement and awareness of the activities carried out. The project was conducted in accordance with the General Law for the Protection of Personal Data (Law No. 13,709/2018), ensuring the protection and confidentiality of the information collected, as well as the restricted use of the images for academic and scientific purposes. It is noteworthy that this is an extension project of an educational nature, without the involvement of additional risks to health, without collection of sensitive data or to the physical integrity of the

participants. Strictethical principles were observed, in order to respect the dignity, privacy and rights of the children involved, in line with national regulations and the principles of ethics in research with human beings.

Initially, a biblioFigureic survey was carried out for the construction of the workshops, in a monoFigure bank, internet research, scientific journals and books, in addition to the search for materials for the elaboration of the dynamics. The topics addressed in the action, through a presentation with contextualized slides, were: healthy eating, food functions, healthy habits, quality of life and promotion of children's health.

To assess and promote children's knowledge about healthy eating, several educational strategies were adopted. Initially, a questionnaire (Figure 1) was applied with open and closed questions to identify the participants' previous knowledge.

Figure 1

Application of a questionnaire to the children to assess previous knowledge and eating habits

Source: Authors (2025).

At the beginning of the action, this questionnaire was applied with the objective of evaluating the children's eating habits. The questions address aspects such as: what they usually eat for breakfast, if they have the habit of consuming natural juice, vegetables and fruits, what is their favorite fruit and if they prefer fried foods or healthy foods. From the answers, it was possible to observe that most of the children had an inadequate eating pattern, with high consumption of processed foods, such as filled cookies and artificial juices.

Then, interactive presentations were made, with accessible language and attractive visual resources, followed by practical activities, a game of the senses (Figure 2), in which the blindfolded children tried to guess what the foods were through touch and smell, true or

false about eating habits, memory game of healthy habits (Figure 3) and finally, an evaluative quiz to verify the knowledge acquired. The children also received educational material in book format on the importance of fruit consumption (Figure 3), which reinforced the concepts worked on during the activities. All actions were planned to stimulate learning in a playful, participatory and reflective way.

Figure 2

Playful activity (game of the senses) developed with the children

Source: Authors (2025).

Figures 3

Playful activity (memory game about vitamins) and reading a textbook about healthy eating

Source: Authors (2025).

3 RESULTS AND DISCUSSION

The analysis of children's eating habits revealed that most opt for ultra-processed foods for breakfast, a pattern that has also been identified in other studies on children's eating behavior (Monteiro et al., 2019; Costa et al., 2021). However, after carrying out the educational activities, there was greater engagement and understanding of the importance of healthier food choices, which reinforces the relevance of extension actions as tools for social transformation (Silva et al., 2020).

Figure 4 shows that most children reported drinking water throughout the day, 10 children reported drinking water constantly and 11 reported drinking water a few times a day. This result is a positive indicator, since adequate water intake is essential for maintaining hydration and for the proper functioning of the body (Pearson et al., 2009; Popkin, D'Anci & Rosenberg, 2010). However, two children reported not consuming water regularly, signaling the need for continuous educational strategies to encourage this habit, either through school campaigns or through greater family involvement (Vargas et al., 2018).

Figure 4

Do you usually drink water during the day?

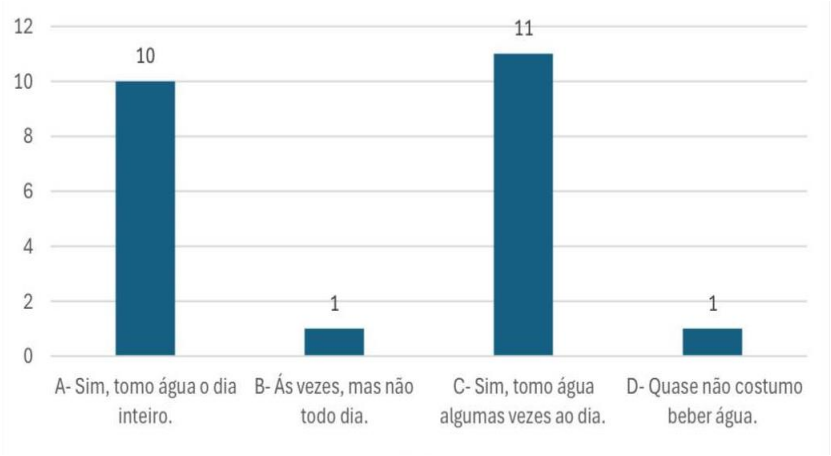


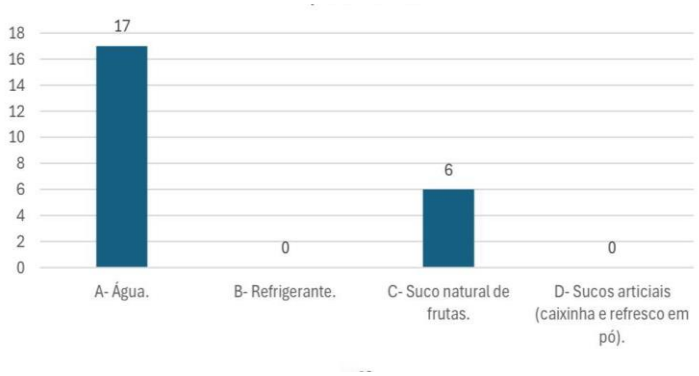
Figure 5 reinforces the positive trend, indicating that 17 children declared a preference for water as their main drink. This data is relevant for health promotion, since the consumption of water to the detriment of sugary drinks contributes to the prevention of obesity and chronic non-communicable diseases (Malik et al., 2010; WHO, 2020). None of the children indicated soda as their preferred drink, an unusual result, which may be associated with a process of awareness already present in the school or family environment. In addition, six children showed a preference for natural juice, as long as it does not add sugar, which is also considered a healthy habit. It is also noteworthy that industrialized juices

(boxed) were not mentioned, which is positive, since they generally have high levels of sugars, additives, and dyes (Monteiro et al., 2018; Pearson et al., 2009).

