

Favourable and unfavourable aspects for the Adoption of a Healthy Diet in Families of Private Primary School Students

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Abstract— *This study aimed to know the understanding of the parents or guardians of students of a private school in Aracaju on favorable and unfavorable aspects for adopting a healthy diet for the family. Descriptive-exploratory qualitative-quantitative study. 40 students and 12 parents or guardians participated. The nutritional status of the students was evaluated using weight, height and their anthropometric indicators. The parents or guardians answered a sociodemographic questionnaire and their understanding on favorable and unfavorable aspects in the adoption of healthy eating was obtained by the technique of the focal group. 50% of the students presented overweight in the Body Mass Index for Age. The thematic analysis of content allowed to identify seven favorable and unfavorable aspects for the adoption of healthy food. Favorable aspects were: family organization, food supply, willingness and priority, and nutritional orientation; while the unfavorable ones were: time and money, family food habits and lack of knowledge.*

Keywords— *Food and nutrition education, health promotion, healthy diet, nutritional status, students.*

I. INTRODUCTION

The formation of eating habits is a process that starts from birth, with the feeding practices introduced by the parents, the first guardian for this formation, and extends through all other phases of the life cycle (Medonça, 2009, Yokota et al., 2010). The introduction of new foods implies the presentation of flavors, textures and colors, sensory experiences that will influence the food pattern to be adopted by the child (Barbosa et al., 2005).

In this context, the school has a relevant role in training future citizens through theoretical and playful mechanisms, which allow the consolidation of a healthy lifestyle from childhood, standing out as an adequate space for health education (Simurro, 2007).

It is noticeable that the recommendations of healthy eating are disseminated to the public through public policies, government programs, campaigns, involvement of health professionals and the media, which generates the thought that most people, in some way, can have access to that knowledge. However, what is observed in the habitual feeding of the Brazilian population is a standard considered unhealthy. These findings reiterate that, although knowledge contributes to the development and maintenance of dietary practices, its action is not enough, because even with professional guidance, adherence to the recommendations faces obstacles (Lindemann, Oliveira, & Mendoza-Sassi, 2016; Santos, 2002; Rangel, Lamego, & Gomes, 2012).

Although there are few studies that seek to know the difficulties for adopting a healthy diet, research carried out in Brazil (Santos et al., 2012), in European countries (Alquaiz & Tavel, 2009; Serour et al., 2007; Lindemann, Oliveira, & Mendoza-Sassi, 2016) and Asia (Petrovici & Ritson, 2006) lack of time, financial resources, willpower, difficulty in changing eating habits as unfavorable aspects in the adoption of healthy food, revealing that the problem is repeated in a global way, regardless of cultural aspects.

This study aimed to know the understanding of parents or guardians of students of a private school in Aracaju on favourable and unfavourable aspects for the adoption of healthy diet by the family.

II. METHODS

The present study was conducted at a private school in Aracaju. The project was approved by the Research Ethics Committee of the Adventist University Centre of São Paulo (UNASP) under CAAE 69571317.0.0000.5377 and by the school's director. Ethical aspects followed the recommendations of Resolution 466/12 of the National Health Council (Brasil, 2012).

This was a descriptive-exploratory study with a qualitative-quantitative approach with sample for convenience. Students from the evening period (fourth and fifth years), 67 students, as well as parents and/or guardians were invited to participate in the study. The invitation for the participation of the research occurred during the first meeting of parents of the second semester of 2017, with the necessary clarifications.

Only the students who presented the Informed Consent Form (ICF) signed by their parents or guardians participated in the research.

The research was conducted during the second half of 2017 with the participation of 40 students (59.7%) in the anthropometric evaluations. The parents or guardians participated in two moments, in the first, responding to a self-administered questionnaire ($n = 38$) and in the second, in the focal group ($n = 12$, 31.6%).

A self-administered questionnaire was sent to parents or guardians who signed the ICF. One containing sociodemographic variables, referring to consumer goods at home, public services and education of the head of the family and each father, separately. The socioeconomic classification followed the criteria established in the Brazilian Economic Classification, which divides economic classes into A, B1, B2, C1, C2 and D-E (ABEP, 2015), grouped in this study in A, B, C and D-E.

At the school, anthropometric measurements (weight and height) of the students were carried out during physical education classes, following the requirements of the Technical Standard of the Food and Nutrition Surveillance System - SISVAN (Brasil, 2011).

The nutritional status of pupils up to 10 years of age was determined by means of the Stature for Age (S/A), Weight for Age (W/A), Weight for Height (W/H) and BMI for Age (BMI/A) in Z-score and classified according to the standards proposed by the World Health Organization (Brasil, 2011).

Students over 10 years of age were evaluated for BMI/A and S/A indices. The values were expressed as Z-score and compared to the reference values for nutritional status classification recommended by Tanner (1986).

An individualized and confidential information was delivered, including the result of the nutritional evaluation of the student and the questionnaire answered

by the parent or guardian, with suggestion of multidisciplinary professional follow-up to contribute to the adoption of a healthy diet.

