

 Maitê Telles dos Santos¹
 Bruna Bellincanta Nicoletto¹

¹ Universidade de Caxias do Sul
ROR, Curso de Nutrição, Área do
Conhecimento de Ciências da
Vida. Caxias do Sul, RS, Brasil.

Correspondence
Bruna Bellincanta Nicoletto
bbngehrke@ucs.br

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 Renata Brum Martucci

Complementary feeding of children in the municipality of Farroupilha-RS: a comparative analysis between public and private schools

Introdução alimentar de crianças do município de Farroupilha-RS: análise de escola privada e pública

Abstract

Introduction: Complementary feeding is the child's first exposure to foods other than breast milk, typically at six months of age. When introduced too early, too late, or inappropriately, it may compromise the child's healthy growth and development. **Objective:** To analyze complementary feeding practices among children attending one private and one public school in the city of Farroupilha, RS. **Methods:** A cross-sectional study was conducted with 25 children from a private school and 25 from a public school, all up to three years of age. Data were collected on caregivers, children, and on complementary feeding (caregiver age and education, the age at which children first received liquids and solid foods, among other variables). Differences between schools were assessed using Student's t-test, Mann-Whitney U test, Chi-square test, or Fisher's exact test, with statistical significance set at $p < 0.05$. **Results:** No significant difference was found in the average age of complementary feeding initiation between the two groups, with early introduction occurring in 32% of children in the private school and 40% in the public school. In both groups, fruit was the food group introduced earliest. In the public school, 38.9% of children consumed juice before 12 months of age, compared to 8% in the private school ($p = 0.014$). Sugar was consumed by 100% of public school children before 24 months, compared to 55% in the private school ($p = 0.005$). At 12 months of age, only 52.9% of public school children were eating food in pieces, compared to 100% of children in the private school ($p < 0.001$). **Conclusions:** Children continue to be introduced to foods either earlier or later than recommended, with a higher prevalence of inadequate practices regarding juice, sugar, and food consistency among public school children.

Keywords: Child Nutrition Sciences. Infant Nutrition. Feeding Behavior. Physiological Phenomena of Infant Nutrition. Complementary Feeding. Food Introduction.

Resumo

Introdução: A introdução alimentar é o primeiro contato da criança com alimentos além do leite materno aos seis meses de idade. Se realizada de forma precoce, tardia ou de forma incorreta, pode levar a prejuízos no

desenvolvimento e crescimento infantil. **Objetivo:** Analisar a introdução alimentar de crianças de uma escola privada e uma escola pública do município de Farroupilha/RS. **Métodos:** Estudo transversal, incluindo 25 crianças de escola privada e 25 crianças de escola pública, de até três anos de idade. Foram coletados dados sobre o cuidador, criança e sobre a introdução alimentar (idade e escolaridade do cuidador, idade que as crianças receberam pela primeira vez líquidos e alimentos sólidos, entre outras variáveis). Para testar as diferenças entre as escolas, foi utilizado o teste *t* de Student, Mann-Whitney, Qui - Quadrado ou Teste de Fisher. Foi considerado significativo $p < 0,05$. **Resultados:** Não houve diferença entre a idade média de introdução alimentar entre as escolas, sendo realizada de forma precoce para 32% das crianças da escola privada e para 40% da escola pública. As frutas foram o grupo alimentar introduzido mais precocemente nas duas escolas. Na escola pública, 38,9% das crianças consumiram suco antes dos 12 meses, em comparação a 8% das crianças da escola privada ($p = 0,014$). O açúcar foi consumido por 100% das crianças da escola pública antes dos 24 meses, em comparação a 55% das crianças da escola privada ($p = 0,005$). Aos 12 meses de idade, somente 52,9% das crianças da escola pública comeram alimentos em pedaços, em comparação a 100% das crianças de escola privada ($p < 0,001$). **Conclusões:** Crianças ainda recebem alimentos de forma precoce e tardia, havendo maior prevalência de inadequação da introdução de suco, açúcar e nas consistências para as crianças da escola pública.