Together, these findings highlight the role of educational actions in promoting healthier food choices among children, especially in school environments, corroborating studies that defend the importance of food and nutrition education as a health prevention tool (Triches & Giugliani, 2005; Jaime & Lock, 2009).

Figure 5

What would you rather drink?



The analysis of Figure 6 shows that most children (n=18) declared a preference for salty foods. Although this choice is not, in itself, negative, it may reflect a trend towards the consumption of ultra-processed foods, such as snacks, filled cookies, and fast foods, which generally have a high content of sodium, fats, and additives (Monteiro et al., 2019; Louzada et al., 2015). This scenario deserves attention, since frequent consumption of these products is associated with future risks of obesity and chronic non-communicable diseases (Costa et al., 2021).

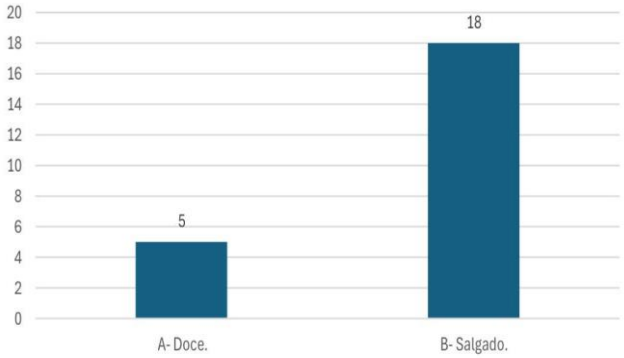
On the other hand, five children reported a preference for sweet foods, which may also represent greater exposure to industrialized sweets, rich in simple sugars and additives. Frequent consumption of this type of food can negatively impact oral and metabolic health, in addition to reinforcing unhealthy eating patterns from childhood (Malik et al., 2010; WHO, 2020).

These results may be related to the fact that children's palate is naturally inclined to sweet and salty flavors, as already demonstrated in studies of eating behavior (Mennella, 2014; Ventura & Mennella, 2011). Early and repeated exposure to these stimuli can intensify preferences for foods with high energy density and low nutritional value, making it difficult to accept healthier foods, such as fruits, vegetables, and legumes (Nicklaus, 2009).

Therefore, the findings highlight the importance of early intervention through food and nutrition education strategies in school environments, as well as the involvement of the family in the provision of more nutritious foods, in order to positively shape food preferences in childhood (Triches & Giugliani, 2005; Jaime & Lock, 2009).

Figure 6

Do you consume more sweet or salty food?



When asked if children like fruits (Figure 4), 21 children stated that they like fruits, which shows good acceptance of these foods. This data is important to support interventions that increase the frequency of consumption. It also demonstrates that home environments rich in fruits and vegetables increase the acceptance of these foods among children (Pearson et al. 2009).

Figure 7

Do you like fruit?

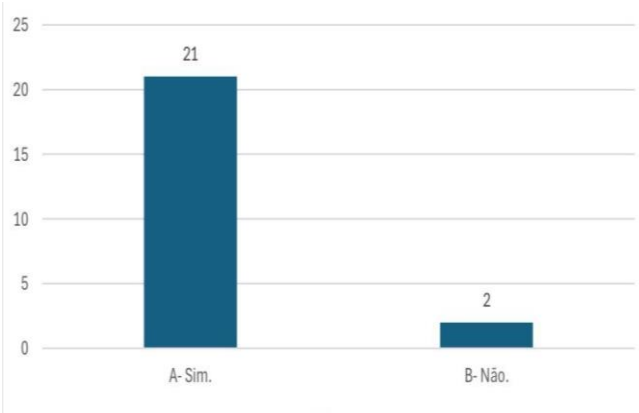


Figure 7 showed that 21 children said they liked fruit, but when asked how often they consumed fruit (Figure 8), only 7 reported consuming it every day. This shows a contrast

between taste and practice, indicating that even if they like it, fruits may not be being offered frequently at home or at school (Patton et al. 2009).

Figure 9

How Often Do You Eat Fruit?

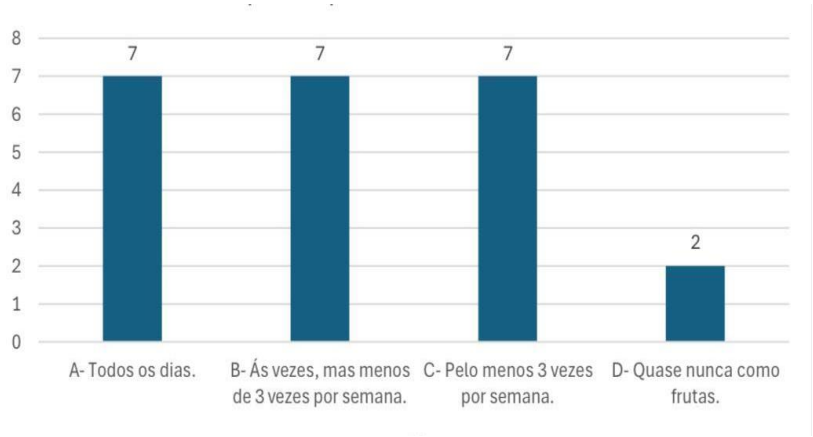
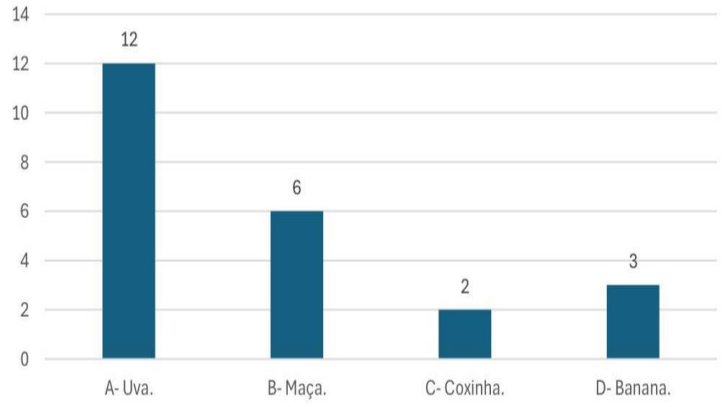


