LUMEN ET VIRTUS

Exploring the use of screen during children's meals: An evaluation in the North and South regions of Brazil

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ABSTRACT

INTRODUCTION: The use of television by children during meals establishes changes in food and behavioral choices. In this context, the physiological signs of hunger and satiety are modified, causing a preference for ultra-processed and high-calorie foods. One of the main reasons for carrying out this practice is the primary attitude of those responsible for acquiring this habit. In this way, this act can promote relevant organic consequences for infants.
OBJECTIVE: To compare the prevalence of television use during meals by children aged 5 to 9 years in the North and South regions of Brazil.
METHODS: This is a cross-sectional, quantitative and descriptive study, with records from the Food and Nutrition Surveillance System (SISVAN). Data were collected regarding screen use during meals by children aged 5 to 9 years, from 2019 to 2023, in the North and South regions of Brazil. The variables considered for analysis included the average number of child visits, as well as the average amount who had access to the screen at the time of feeding. The year, sex, color and peoples/communities were also considered.
RESULTS: During the 5 years analyzed, it was possible to verify an average of 47,714.2 visits of children between 5 and 9 years of age, in the northern region of the country, with 23,334.8 being the

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average value corresponding to those who had the habit of having meals while watching television. In the South, the average number of consultations was 52,702.8, of which the average value of children who presented the behavior in question corresponded to 26,460.8. In the first region, the predominant sex and color were, respectively, female and brown, while in the second, male and white. Finally, the years 2022 and 2023 exceeded the average value of the five years, in relation to the habit of watching TV during meals and the category "others" stood out for peoples/communities in the two regions analyzed.
CONCLUSION: Therefore, the use of screens during meals in children aged 5 to 9 years in the North and South regions is high and increasing, with the South region being the most prevalent with emphasis on the white ethnicity. The habit of using screens and eating during childhood can have great physical and mental consequences. Thus, it is of paramount importance to monitor the time of exposure to age for the prevention of diseases in adult life.

Keywords: Mealtime, Television, Child.

INTRODUCTION

Screen time is a broad term commonly used to refer to a set of sedentary behaviors, including watching television (TV), playing video games, using the computer, as well as other electronic devices, such as smartphones and tablets. This practice has been associated with a range of physical, social, and emotional impacts in childhood. Also in this regard, the use of screens during meals is linked to distracted eating by the child, which can lead to excessive food consumption (Jensen M.L. *et al*., 2022).

In Australia, about a third of children eat while watching TV, in at least one of the daily meals, in addition to the occurring, due to this behavior, higher intakes of sugary drinks and ultra-processed foods, characterized by richness in energy and poverty in nutrients. As a result, these children consumed fewer fruits and vegetables, with impaired diet quality, indicating greater chances of developing nutritional pathologies at this stage of life (Litterbach, *et al*., 2022).

At the national level, the research by Leite, L.N., Damaceno, B.S., Lopes, A.F. (2022) analyzed that half of the children out of a total of 218 assisted in São Paulo, by a Non-Governmental Organization (NGO), in the municipality, are exposed to some type of distraction during meals, with an emphasis on a greater correlation between screen use and the consumption of ultra-processed foods (especially soft drinks and frozen foods).

It is important to note that children's eating habits are influenced by family, school, friendships, culture and socioeconomic level. These factors play an important role in the formation of eating habits, which can affect health throughout life (Linhares, F.M.M. *et al*., 2016). One of the main reasons for children's exposure to television at mealtimes is the parental behavior of having their meals by handling this electronic device, promoting children's simultaneous interest in repeating this action (J.M., Coelho, T.A.A., Silva, R.F.G., 2023).

Therefore, it is imperative to evaluate, in a Brazilian context, the scenario of screen use during infant feedings. A detailed understanding of this public that is exposed to this practice will allow a more precise direction of public health actions, facilitating the work of professionals in combating this problem.

Recognizing that different contexts have different impacts on the child's eating routine, the objective of this research is to compare the prevalence of television use during meals by children aged 5 to 9 years in the North and South regions of Brazil. Based on the data found, it is intended to promote a more effective direction for health actions aimed at providing guidance on this practice to those responsible for this practice.

METHODOLOGY

The present study was carried out in accordance with the principles established in the Nuremberg Code, the Declaration of Helsinki and Resolution No. 466/2012 of the National Council for Ethics in Research (CONEP). In addition, due to the type of study, there was no need to submit to an ethics and research committee, since secondary data were used.