Palavras-chave: Ciências da Nutrição Infantil. Nutrição do Lactente. Comportamento Alimentar. Fenômenos Fisiológicos da Nutrição do Lactente. Introdução Alimentar. Alimentação Complementar.

INTRODUCTION

The Guia Alimentar para Crianças Brasileiras Menores de Dois Anos (Food Guide for Brazilian Children Under Two Years Old), developed by the Ministério da Saúde (Brazilian Ministry of Health) as a reference for public policies on food and nutrition, and the Sociedade Brasileira de Pediatria (Brazilian Society of Pediatrics) recommend exclusive breastfeeding up to six months of age, followed by the introduction of complementary feeding.^{1,2}

Foods offered from six months of age onward should be prepared and adapted to meet children's needs, with *in natura* and minimally processed foods forming the basis of the diet.^{3,4} Regarding food texture, options include fork mashed foods, chopped foods, grated or shredded items, as well as soft pieces that the child can grasp and bring to the mouth. Liquid or blended foods are not recommended, as they prevent the child from experiencing the true taste and texture of the food.¹ From the beginning of complementary feeding, legumes, grains, protein sources, vegetables, leafy greens, and fruits should be offered to children.⁵ The complementary feeding approaches described in the literature include the traditional method, BLW (Baby Led Weaning), BLISS (Baby-Led Introduction to Solids), and the participatory method. These differ in aspects such as food consistency, use of spoons, and whether the child is allowed to self-feed using their hands.^{1,2}

Cultural factors, influenced by the shift in population dietary patterns over recent decades, have contributed to inadequate complementary feeding practices through the offering of foods high in sugar. Social, economic, and nutritional conditions of families and caregivers influence how complementary feeding is introduced.⁶ Studies suggest that better nutritional status and higher household income are associated with improved food choices during this stage.⁶⁻⁸

Complementary feeding is a crucial phase for establishing healthy eating habits that tend to persist through adolescence and adulthood, as well as for contributing to the prevention of non-communicable chronic diseases.^{9,10} Despite national guidelines on infant feeding, inadequate practices are still observed during this period, reinforcing the importance of studies that evaluate how complementary feeding is being implemented across different contexts.

This study distinguishes itself by comparing children from public and private schools, enabling the identification of potential disparities related to access to information and feeding practices across different socioeconomic profiles. To date, no similar studies have been conducted in the city of Farroupilha-RS, highlighting the relevance of this research to the local context. Therefore, the objective of this study was to assess the characteristics of complementary feeding among children attending one private and one public school in Farroupilha, Rio Grande do Sul (RS).

METHODS

Study design and sampling

This is a cross-sectional observational study based on a convenience sample. Caregivers of all children up to three years old enrolled in one private and one public school in the city of Farroupilha-RS, were invited to participate in March and April 2024. The schools were also selected by convenience. The questionnaires completed by caregivers aged 18 years or older were included. Questionnaires with incomplete data regarding the children were excluded. Children with clinical diagnoses affecting food intake, allergies, or food intolerances were not included.

The study was approved by the Comitê de Ética em Pesquisa da Universidade de Caxias do Sul (Ethics in Research Committee of the University of Caxias do Sul) under approval no. 5780584 (CAAE: 61074722.7.0000.5341). Participants consented to take part by signing an informed consent form. Questionnaires were completed anonymously, without identifying the child or the caregiver.

Data collection

Data collection took place in March and April 2024. A structured questionnaire, specifically developed by the authors for this study, was used, containing questions related to children's complementary feeding and caregivers' sociodemographic characteristics. To ensure consistency in conducting the research, the authors received prior training on questionnaire administration and procedures for distribution and collection. The instrument was sent to caregivers through the school diary, accompanied by an explanatory letter about the study and the informed consent form (TCLE). All communication was conducted exclusively via the school diary, without direct contact between researchers and participants. Caregivers were asked to return the questionnaire within one week. For cases where the questionnaire was not returned within this initial deadline, participation was encouraged again over the following two weeks. After the questionnaire was returned, caregivers received a folder containing information about healthy eating.