Figure 9 shows that grapes (12 children), apples (6 children) and bananas (3 children) were the preferred foods. While only 2 children stated that they opt for coxinha, which demonstrates a good preference for fruits when there is an option, they also show that practical and easy-to-eat fruits are more consumed at home (Pearson et al. 2009).

Figure 10

Which foods below would you rather eat?

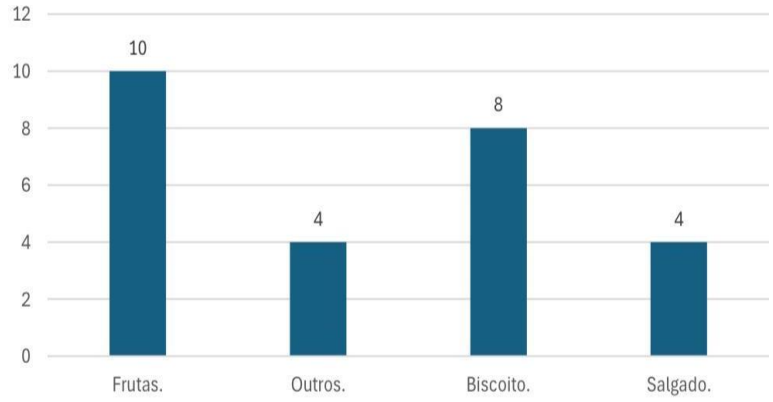


When asked about snacks (Figure 11), fruits (10 children) and cookies (8) were the most mentioned items; snacks (4) and assorted items (4). Considering that cookies, snacks, and part of the "assorted items" tend to be ultra-processed, this indicates that about 62% of children reported less healthy options in snacks, signaling a pattern that is still strongly oriented towards practicality and convenience, to the detriment of nutritional quality. This diagnosis reinforces the urgency of food and nutrition education from an early age, with

integrated actions between family, school and public policies. Recent evidence shows that school-based interventions with greater parental involvement produce better dietary changes in children; Broad reviews also confirm that well-designed policies and programs in the school environment improve multiple diet, health, and learning outcomes (Olgacher et al., 2025). In the Brazilian context, guidelines such as the Food Guide for the Brazilian Population and the PNAE give the guide to prioritize fresh foods and limit ultra-processed foods; National studies indicate that higher consumption of ultra-processed foods in children and adolescents is associated with poorer diet quality and unfavorable cardiometabolic markers, especially in the Northeast. Strengthening access to fruit (price, availability and supply at school), setting the example of adults and adopting clear school standards for snacks are concrete steps to reverse the situation.

Figure 11

Usually what do you eat at snack time?



According to the data in Figure 12, it is observed that most of the children interviewed (12) reported a preference for foods such as bread and butter and sausage products (ham and bologna) for breakfast. In second place, the consumption of fruit or natural juice appears, mentioned by only 6 children. This eating pattern reflects a very common habit among Brazilian families, marked by quick, practical options that are generally more attractive to children's palates, but which, from a nutritional point of view, are not the most appropriate choices for the first meal of the day.

Frequent consumption of ultra-processed foods, such as sausages, is associated with a higher risk of obesity, hypertension, dyslipidemias, and nutritional deficits throughout life (Nobre et al., 2023; Santos et al., 2024). Recent studies confirm that children exposed early to ultra-processed foods tend to consolidate unhealthy eating patterns that extend into adolescence and adulthood. In addition, the low adherence to the consumption of fruits and

natural juices shows the persistence of challenges in promoting healthy eating habits since childhood, despite the recommendations of the Food Guide for the Brazilian Population (Brasil, 2014).

These findings reinforce the need for intersectoral educational actions, involving both the school and the families, in order to encourage more balanced food choices from an early age. Evidence shows that food and nutrition education programs that include parental involvement have the greatest positive impact on children's diet quality (Pearson et al., 2009), while recent reviews confirm that comprehensive school-based interventions are effective in improving dietary patterns and reducing future risks (Silva, Bezerra & Claro, 2025).

Figure 12

Which of these options do you like to eat the most for breakfast?