This is a cross-sectional, quantitative and descriptive study, with records obtained from the consolidated public report on food consumption available in the Food and Nutrition Surveillance System (SISVAN). Information was collected regarding the habit of having meals watching television, by children aged 5 to 9 years, in the period from 2019 to 2023, in the North and South regions of Brazil. The purpose of the research is to comparatively analyze the prevalence of screen use by children at mealtimes, between the extremes of the country - North and South.

The variables considered for analysis included the average number of child visits, as well as the average amount of access to television at the time of feeding, during the 5 years selected. The year, sex and color were also considered. There were no exclusion criteria, given that the platform already provided the data with the appropriate filtering for the research in question.

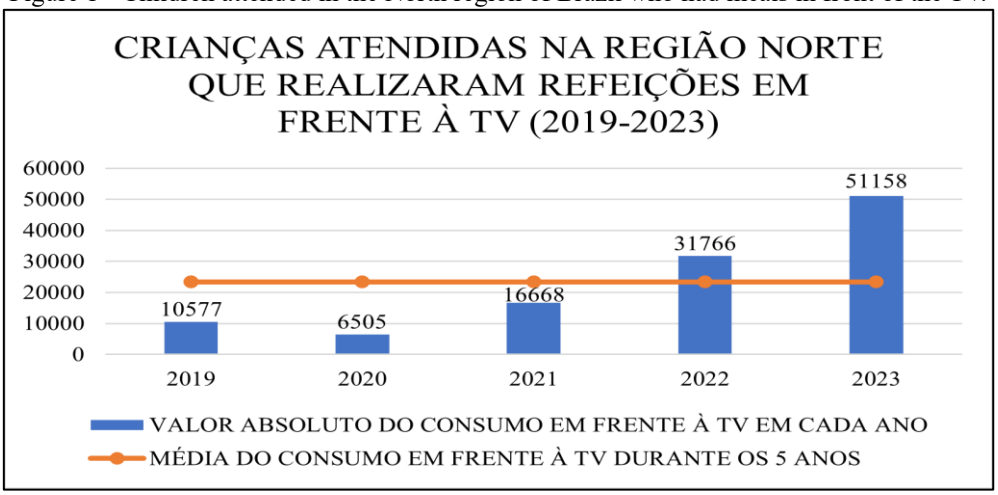
Microsoft Excel 2021 software was used to tabulate data, such as calculations, construction of graphs and tables. In turn, for descriptive as well as organizational assistance, Microsoft Word 2021 was used.

RESULTS

From the collection of information recorded on the SISVAN platform, a total of 238,571 children aged 5 to 9 years were served in the Northern region of Brazil, of which 116,674 (48.90%) had the habit of having meals while watching television. The average number of consultations during the selected years corresponded to 47,714.2. The average value of the public in the condition presented, in turn, was 23,334.8.

The years 2022 and 2023, in absolute values, exceeded the average of the five years, being represented, respectively, by 31,766 and 51,158 infants, who used a screen at mealtimes.

Figure 1 - Children attended in the North region of Brazil who had meals in front of the TV.



Source: authors, 2024.

Regarding gender, there was a slight difference in the prevalence between females and males. However, girls were the majority, with about 58,342 (50.00%) presenting the habit in question. Boys accounted for 58,332 (49.99%).

Figure 2 - Distribution by sex in the North region of children who ate meals in front of the TV.