Caregivers data

The following caregiver variables were collected: sex, color, current age, education level, presence or absence of a partner, family income, number of children, maternity leave status, and self-reported weight and height. Caregivers' weight and height data were used to calculate body mass index (BMI), which was categorized as follows: underweight for BMI < 18.4 kg/m²; normal weight for BMI between 18.5 and 24.9 kg/m²; overweight for BMI between 25 and 29.9 kg/m²; and obesity for BMI > 30 kg/m².¹¹

Children's data

General variables related to each child were collected: sex, current age, gestational age at birth, birth weight, and whether the child attends a private or public school. Gestational age at birth was categorized as preterm (born before 37 weeks), term (born between 37 and 42 weeks), and post-term (born after 42 weeks).¹² Birth weight was categorized as low birth weight (<2,500 g), normal weight (2,500 g to 3,999 g), and high birth weight (>4,000 g).¹²

Dietary history

Regarding breastfeeding, it was verified whether exclusive breastfeeding was maintained until six months of age, the total duration of breastfeeding, and whether infant formula was used.

Complementary feeding was characterized by the age at which liquids (water and/or tea) or solid foods (defined according to the age of introduction of food groups) were first offered. For children born preterm, corrected age was used to assess complementary feeding characteristics.¹³

The age at which different food groups or nutrients (grains, vegetables, leafy greens, fruits, legumes, and meats) and meals (breakfast, morning snack, lunch, afternoon snack, and dinner) were introduced was assessed, along with the consumption of juice and sugar, and the consistency of foods at six and 12 months

(strained, blended, in soup form, mashed, or in pieces). Additionally, it was verified whether the child shared the family meal at 12 months and whether screens were used during meals.

For variables related to the age of introduction of food groups and meals, responses were given in months and then classified as “early,” “appropriate,” or “late.” Introduction of any food group or meal before six months was considered early. Introduction at or after seven months was considered late.¹ For the variables “juice” and “sugar,” responses were also given in months and then classified as “early” or “appropriate.” For “juice,” introduction after 12 months was considered appropriate. For “sugar,” introduction after 24 months was considered appropriate.¹

Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences, version 21.0 (SPSS Inc, Chicago, IL). Continuous variables were tested for normality using the Shapiro-Wilk test. Variables with a normal distribution were presented as mean $\pm$ standard deviation, while non-parametric variables were presented as median (interquartile range). Categorical variables were presented as absolute numbers and percentages. Comparisons between caregiver, child, and complementary feeding characteristics across private and public schools were performed using Student’s t-test for normally distributed numerical variables, the Mann-Whitney test for non-normally distributed numerical variables, Fisher’s exact test for categorical variables in 2x2 tables, and the Chi-square test for other categorical variables.

For the analysis of the variables “juice” and “sugar,” only data from children who had already consumed these items were considered. This included all children older than 12 months and those younger than 12 months who had already consumed juice, as well as all children older than 24 months and those younger than 24 months who had already consumed sugar. The significance level was set at $p < 0.05$.

RESULTS

A total of 33 caregivers from the private school and 41 caregivers from the public school participated in the study. There were seven refusals in the private school and 14 in the public school. Three questionnaires were excluded due to incomplete and/or unclear responses, resulting in 50 questionnaires analyzed, with 25 from the private school and 25 from the public school.

Sample characteristics

Among caregivers, in both the private and public schools, the majority were female (96% and 95.8%), had a partner (100% and 87.5%), had one child (68% and 58.3%), and had taken maternity leave (84% and 75%), with no statistically significant differences. Caregivers from the private school were more likely to be white ($p=0.001$), had a higher mean age ($p<0.001$), higher education level ($p<0.001$), higher household income ($p<0.001$), and lower BMI ($p=0.009$) compared to caregivers of children enrolled in the public school (Table 1).

Table 1. Characteristics of caregivers of children enrolled in private and public schools in Farroupilha-RS in 2024.