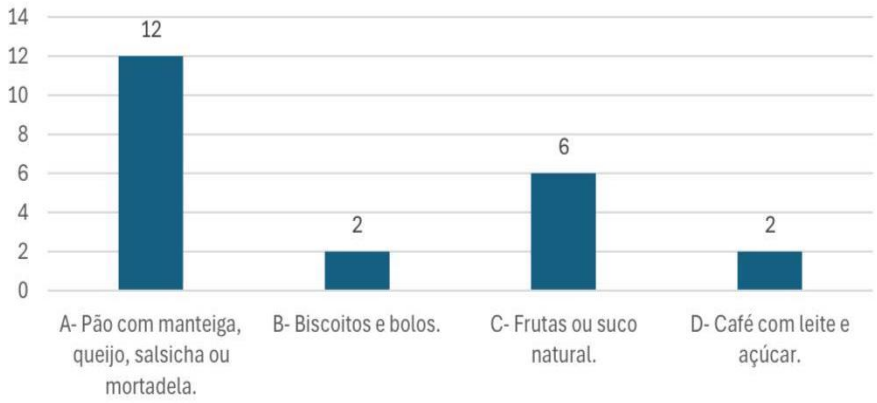
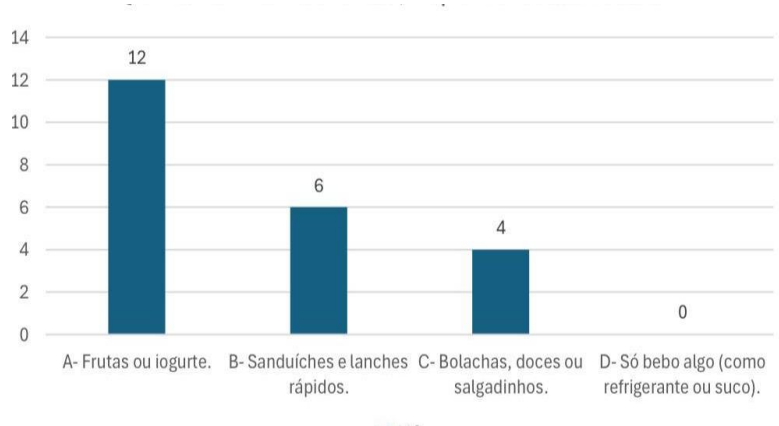


Figure 13 shows that most children opt for fruit or yogurt (12), a positive habit. Others choose sandwiches (6) or sweets and snacks (4). None reported consuming only beverages. Studies such as the one by De Jesus et al. (2020) point out that the availability of ready-to-eat fruits and vegetables in the home environment contributes to the reduction of the intake of ultra-processed snacks among children; However, the high cost of these foods still represents an obstacle for many families, making it difficult to adopt healthier eating habits on a daily basis.

Figure 13

When You Feel Hungry, What Do You Usually Eat?



According to the data in Figure 14, it is observed that the children's answers about the food considered the tastiest were quite balanced. Watermelon was the most mentioned item (7 mentions), followed by coxinha (6), chocolate (5) and banana (4). This panorama reveals a scenario that is both positive and challenging for the promotion of healthy eating in childhood.

On the one hand, the appreciation of fruits stands out, especially watermelon, which leads the ranking, and bananas, also well accepted. This finding reinforces that children's palate can be receptive to fresh foods, when they are offered consistently and inserted into the eating routine (Brasil, 2014). Recent studies confirm that repeated and early exposure to fruits and vegetables increases children's uptake and reduces food selectivity (Dallazen et al., 2022).

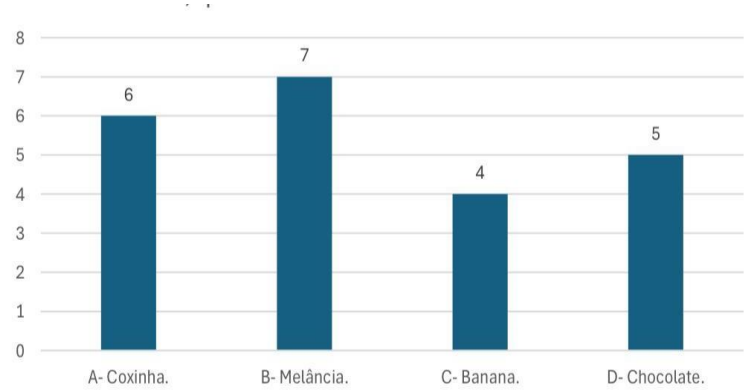
On the other hand, the high preference for coxinha and chocolate, both classified as ultra-processed or of low nutritional value, draws attention. These foods concentrate fat, salt, and/or sugar and have a strong sensory and marketing appeal, factors that explain their high attractiveness among children (Nobre et al., 2023). Recent evidence shows that early and frequent consumption of ultra-processed foods is associated with increased risk of obesity, hypertension, and metabolic alterations in children and adolescents (Santos et al., 2024).

This contrast between the acceptance of fruits and the preference for ultra-processed foods confirms that childhood is a period marked by the coexistence of healthy and unhealthy eating habits, which can make it difficult to consolidate balanced patterns in the long term. As Mennella and Beauchamp (1994) have already pointed out, food preferences are influenced by cultural, emotional and repeated exposure factors, and are strongly modulated by the family and school environment. Current reviews also highlight that intersectoral educational strategies – involving school, family, and public policies – are essential to

strengthen the consumption of fresh foods and reduce the appeal to ultra-processed foods (Silva, Bezerra & Claro, 2025).

Figure 14

For you, which of the foods below is tastier?

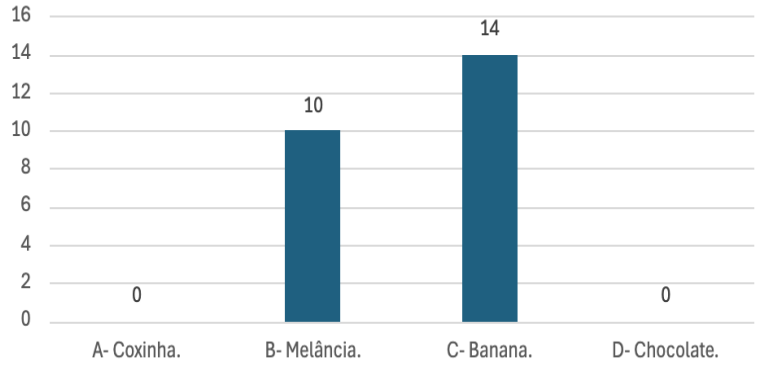


According to the data obtained in Figure 15, bananas and watermelons were pointed out by the children as the healthiest foods, while coxinha and chocolate were not included in this category. This distinction indicates that, even at an early stage of cognitive and dietary development, children already have a certain discernment between what is considered healthy and what is not, demonstrating a basic understanding of the concepts associated with good nutrition. This result is relevant, as it suggests that educational actions promoted by schools, parents or guardians are being, in a way, assimilated by children.