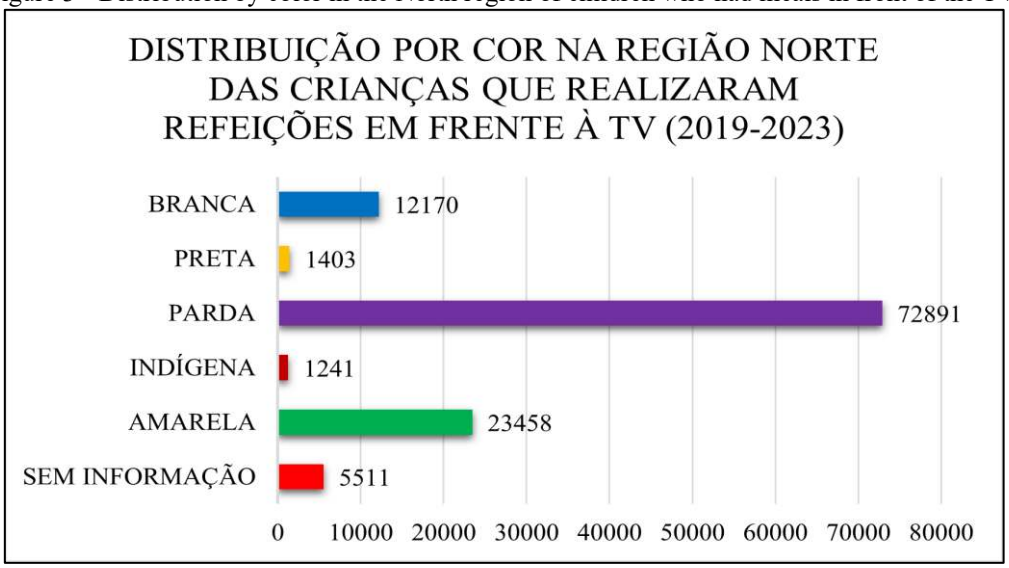


Source: authors, 2024.

In relation to race/color, brown individuals stood out, with a total of 72,891 children (65.57%), followed by yellow individuals with 23,458 (21.10%). The indigenous public, on the other hand, obtained the lowest value, with a record of 1,241 (1.11%). However, it is extremely important to point out that the values found for this variable may not be reliable to reality, since when first analyzing race/color individually and, later, adding them up, the total found (111,163) was different from that previously reported (116,674). Thus, about 5,511 children do not have this record, which

can be justified by the non-completion of this information during the service or a possible error in the system.

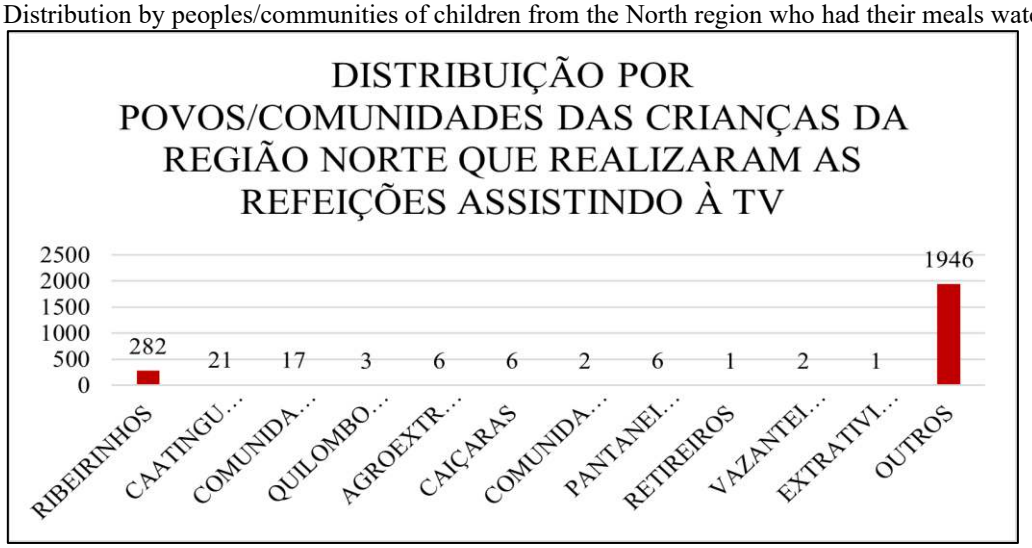
Figure 3 - Distribution by color in the North region of children who had meals in front of the TV.



Source: authors, 2024.

Finally, it is also possible to evaluate, in the northern region of Brazil, the habit of having meals watching television in a distribution by peoples and communities, of which 1,946 fit into the "other" category. In second place, riverside dwellers predominated in notifications, with 282 children. Many categories included in this parameter did not have records or the total number of infants with this behavior was 0, within a very small sample space of consultations, ranging from 1 to 5.

Figure 4 - Distribution by peoples/communities of children from the North region who had their meals watching TV.