	Private School (n = 25)	Public School (n = 25)	P value*
Female caregiver, n (%)	24 (96.0)	23 (95.8)	1.000 ^a
Color, n (%)			0.001 ^b
White	25 (100)	14 (58.3)	
Black	0 (0)	1 (4.2)	
Mixed race	0 (0)	9 (37.5)	
Age, years	35.13 ± 3.98	27.42 ± 6.12	<0.001 ^c
Education level, n (%)			<0.001 ^b
Elementary education	0 (0)	8 (34.8)	
High School education	4 (16.7)	11 (47.8)	
Higher education	9 (37.5)	2 (8.7)	
Postgraduate education	11 (45.8)	2 (8.7)	
Partner presence, n (%)	25 (100)	21 (87.5)	0.110 ^a
Family income, BRL (R\$)	15000 (10000 - 20000)	2500 (1480 - 4000)	<0.001 ^d
Number of children, n(%)			0.596 ^b
1 child	17 (68.0)	14 (58.3)	
2 children	6 (24.0)	8 (33.3)	
3 children	2 (8.0)	1 (4.2)	
4 or more children	0 (0)	1 (4.2)	
Maternity leave, n (%)	21 (84.0)	18 (75.0)	0.496 ^a
BMI kg/m ²	23.86 ± 2.38	26.88 ± 4.83	0.009 ^c
BMI, n (%)			0.011 ^b
Normal weight	19 (76.0)	9 (37.5)	
Overweight	6 (24.0)	11 (45.8)	
Obesity	0 (0)	4 (16.7)	

^a Fisher's exact test; ^b Pearson's chi-square test; ^c Student's t-test, ^d Mann-Whitney.

Regarding the children, in both schools most were born at term (88% and 87.5%), with normal birth weight (87.5% and 80%), were not exclusively breastfed until six months of age (52% and 68%), and had received infant formula (72% and 79.2%), with no statistically significant differences. A statistically significant difference was found in the children's current age: 24.08 ± 6.03 months in the private school and 16.48 ± 8.17 months in the public school (p<0.001), as shown in Table 2.

Table 2. Characteristics of children enrolled in private and public schools in Farroupilha-RS in 2024.

	Private school (n = 25)	Public school (n = 25)	P value ^a
Female gender, n (%)	10 (40.0)	13 (52.0)	0.395 ^a
Current age, months	24.08 ± 6.03	16.48 ± 8.17	<0.001 ^b
Gestational age at birth, n (%)			1.000 ^c
Preterm	3 (12.0)	3 (12.5)	
Term	22 (88.0)	21 (87.5)	
Post-term	0 (0)	0 (0)	
Weight at birth, n (%)			0.571 ^c
Underweight at birth	3 (12.5)	4 (16.0)	
Normal weight at birth	21 (87.5)	20 (80.0)	
Overweight at birth	0 (0)	1 (4.0)	
Exclusive breastfeeding up to 6 months, n (%)	12 (48.0)	8 (32.0)	0.248 ^a
Total duration of breastfeeding, months	11.52 ± 8.28	9.04 ± 6.45	0.250 ^b
Use of infant formula, n (%)	18 (72.0)	19 (79.2)	0.560 ^a

^a Fisher's exact test; ^b Student's t-test; ^c Pearson's chi-square test

Complementary feeding

Regarding complementary feeding, in both schools, approximately 60% of the children began feeding appropriately at six months of age, with no statistically significant difference in the age of introduction. The food group introduced earliest in both schools was fruit (32%), as shown in Table 3.

Concerning juice, 38.9% of children in the public school consumed it before 12 months of age, compared to 8% in the private school ($p=0.014$). A significant difference was also observed between schools regarding sugar introduction: 100% of public school children consumed it before 24 months, compared to 55% of private school children ($p=0.005$) (Table 3).

As for food consistencies offered at six months, a statistically significant difference was found between schools: in the public school, 52% of children received blended foods and 48% were fed soup, compared to 16% and 20% respectively in the private school ($p<0.05$). At 12 months of age, only 52.9% of public school children were eating foods in pieces, compared to 100% of private school children ($p<0.001$). In both schools, most children were eating the same foods as the family by 12 months (96% and 76.5%) and were not exposed to screens during meals (88% and 83.3%), with no statistically significant difference between schools (Table 3).