On the other hand, the exclusion of coxinha and chocolate from the category of healthy foods is an indication that children recognize that these items, despite being tasty and frequently consumed, do not bring the same nutritional benefits as fruits. Both foods are high in fat, sugar, and/or sodium, and are widely recognized as ultra-processed, associated with the risk of childhood obesity and other comorbidities when consumed in excess. This perception is supported by the literature by Castromán-Valenti et al. (2019) highlight that food and nutrition education, when conducted in a continuous and contextualized way, has the power to form attitudes and knowledge from childhood, allowing children to develop their own criteria for judging the foods around them. The school, as a formative environment, together with the support of parents, plays a fundamental role in this process, especially by offering balanced meals and coherent information about food.

Figure 15

For you, which of the foods below is healthier?



According to the data obtained, most of the children interviewed (14) stated that they liked chocolate (Figure 16), confirming the wide acceptance of this food among children, something widely documented in the scientific literature (Beauchamp & Cowart, 1987). However, it is important to highlight that these same children reported consuming the candy in moderation, that is, they enjoy the taste, but demonstrate some control over the frequency of ingestion. Only two children reported consuming chocolate whenever possible, evidencing a more permissive and potentially worrisome pattern.

This information is relevant in several aspects. First, they reflect a balanced relationship with a food with high sensory appeal, which can be considered an advance in the contemporary scenario of massive exposure to ultra-processed products and aggressive marketing strategies aimed at children (Monteiro et al., 2019; Cairns et al., 2023). The fact that most children claim to consume chocolate in moderation indicates that dietary guidance strategies and the mediation of parents, caregivers and teachers are contributing to the formation of more conscious habits (Pearson et al., 2009; Silva, Bezerra & Claro, 2025).

According to Beauchamp and Cowart (1987), the taste for sweet foods is natural to human beings, being associated with biological, cultural and environmental factors. However, control over the consumption of added sugars can be learned and socially reinforced, especially in contexts where there is food education, dialogue about health, and diversified food supply (Dallazen et al., 2022). Thus, even though it is natural to like sweets such as chocolate, the ability to regulate consumption according to health or received guidance demonstrates dietary maturity and represents a positive sign of the effects of early nutritional education.

Figure 16

What is your opinion about chocolate?

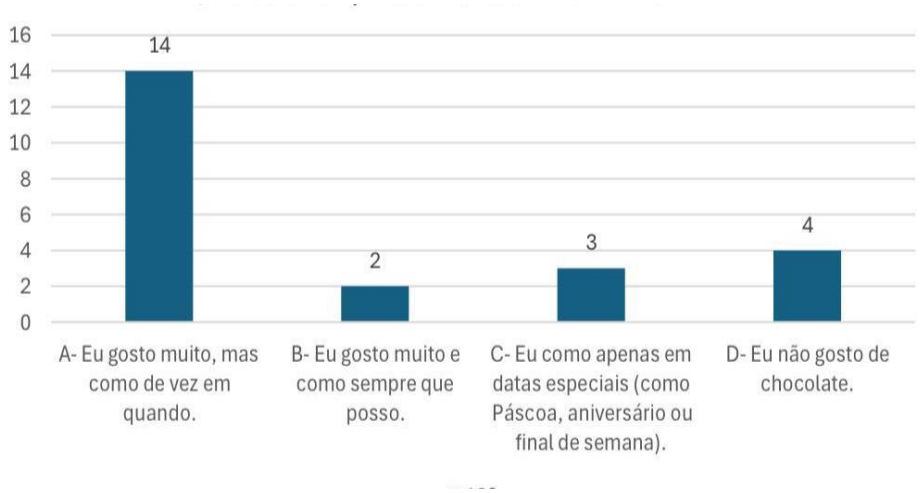
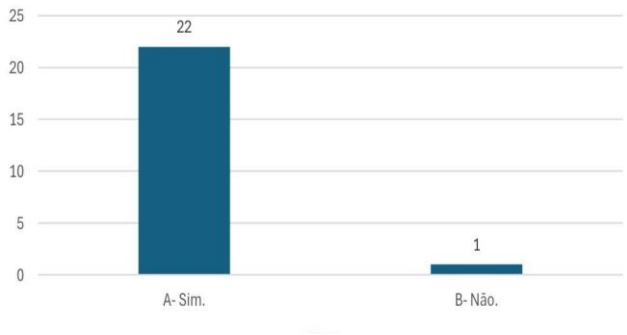


Figure 17 reveals that almost all the children interviewed (22 out of a total of 24) demonstrate that they know that eating healthy brings health benefits. In addition to recognizing the importance of this behavior, the children were able to correctly relate the concept of healthy eating to the reduction of calories, fats and sugars, showing a significant degree of understanding of the basic principles of balanced nutrition. This finding is in line with the studies of Mennella (2007), which point out that, even in childhood, children are capable of building notions about food health, especially when exposed to consistent educational contexts.

This high level of food awareness among children is quite expressive and can be interpreted as a result of good educational practices both in the school and family environment. Schools that integrate nutritional education content into their pedagogical activities, combined with parents and caregivers who are attentive to their children's food choices, collaborate directly in the formation of healthier values and habits. When children are able to verbalize concepts such as "too much fat is bad" or "too much sugar can harm health," it indicates that they have not only heard these messages, but have assimilated them to a significant degree.