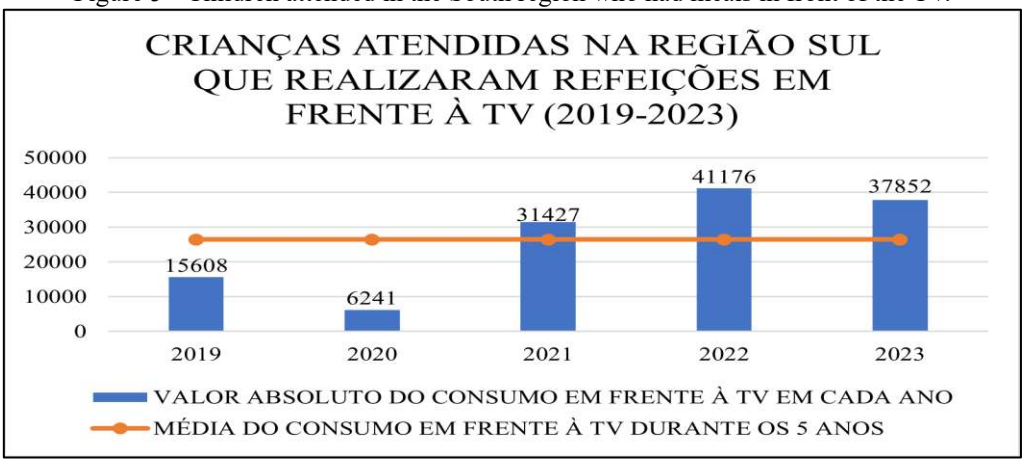


Source: authors, 2024.

With regard to the southern region of Brazil, a total of 263,514 children were registered in the respective age group. Of these, 132,304 (50.20%) children used television during meals, which resulted in an average audience of 26,460.8 during the period from 2019 to 2023. Regarding the number of consultations, the average value represented 52,702.8.

In the annual distribution, the years 2022 and 2023 were the ones with the highest number of children who used a screen during meals, corresponding to 41,176 and 37,852, respectively, demonstrating numbers higher than the average of the annual public established in the period of the five years analyzed. On the other hand, the year 2020 was the one with the least reported attendance and consequently the lowest number of infants who used screens at the time of their feeding, with 6,241 individuals out of a total of 13,004 children monitored.

Figure 5 - Children attended in the South region who had meals in front of the TV.



Source: authors, 2024.

Regarding gender, a similar prevalence was observed between females and males. However, males, among infants aged 5 to 9 years, were the ones who used screens slightly more at mealtimes, totaling 66,965 (50.6%), compared to females, who represented 65,339 (49.4%).

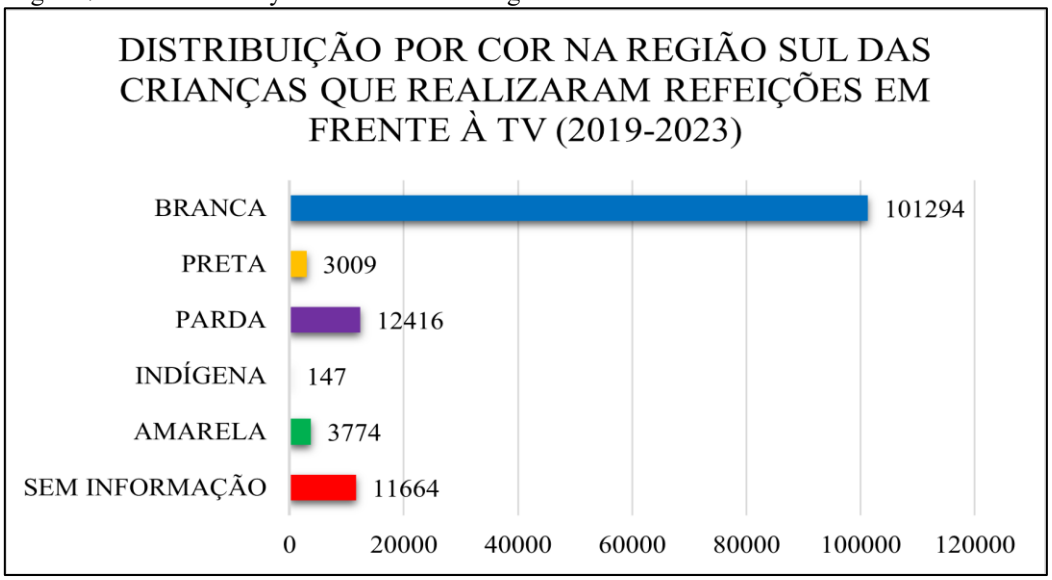
Figure 6 - Distribution by sex in the South region of children who had meals in front of the TV.



Source: authors, 2024.