Table 3. Characteristics of the complementary feeding of children enrolled in private and public schools in Farroupilha-RS in 2024.

	Private school (n=25)	Public school (n=25)	P value*
Age of complementary feeding introduction, months	5.52 ± 1.05	5.42 ± 0.91	0.631 ^a
Age of complementary feeding introduction, n (%)			0.534 ^b
Early	8 (32.0)	10 (40.0)	
Adequate	16 (64.0)	15 (60.0)	
Late	1 (4.0)	0 (0)	
Liquid complementary feeding, n (%)			0.591 ^b
Early	8 (32.0)	9 (36.0)	
Adequate	16 (64.0)	16 (64.0)	
Late	1 (4.0)	0 (0)	
Cereal complementary feeding, n (%)			0.580 ^b
Early	3 (12.0)	2 (8.3)	
Adequate	16 (64.0)	13 (54.2)	
Late	6 (24.0)	9 (37.5)	
Vegetable complementary feeding, n (%)			0.892 ^b
Early	5 (20.0)	5 (20.0)	
Adequate	17 (68.0)	18 (72.0)	
Late	3 (12.0)	2 (8.0)	
Leafy greens complementary feeding, n (%)			0.772 ^b
Early	6 (24.0)	4 (16.0)	
Adequate	16 (64.0)	18 (72.0)	
Late	3 (12.0)	3 (12.0)	
Fruit complementary feeding, n (%)			0.597 ^b
Early	8 (32.0)	8 (32.0)	
Adequate	16 (64.0)	17 (68.0)	
Late	1 (4.0)	0 (0)	
Legumes complementary feeding, n (%)			0.712 ^b
Early	4 (16.0)	2 (8.3)	
Adequate	15 (60.0)	16 (66.7)	
Late	6 (24.0)	6 (25.0)	

Table 3. Characteristics of the complementary feeding of children enrolled in private and public schools in Farroupilha-RS in 2024.

	Private school (n=25)	Public school (n=25)	P value ^a
B complementary feeding			0.661 ^b
Early	3 (12.0)	2 (8.0)	
Adequate	14 (56.0)	12 (48.0)	
Late	8 (32.0)	11 (44.0)	
Consumption of three meals a day, n (%)			0.226 ^b
Early	2 (8.0)	4 (17.4)	
Adequate	5 (20.0)	8 (34.8)	
Late	18 (72.0)	11 (47.8)	
Juice introduction (n=43), n (%)			0.014 ^c
Early	2 (8.0)	7 (38.9)	
Adequate	23 (92.0)	11 (61.1)	
Sugar introduction (n=33), n (%)			0.005 ^c
Early	11 (55.0)	13 (100)	
Adequate	9 (45.0)	0 (0)	
Food consistency offered at 6 months, n (%)			
Strained	0 (0)	3 (12.0)	0.235 ^c
Blended	4 (16.0)	13 (52.0)	0.016 ^c
Soup	5 (20.0)	12 (48.0)	0.072 ^c
Mashed food	21 (84.0)	19 (76.0)	0.480 ^c
Food in pieces	11 (44.0)	8 (32.0)	0.382 ^c
Food consistency offered at 12 months, n (%)			
Strained	0 (0)	0 (0)	-
Blended	0 (0)	3 (17.6)	0.059 ^c
Soup	2 (8.0)	6 (35.3)	0.045 ^c
Mashed food	6 (24.0)	11 (64.7)	0.008 ^c
Food in pieces	25 (100)	9 (52.9)	<0.001 ^c
Eat the same foods as the rest of the family at 12 months, n (%)	24 (96.0)	13 (76.5)	0.140 ^c
Screen use during meals, n (%)	3 (12.0)	4 (16.7)	0.702 ^c

^a Student's t-test; ^b Pearson's chi-square test; ^c Fisher's exact test.

DISCUSSION

The present study assessed the characteristics of complementary feeding among children in one private and one public school in the city of Farroupilha-RS.