Figure 17

Do you know the benefits of food?



The analysis of the data reveals a worrying scenario in relation to eating habits during the school period (Figure 18). Only 7 children, out of a total of 24, reported taking healthy snacks on a regular basis. Another 9 said they bought their snacks directly in the school canteen, while the rest reported adopting a combination of healthy and unhealthy foods.

This situation highlights a significant gap in the consistency and quality of school meals, reinforcing the challenge of promoting healthy habits continuously and effectively among children. Although some children have knowledge about what would be an appropriate snack, the data show that this knowledge does not always translate into daily practice.

The influence of the school environment is central to this process. The school is a privileged space for socialization and learning, capable of reinforcing (or compromising) positive behaviors related to health (Pearson, Biddle & Gorely, 2009). Recent studies confirm that integrated school interventions, especially those involving the active participation of families, are more effective in improving the quality of children's diets (Silva, Bezerra & Claro, 2025).

The fact that 9 children buy snacks in the canteen may indicate a restricted supply of healthy options in these establishments. Brazilian evidence shows that, in many schools without strict nutritional regulations, ultra-processed foods rich in sugar, fat, and sodium still predominate, such as snacks, soft drinks, and industrialized sweets (Monteiro et al., 2019; Nobre et al., 2023). This reality contributes to the consolidation of inadequate eating habits from an early age, with negative repercussions on health in the short and long term (Santos et al., 2024).

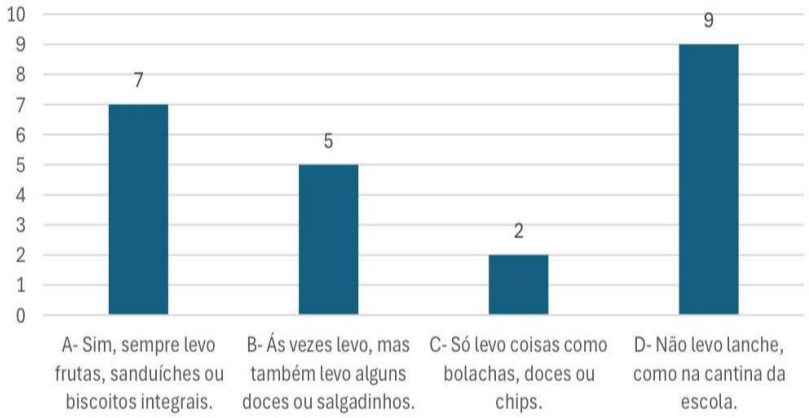
In addition, the choice of part of the students to combine healthy and unhealthy foods demonstrates an attempt at balance, but still without solid guidance or systematic incentive. This scenario may be related to the lack of involvement of families, the absence of stricter

school policies on the type of snack allowed, or even the economic limitation to access healthy foods, such as fruits, yogurts, and homemade preparations (Brasil, 2014).

Thus, the data in Figure 14 reinforce the urgency of intersectoral strategies, involving school, family and public policies, so that school snacks are not only a meal, but also a pedagogical opportunity to consolidate healthy eating practices.

Figure 18

When you go to school, do you bring a healthy snack?



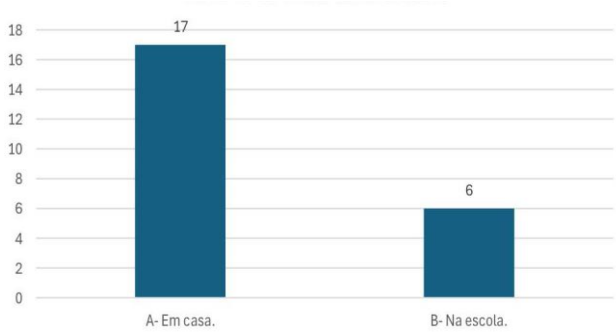
The analysis of Figure 19 shows that most of the children interviewed consume fruit at home (17), reinforcing the role of the family as the main influencer of eating habits. According to Pearson, Biddle and Gorely (2009), parents and caregivers act as essential behavioral models: children who live with adults who regularly consume fruits, vegetables and minimally processed foods are more likely to reproduce these habits throughout life.

The home environment, as the place of the first food experiences, exerts a lasting influence on food preferences and choices (Birch & Ventura, 2009). Thus, the consumption of fruits at home contributes not only to immediate nutritional adequacy, but also to the formation of sustainable healthy eating patterns.

However, it is important to recognize that the promotion of healthy eating at home does not depend only on the will of those responsible. Socioeconomic, cultural, and time constraints strongly influence food choices, which may limit access to fresh fruits and vegetables in some contexts (Brasil, 2014; Jaime et al., 2020). Despite these challenges, the data suggest that when there is a family effort to offer fruits regularly at meals and snacks, the results tend to be positive, configuring a protective factor against inappropriate eating practices.

Figure 19

Where do you eat the most fruit?



When asked if they used to eat fast food (Figure 20), no child consumes it daily. Most do it rarely (13), while 10 consume it 2 to 3 times a week. Although daily consumption is not present among the group evaluated, the fact that almost half of the children attend this type of ultra-processed diet on a weekly basis (2 to 3 times) is already a warning sign, especially considering the cumulative effects of diets rich in saturated fats, sodium and simple sugars, which are striking characteristics of fast food foods.