At the same time, white children were predominant in the practice of using screens during feeding, representing 76.56% with 101,294 infants, followed by brown children with 12,416 children (9.3%). On the other hand, indigenous children were the ones who represented the smallest number with 147 individuals (0.1%). Similar to the North region, the values found in this variable may not be consistent with reality, given that also when summing up the variables, the total found (120,640) was divergent from the total number of children who used screens during meals (132,304). This, in turn, resulted in about 11,664 children without registered race/color information, which can also be justified by the non-completion of this information during the service or a possible error in the system.

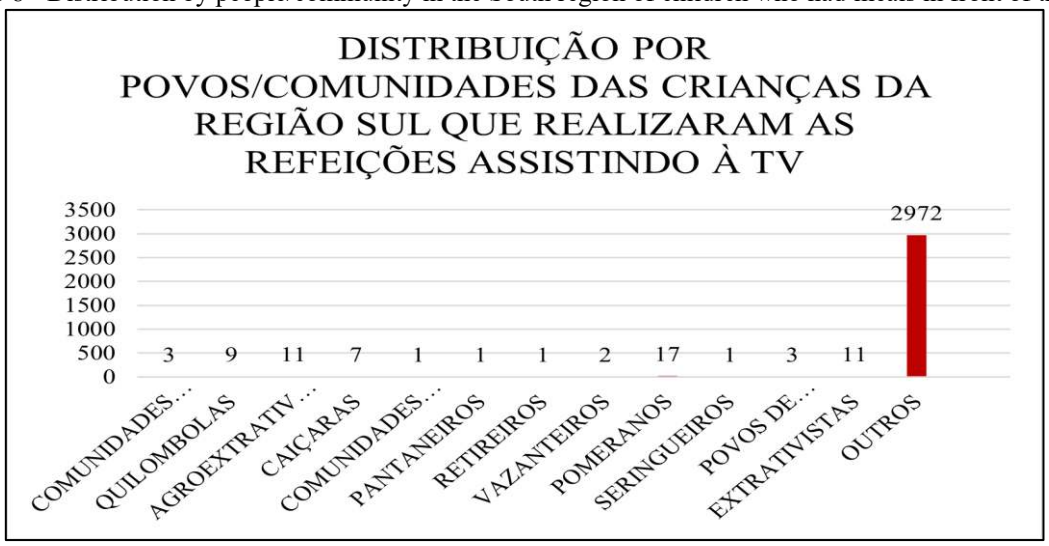
Figure 7 - Distribution by color in the South region of children who had meals in front of the TV.



Source: authors, 2024.

Finally, with regard to the distribution of infants by peoples and communities, many children notified were grouped under the item "Others", totaling 2,972 individuals during the period, followed by Pomeranians (17) and agroextractivists (11). However, there was a predominance of the same problem of not filling in information during care or possible errors in the system, given that the absolute numbers recorded add up to information for 3,030 children, not explaining the people/community of 129,274 individuals. In addition, many categories of the peoples described had a total of 0 individuals, and others varied in a very small sample space, from 1 to 9.

Figure 8 - Distribution by people/community in the South region of children who had meals in front of the TV.



Source: authors, 2024.

DISCUSSION

Based on the results obtained, the high number of children aged 5 to 9 years who watched television during meals in the North and South regions of Brazil in the period evaluated was notorious. The South had a higher average number of infants with this habit, but this difference may be linked to the average total number of consultations performed, which was higher in this region.

Another pertinent aspect is the disparities in access to the media in the national territory. Brazil has instituted a series of policies to expand connectivity across the country, however, such actions failed to consider the huge technological gaps between regions. Thus, the South region skyrockets in households connected by connection via TV cable or fiber optics (67%) and that have higher connection quality, compared to only 52% of households with this connection in the North region, since this macro-region concentrates more disadvantaged social classes and lower technological investments (BRASIL, 2022).

Regarding the predominant gender, there was divergence between the two regions presented. In the north, despite a tiny difference, the total number of girls was prevalent, in the south, in turn, most of the children who had the behavior in question were boys. This is a complex variable of

analysis and in the current literature no studies were found that could justify this situation. However, it is possible to draw a parallel to the 2022 Census, which revealed that in the age group from 5 to 9 years old, the male sex was the majority, with 978,924 in the south of the country and 793,625 in the north (IBGE, 2022), diverging from SISVAN only in the latter region.