In the sample analyzed, 32% of children in the private school began complementary feeding early, with a mean age of 5.52 ± 1.05 months. In the public school, 40% of children had consumed some solid or liquid food before six months of age, with a mean of 5.42 ± 0.91 months.

These findings are similar to those of other Brazilian cross-sectional studies, that identified a prevalence of 47.8% for the introduction of some type of food before four months of age¹⁴ and 56.8% for the introduction of liquids before three months of age.¹⁵ Another Brazilian cross-sectional study with suckling children found that 80% had received some complementary food before three months of age.¹⁶

Review studies suggest that early complementary feeding may be influenced by outdated guidelines that recommended introducing foods at four months of age, commonly starting with fruit, as well as by family beliefs that breast milk alone is not sufficient to nourish the child. In addition, in Brazil, there is a widespread but incorrect practice of giving water to children to quench thirst, and teas to calm them or relieve colic.^{17,18} The findings of the present study are consistent with these observations, showing that liquids and fruits were the food groups most frequently introduced early in both schools.

Complementary feeding introduced early can significantly compromise children's health by leading to the early discontinuation of breastfeeding. Exclusive breastfeeding up to six months of age is enough to meet all the nutritional needs of children in this age group, in addition to preventing respiratory infections and diarrhea.¹⁹ When the child is fed directly at the mother's breast, stimuli such as the exchange of warmth, smells, sounds, and touch occur in close contact between mother and baby, fostering emotional bonds that are important for child development.¹ This study found that exclusive breastfeeding up to six months of age occurred in 48% of children in the private school and 32% in the public school. These findings are consistent with a national population-based survey on child nutrition and feeding, which reported a Brazilian prevalence of 45.8% for exclusive breastfeeding up to six months.²⁰

Despite scientific evidence and public programs that promote breastfeeding, such as the Brazilian National Food and Nutrition Policy, breastfeeding rates in Brazil remain well below recommended levels.^{1,21} One possible factor that may have contributed to the discontinuation of breastfeeding in this study was the end of maternity leave, as returning to work outside the home can be a barrier to maintaining breastfeeding.

In the present study, for all food groups, there were children who received them late. To ensure the necessary variety of nutrients, legumes, grains, meats, vegetables, leafy greens, and fruits should be offered to children from the beginning of complementary feeding.^{1,5} Lunch and dinner should include one item from each food group and, if possible, more than one item from the vegetables and leafy greens group. At six months of age, the child should begin receiving three meals, which may consist of lunch, dinner, and a snack, or two snacks and lunch.¹ A Brazilian cross-sectional study found that meat was introduced too late into children's diets, around eight months of age.⁸ In the present study, the late introduction of three daily meals was noticed in both schools.

To allow children to experience the true flavor and texture of foods, it is recommended to mash the food with a fork, gradually progressing to more solid forms to promote the development of facial muscles and chewing ability. Foods in liquid form or processed in a blender are not recommended.¹ In this context, it is important to highlight that there are different methods of food introduction, such as the traditional method (food offered with a spoon, usually mashed), the BLW (Baby-Led Weaning) method, in which the child feeds

themselves with pieces of food from the beginning, and the participative method, which combines aspects of the previous two. Each approach has particularities and requires appropriate guidance to ensure safety and balanced nutritional supply.

The present study found that these recommendations are still not followed by all caregivers, since at 12 months only 52.9% of children in the public school were receiving food in pieces. Similarly, a cross-sectional study with children from public daycares in São Paulo observed that 49% of the children received food with inadequate consistency during the introduction phase, being blended in a blender or strained.²¹

In this study, it was found that fruit juice was offered early to 38.9% of the children in the public school, data that corroborate a cross-sectional study conducted with children served in primary care in Piauí, where 27.3% received fruit juice as one of the first foods offered.²² Another cross-sectional study conducted at a primary care unit in Ceará also found that fruit juice was offered to 24.3% of the children at the beginning of complementary feeding.²³ Fruit juice is not recommended for children under 12 months because they may get used to drinking juice and not experience the texture of whole fruits. There may also be a reduction in fiber intake if the juice is strained, and if the child gets used to drinking juice to quench thirst, they may have difficulty accepting water. Additionally, parents might offer sugary drinks such as nectar, soft drinks, or powdered juice with the mistaken belief that these are healthy foods.¹