Studies such as the one by Emond et al. (2020) point out that frequent consumption of fast food in childhood is directly associated with an increased risk of obesity, type 2 diabetes, and other chronic non-communicable diseases, in addition to contributing to the replacement of nutritious meals with options poor in nutritional value. Even though this habit is not yet dominant among the children evaluated, the weekly frequency reported by a significant portion requires attention and preventive intervention. This consumption pattern can be related to family practices, fast-paced routines, ease of access, and even emotional rewards, such as the use of fast food as a form of pleasure. Therefore, food and nutrition education, both in the school and family environment, is essential to deconstruct the association between pleasure and ultra-processed food, and at the same time, encourage healthier and more conscious choices.

Figure 20

How often do you usually eat fast food (hamburgers, pizzas, fried foods)?

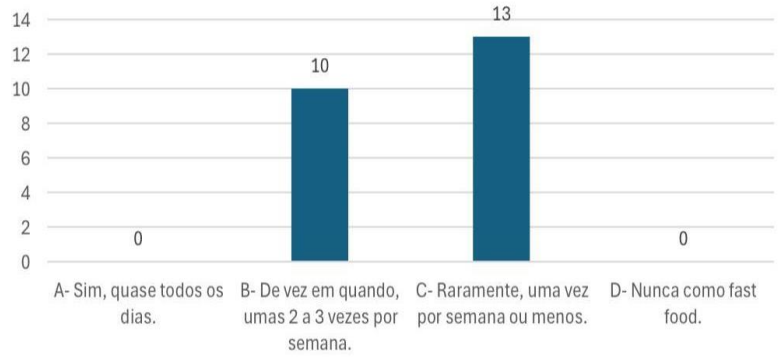


Figure 21 shows that a minority (7) of the children consume vegetables at every meal, another group (6) does not consume them every day, and another 16 consume them rarely or almost never. These numbers point to an important challenge in the formation of healthy eating habits, since the regular consumption of vegetables is directly related to the adequate intake of fiber, vitamins, minerals, and antioxidants, fundamental elements for growth, development, and disease prevention.

According to De Jesus et al. (2020), the home environment plays a determining role in the consumption of healthy foods, especially fruits and vegetables. Children who have greater access to these foods at home and are actively encouraged by parents or guardians to consume them have a higher frequency of intake and develop a preference for these items over time.

The low frequency observed in the consumption of vegetables can be related to several factors, such as lack of regular supply at home, family eating habits, rejection by flavor or texture, little familiarity with these foods or even cultural and socioeconomic aspects. In addition, the cost and perishability of vegetables can represent an obstacle for many families, especially in contexts of social vulnerability.

Figure 21

Do you usually eat vegetables in your meals?

Almost all the children interviewed (22) consider themselves healthy (Figure 22), which may be related to the awareness acquired in school and family environments that emphasize the importance of good life habits. Recent studies indicate that the perception of health among children can be strongly associated with educational messages, self-care practices, and stimulation of well-being transmitted in daily life (Silva et al., 2024). However, as Lima et al. (2023) point out, this positive perception does not always translate into effective health behaviors, especially when there is still a strong influence of ultra-processed foods on children's eating patterns.

The broader analysis of the data reveals a contradiction: although most children consider themselves healthy, food choices do not fully reflect this understanding. The reduced consumption of vegetables, the high frequency of ultra-processed snacks, and the low adherence to the habit of taking healthy snacks to school illustrate a distance between discourse and practice. This discrepancy has already been observed in other studies, which point out how the subjective perception of health can be biased by valuing some isolated behaviors, but not necessarily by the set of eating and lifestyle practices (Emond et al., 2020; Nobre et al., 2023).

In view of this, the importance of continuous food and nutrition education strategies is reinforced, which go beyond the level of awareness and advance towards concrete changes in the routine, involving both the school and the family as fundamental pillars of this process (Silva, Bezerra & Claro, 2025).

Figure 22

Do you consider yourself someone who eats healthy foods?

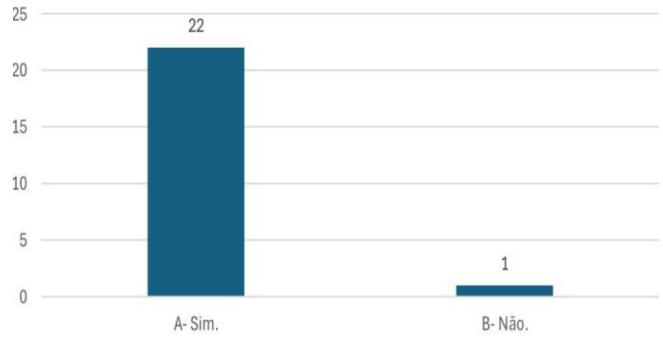
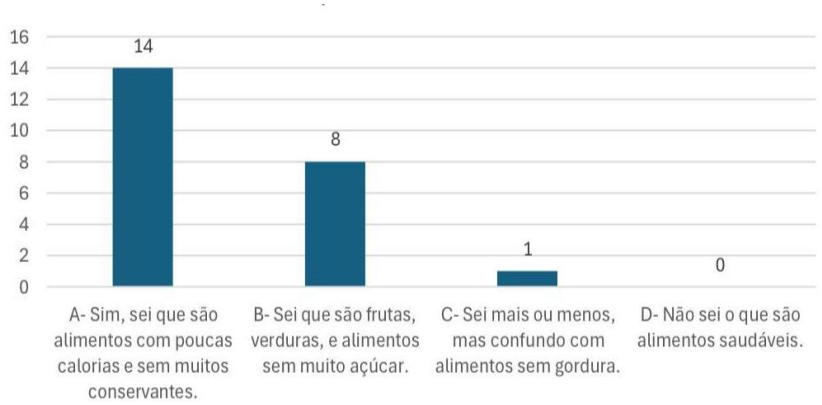


Figure 23 reveals that most children (14) understand healthy eating as the consumption of foods with fewer calories and preservatives, while 8 children associate this concept with the absence of sugar. These results indicate that there is a significant level of knowledge about healthy eating among children, corroborating previous studies that show that children can internalize basic nutritional concepts from an early age (Mennella, 2007).