Regarding the ethnic/racial profile that makes up Brazil, it is known that the country was made up of populations of different origins, which spread throughout the territory (NASCIMENTO, 2024). Thus, the 2022 Census recorded mostly a percentage of browns (67.2%), while the South, whites (72.6%). These data corroborate the results found in the results of this study, with a higher proportion of white children in the south and brown children in the north, following the general ethnic/racial composition of their respective regions (IBGE, 2022).

In relation to the peoples or communities that have the habit of using screens during meals, in the North region, the "RIBEIRINHO" were the largest people, behind only the "OTHERS" category. In the South region, the "POMERANIANS" were the most prevalent, only behind the "OTHERS" category. Far from urban centers, riverside dwellers live in an environment with more natural characteristics, on the banks of rivers. These, even with socioeconomic difficulties, present, in most cases, a television set at home, because due to the conditions of vulnerability, it becomes the moment of family interaction and leisure regardless of age (FUSER, B. & ABREU, P., 2012). The Pomeranians are a peasant community that lives from family farming, living in a traditional way, preserving the habits of their people. However, contact with other peoples, such as the urban population, also includes the consumption of electronic devices, such as cell phones and television (BERWALDT & NOGUEIRA, 2022).

In general, it is necessary to understand this challenging scenario, present in both regions of Brazil, in which children spend hours passively in front of the TV, contradicting the guidelines of the World Health Organization (WHO) in which children under 2 years old should not have any contact with television, children from 2 to 5 years old should use a maximum of 1 hour a day and those from 6 to 10 years old a maximum of 2 hours a day day (UN, 2019).

In recent decades, the advent of Information and Communication Technologies (ICTs) has introduced television as a traditional means of family gatherings, commonly held together with daily meals, often considered as privileged moments of conviviality. However, the habit of watching TV can prove to be a distracting activity, which compromises family cohesion and nutrition, especially for younger children (PENHALVER, 2005).

In this sense, children at an increasingly early age have access to television as a form of passive distraction in family contexts of financial need, composed of single mothers inserted in the labor market, without the availability of support networks or low access to public services that share the care of the infant, such as daycare centers and full-time schools. In other realities, the use of TV

by children acts as a quick solution when they refuse food or show difficult behavior in the act of eating, as well as a way to guarantee parental leisure (BRASIL, 2023).

Regarding the dietary consequences, the study by Veloso & Almeida (2022) showed that children who watch television for more than 5 hours are three times more likely to be overweight than those who watch for less than 2 hours a day. This aspect is influenced by the appealing food advertising present in the television media, which induces the consumption of the advertised products, which are often fast-foods and ultra-processed foods, which contribute to the development of childhood overweight/obesity and associated chronic diseases, such as hypertension and diabetes. Thus, active outdoor play and even social interaction are impaired (VELOSO, M. DAS G. DE A.; ALMEIDA, S. G. DE., 2022).

In addition to dietary impacts, exposure to blue LED light emitted by television also impairs the quality of children's sleep by making them more alert. In cases of overexposure, there is a reduction in melatonin, the sleep hormone, which has implications for child growth and development, such as precocious puberty (SANTANA, M. I.; RUAS, M.A; QUEIROZ, P. H. B., 2021). The study by Bozzola E. *et al*. (2022) noted that TV abuse is also related to poor school results, reduced concentration, and procrastination, leading to reduced creativity, imagination, thought organization, and information comprehension skills. In addition, it showed that excessive use of screens generates negative effects on children's brain development.

Therefore, parental participation in creating healthy rules for television use, especially during meals, is also important to include moments of family connection. In this process, it is essential that parents are reference models regarding low TV use, transforming the moment of eating into a playful experience that promotes the child's attention to what they eat and the surrounding environment (GRILLO *et al*, 2023). Thus, it is up to parents to help plan a routine with adequacy of excesses, developing activities that stimulate a good development of the child's intellect. Finally, identifying and avoiding early and excessive television use by children is essential to avoid physical, mental, and behavioral disorders associated with problematic use.

CONCLUSION

Therefore, the use of screens during meals by children aged 5 to 9 years in the North and South regions is high and increasing, with the South region being the most prevalent in the white ethnicity. The habit of using screens and eating during childhood can have major consequences such as sleep changes, the emergence of sedentary habits, and delayed cognitive, linguistic and psychosocial development. Thus making it extremely important to use screens properly, not only during meals, in relation to exposure time, age and always carry out active supervision for the prevention of diseases that can have consequences until adulthood.

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