The present study found that 100% of the children in the public school received sugar before 24 months of age. A national population survey revealed that 80.5% of Brazilian children consumed ultra-processed foods, especially sweet cookies, between six and 23 months of age.²⁴

The Ten Steps for Healthy Eating for children under two years, from the Ministério da Saúde (Brazilian Ministry of Health), recommend avoiding the consumption of sugar, canned foods, fried foods, soft drinks, processed meats, salty snacks, and other treats in this age group.¹ Children have an innate preference for salty and sweet flavors, and early exposure to these foods can further increase their preference for such products due to the physiological effects they provide, such as satiety and energy supply.^{25,26}

Sweets, besides being nutritionally unnecessary and impairing the absorption and digestion of micronutrients, can also compromise the intake of healthy foods such as meats, fruits, and vegetables, which are essential for the proper development and growth of the child.²⁶⁻²⁸ Clinical trials suggest that the early introduction of sugary foods is associated with an earlier age of diagnosis of type 1 diabetes mellitus, increased risk of childhood overweight and obesity, higher concentrations of low-density lipoprotein (LDL), total cholesterol, and increased BMI even in the first years of life.²⁹⁻³²

The results of this study showed that the caregivers of children in the public school were younger, had lower education levels, and had lower family income compared to the caregivers of children in the private school. These caregiver characteristics may be related to the early introduction of juice and sugar for the children attending the public school.

A cross-sectional study that analyzed the complementary feeding in children from the Southern region of Brazil showed an association between lower maternal education level and lower monthly family income with a higher prevalence of introduction of non-recommended foods in the first year of life.¹⁴ Lower education levels reflect reduced access to information about healthy feeding practices, as well as possible difficulties related to reading and understanding educational materials.³³⁻³⁵ Furthermore, cross-sectional studies show that low-income families exhibit greater dietary inadequacies, possibly due to the lower cost per calorie of highly processed foods compared to more nutritious and perishable foods like fresh fruits, vegetables, and meats, making the latter less accessible to economically disadvantaged populations.^{33,34,36-38}

In addition to these factors, overweight and obesity were also more prevalent among caregivers in the public school in the present study, potentially exerting a negative influence on complementary feeding characteristics. Cross-sectional studies have shown that mothers with higher body weight are less likely to teach their children about healthy eating and to encourage them to consume a balanced diet with a variety of foods.^{39,40} Other cross-sectional studies have shown that mothers who are overweight or obese are more likely to have less control over their children's eating habits, lacking a home environment favorable to monitoring the consumption of healthy foods.^{41,42}

The limitations of this study include the use of self-reported information, which is subject to recall bias and may lead to inaccuracies regarding the timing of food introduction. Additionally, the results may have been influenced by the fact that the study was conducted by nutrition professionals, potentially causing respondents to provide socially desirable answers rather than accurate accounts. Furthermore, the convenience sampling method and small sample size limit the generalizability of the findings. However, this study provides a comprehensive analysis of the characteristics of complementary feeding in one private and one public school, contributing valuable information on the age at which complementary feeding begins, the types of foods introduced prematurely or late, and caregiver variables that may be associated with inadequate complementary feeding practices.

CONCLUSION

This study made it possible to identify the characteristics of complementary feeding among children in a city in Rio Grande do Sul, highlighting that some children still receive foods either too early or too late. Between the analyzed schools, the study found a higher prevalence of inappropriate introduction of juice, sugar, and food consistencies among children in the public school. These findings are important for encouraging local policymakers and health professionals to prioritize nutritional education, improving the guidance given regarding the appropriate timing for complementary feeding. Furthermore, it is essential that future studies investigate the application and impacts of different complementary feeding methods, such as the traditional approach, Baby-Led Weaning (BLW), and the participatory method, to better understand their effects on nutritional development, chewing skills, and children's autonomy.

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Contributors

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