However, more recent evidence suggests that knowledge does not necessarily guarantee adequate food choices. Research indicates that while children recognize "healthy" foods, factors such as ultra-processed food marketing, sensory preferences, and family influence continue to strongly shape their eating decisions (Emond et al., 2020; Nobre et al., 2023). Thus, the data in the Figure reinforces the importance of continuous educational strategies, which transform knowledge into consistent habits, involving school, family and public policies (Silva, Bezerra & Claro, 2025).

Figure 23

Do you know what healthy foods are?



As demonstrated through the questionnaires and oral observations of the students, the workshops had a positive change in their knowledge about healthy eating, they had interactions with all the "games" focused on learning that were done on the days, this factor demonstrates the interest of the children used for such a project. According to oral reports of the children and their interactions with the games, they were able to discern processed foods and natural/organic foods, foods loaded with fat and foods with low fat contents, demonstrating a great success of the "games" arranged by the project.

An extremely important factor observed was the quality of the students' answers in the "games" that gradually increased with the passing of the techniques and means of learning of the extension students, such as "which food is the richest in sodium", a simple question for the eyes of university students or adults, but not for children so young, And this question proved to be easy to answer orally at the time it was asked, demonstrating a great interest and positive impact on the food understanding of the children who were there, surprising the extension students positively.

Some testimonies of the children who participated in the workshops:

"I really like to eat fruits, especially grapes and apples. Although I don't know what they really know, I know that they are good for their health. Sometimes I also eat cookies or snacks, but now I'm going to try to improve!" (Gabriel, 11 years old, 6th grade).

"I hardly eat vegetables, only when there is soup in the school canteen. At my school, the snack we get is almost always bread, cookies and juices, so at home I eat more fruit." (João, 9 years old, 4th grade).

"I know that chocolate and coxinha are not healthy, but I like it a lot. So I eat only once in a while, like on the weekend. I think eating well helps us grow strong and have energy to play and study. And drink water too! Now I drink more water during the day, I even take my bottle to school." (Alice, 10 years old, 5th grade).

"With this lecture I learned that eating well is not just about not eating sweets, that fruits can be replaced by cookies, I also learned that each color of vegetables and fruits has a different vitamin and to choose what is good for us such as fruits and vegetables of various colors." (Julia, 12 years old, 7th grade).

The extension project provided marked impacts on the training of the students involved, going beyond the learning taught in college. Actively participating in the actions with the children of the communities of Recife awakened in the extension workers a more refined sense of social responsibility and empathy, strengthening their communication, listening and sensitivity to the realities experienced.

During the development of the playful activities of food education, the students were able to exercise and improve skills such as teamwork, creativity in the construction of educational strategies and the ability to adapt to different contexts. In addition, many reported greater confidence in public speaking and a clear and real evolution in the way they express themselves, both orally and in writing, being extremely connected to progress with presentations within the faculty.

The experience also brought important academic gains: students began to become more involved with research and scientific production, as was evident in the preparation of abstracts and reports for scientific events. These records not only reflect the trajectory lived, but also confirm the growth of each participant as a professional in training.

Each extension carried out became a space for genuine exchange, where teaching also meant learning. And, in the end, all participants followed their academic paths carrying with them the marks of this process: more mature, aware of their social role and with a practical background that will certainly contribute to their future performances.

Similar experiences also demonstrate positive results when playful strategies are used as a health education tool with children. A study conducted by Silva et al. (2021), highlights that activities such as games, storytelling, and interactive workshops were effective in promoting changes in the eating behavior of school-age children. As observed in this project, these actions favor active learning, arousing the child's interest and facilitating the understanding of concepts about healthy eating.

In addition, initiatives described by Oliveira et al. (2019) in low-income communities reinforce the importance of outreach as a link between the university and social reality, especially in tackling public health problems, such as poor diet and childhood obesity. The comparison between the projects shows that, regardless of the region, the use of playful approaches, when well planned and culturally adapted, has the potential to generate lasting impacts on the formation of healthy habits and the strengthening of the bond with the community.

Similarly, Santos et al. (2021) highlight that the application of playful strategies in children's food education contributes significantly to the development of critical thinking and children's autonomy in choosing foods. In his project "More Action and Nutrition in Childhood", the use of interactive activities with children aged 4 to 5 years promoted interest in healthy eating and the introduction to new flavors, results that are in line with those observed in the present study. These findings reinforce the importance of playful methodologies adapted to the age group and cultural context of the communities, evidencing their potential to strengthen healthy eating habits from childhood.

3 CONCLUSION

The educational intervention aimed to assess the children's level of knowledge about healthy eating habits and promote awareness through interactive workshops. Throughout the activity, it was possible to perceive the interest and active participation of the children, who demonstrated engagement in the proposed dynamics and presented advances in the understanding of more appropriate food choices. The results reinforce the relevance of promoting healthy habits from childhood, especially in the prevention of chronic non-communicable diseases. It was evident that factors such as inadequate diet and sedentary lifestyle are directly related to the emergence of conditions such as obesity, type 2 diabetes and cardiovascular diseases. In this sense, the educational action contributed positively to the children's learning, using playful resources that facilitated the understanding of the theme in a light and meaningful way.

In view of this, it is considered that the approach worked on has great value for public health, pointing to the need for continuity of educational actions conducted by health professionals in partnership with schools. It is essential that these initiatives are supported by public policies aimed at promoting child health, recognizing that the development of good eating habits in childhood contributes not only to the formation of healthier adults, but also to the dissemination of this knowledge within families and communities.

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