In order to evaluate the parents 'or guardians' understanding of the favorable and unfavorable aspects of adopting healthy food, we used the focal group, which is a fast and inexpensive technique for evaluating and obtaining data and qualitative information (Gomes & Barbosa, 1999).

The focus group strategy provides for data collection based on the planned discussions on a specific subject in a flexible and non-constraining environment (Westphal et al., 1996).

For the accomplishment of the focal group a lottery was made between the parents or guardian participants of the research obeying the amount of 10 parents or guardian of students of the 4th year and 10 parents or guardian of students of the 5th year, regardless of gender, race or social class. The draw took place in each classroom in the presence of the students, the teachers and the pedagogical coordinator. The participants were invited to participate in the focus group through a communiqué sent on their child's school schedule.

The focus group was attended by 12 parents or guardians, led by the researcher who at the beginning of the meeting reminded the participants of the research objectives as well as the methodology used.

The meeting was conducted by the researcher, based on guiding questions, encouraging participants to freely express their opinions, feelings and ideas on the proposed theme. The development of the focal group lasted 70 minutes and the dialogue was recorded using a microphone coupled to the portable computer.

All analyzes were performed using the statistical package SPSS 22 and GraphPad Prism version 6.0, both for Windows. The results were expressed as means + standard deviations and their respective 95% confidence intervals (95% CI). The normality of the variables was tested using the method of D'Agostino and Pearson. Comparisons between girls and boys were performed using Student's t-test. Prevalences were analyzed using the chi-square test and the results expressed in percentages.

To analyze the qualitative data, the transcription of the speeches for Word of the Microsoft Office package was done. According to Lervolino e Pelicioni (2001) there are two ways of analyzing the data collected in the focus group: the ethnographic summary and the data coding, via content analysis.

For this research was adopted the codification of the data through analysis of thematic content, proposed by Bardin (2009), with the aim of critically understanding the topic addressed. Knowing the subjects' speeches reveals the perceptions, meanings and understanding mechanisms

not revealed on the subject previously. According to Franco (2008), the results of the content analysis should reflect the objectives of the research and be supported by manifest and capturing clues within the scope of the communications issued.

The pre-analysis stage was performed through floating reading of the speeches transcribed from the focal group, in order to establish the themes, using as an indicator the repetition and relevance of the same. The construction of the themes, as well as the hypotheses, was elaborated *a posteriori* in an inductive (emic) way.

The emic approach adopted in this study is characterized by the view of the observers, internally, assuming a particular, unique and analytical posture (Rosa & Orey, 2012).

The process of exploration of the material happened after successive readings using the technique of cutting and sorting (Ryan & Bernard, 2003) que, which consists in identifying the speeches or expressions that stand out and then organizing them into sections of common sense, grouping the passages.

The sections were grouped in different colors according to the repetition of the speeches and similarities in the sense, thus giving rise to the categories of analysis (themes) (Bardin, 2009).

The analysis began in sequence prioritizing the construction of the codebook in order to present the themes, their definitions, how they should be applied (Bardin, 2009; Macqueen, McLellan, & Milstein, 1998) and its application by the researcher in charge.

The codebook consisted of five elements: the code (theme), abbreviation of the code, detailed description of the code, inclusion criteria (guidelines for when to apply the code) and examples (Macqueen, McLellan, & Milstein, 1998).

In the next step, the codebook was applied by two other coders who were free to create new themes and / or group existing themes. These two other coders were invited because they already work with the same methodology and are part of the research group "Food, food and health

promotion", the responsibility of the guidance of this research.

Because they were familiar with the research, methodology and application of the codebook, it was suggested by the invited coders to construct two codebooks covering two major themes. The first codebook points out the favorable aspects in the adoption of healthy food and the second highlights the unfavorable aspects in the adoption of healthy food.

After the evaluation of the agreement between the coders regarding the categorization, and the discussion of each theme until reaching a consensus, the two proposed codebooks were then constructed.

Excluded from the codebooks were uncategorized units of analysis, irrelevant portions for the proposed themes (favorable aspects and unfavorable aspects in the adoption of healthy food) and the sections with a dubious or ambiguous sense.

The themes found in the codebooks will be described and analyzed in the following section being presented according to the aspects that most represent the theme and more appear in the speeches of the focus group participants.

Throughout the work, the excerpts from the lines will be identified by the letter "P" followed by a number (P1, P2, P3, ...) referring to each parent / guardian, indicating that different numbers represent different people.

III. RESULTS

A total of 40 children aged 8 to 13 years (9.6 ± 0.89 years) were evaluated, with 22 girls (55%, 9.41 ± 0.56 years) and 18 boys (45%, 9.81 ± 1.16 years), as well as their respective parents or guardians. The socioeconomic evaluation (ABEP, 2015) revealed a score of 33.0 ± 7.5 points, 4 (11%) of class A, 26 (68%) of class B and 8 (21%) of class C. Eight parents or guardians (21%) had 8 years or less of schooling and 30 (79%) more than 8 years.

Table 1 summarizes the anthropometric and nutritional findings.

Table.1: Anthropometric evaluation of students from a private school, Aracaju, 2017.

Variables	All	Girls	Boys
Height (cm)	143,6 ± 0,1	143,7 ± 0,1	143,4 ± 0,1
Categories			
Short	1 (3%)	0 (0%)	1 (6%)
Adequate Stature	36 (90%)	19 (86%)	17 (94%)
High stature	3 (7%)	3 (14%)	0 (0%)
Weight (kg)	39,8 ± 11,1	41,3 ± 10,7	38,2 ± 11,7
Categories			
Low weight	0 (0%)	9 (0%)	0 (0%)
Suitable Weight	31 (78%)	16 (73%)	15 (83%)
High Weight	9 (22%)	6 (27%)	3 (17%)
BMI (kg/m²)	19,1 ± 3,7	19,8 ± 3,8	18,2 ± 3,4
Categories			
Thinness	2 (5%)	0 (0%)	2 (11%)
Eutrophy	20 (50%)	11 (50%)	9 (50%)
Overweight	7 (18%)	5 (23%)	2 (11%)
Obesity	11 (27%)	6 (27%)	5 (28%)

Regarding height, 100% of the girls and 94% of the boys had adequate results for the age.

Regarding body weight, 73% of the girls and 83% of the boys had adequate results for the age. However, 27% and 17%, respectively, exhibited high body weight for age.

Regarding BMI/A, 50% of girls and 39% of boys exhibited overweight (overweight plus obesity) for age. There was no significant difference between the sexes in the anthropometric indicators evaluated.

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In the thematic analysis of the speeches of the focus group two main themes were extracted: favorable aspects (FA) and unfavorable aspects (UA). Of these major themes, seven sub-themes were identified, four of which belong to the great theme FA, Organization (ORG), Offer (OF), Willingness and Priority (WP) and Orientation (OR), and three subthemes to the great theme AD, Time and Money (TM), Lack of knowledge (LK) and Family food practices (FFP).

Regarding the theme **Favorable Aspects**:

The first sub-theme highlights the **Organization** as a favorable aspect for healthy eating, emphasizes the use of time, the previous preparation of food as a means to get the organization to improve nutrition. This perception can be observed in:

P4 - "I think we could program better, what we can get ready, a healthier diet and try to organize to get ready a healthier diet. (...) to wake them up early for them to eat before leaving, I think that would be the way."

PI - "The solution is that! Be programmed! Take advantage of the time you have and leave things ahead for when it's time to eat have something healthier!"

The second theme concerns the **Offer** of healthy food, emphasizes that when access to these foods is part of the family routine, the adoption of healthy food is facilitated, which can be seen in the lines:

PI2 - "I think the point is to get used to it! My grandson came to live in my house with a year, I always gave everything to him since that age, he got used to eating everything! Already another grandson I have is not so; he is still small, but the mother only gives "gogó" [milk with Mucilon], the boy does not come any more!"

P8 - "[At home] we already offer the healthiest food possible."

The sub-theme **Willingness and Priority** reveals aspects related to the willingness to adopt and the availability of prioritizing healthy food as an important element for health, showing that the adoption of healthier food practices is achievable as the individual is prepared to develop it, the which can be observed in:

P8 - "The solution is to want! When you want something, we always do! If it's a priority we can do it! "[...] But if we stop doing something to prioritize our food, we can do it!"

P3 - "The solution is really priority! If it's a priority, we'll get organized!"

Guidance was identified as a relevant subtopic that favors healthy eating as it provides adequate knowledge on the subject, clarifies doubts and encourages; this thought becomes clear in:

P5 - "I think they could talk more about these [food] issues, with their parents too, so we could learn more"

P6 - "I had to talk about these matters [food] and others too, talk always."

In the above excerpts one could see the focus on the need to obtain more knowledge of the subject, more frequently and not only for the students, but also for the parents or guardians.

Regarding the theme **Unfavorable Aspects**:

The fifth sub-theme, **Time and Money**, brings the perception that issues related to financial condition, cost of food, as well as lack of time as a consequence of modern life, interfere in an unfavorable way to healthy eating, which can be observed in:

P4 - "In my case it's a matter of time. Working out, there you can not maintain a healthy eating pattern; I always have to leave food ready for them, so you have to leave something simple ..."

P1 - "My difficulty is also time. As I work out too, they wake up a little late and leave without having coffee, do not eat lunch, a rush. It's only when I'm free, in the days off, that they eat a more prepared, healthier food."

P9 - "In my case, it's time! I seek the most practical and cheapest! Sometimes I even wanted to, but without time with little money ..."

P6 - "I also think it's time and money!"

P2 - "It's the time and the custom ..."

P11 - "I think it's time! Nowadays everybody runs a lot, there it is better to eat what comes ready, or just put it in the microwave "

P10 - "Surely it's time! If I had time to look for different ways of making food it would be better! But for those who work all day it's difficult!"

P3 - "The interesting thing is that due to the rush of life we opted for more practical things, what is more practical for the children, is to open a package of stuffed biscuit, open a "cheetos", salted, a little box, we know that the best juice is the fruit, but the most practical is the canister, we do not have time to stay at home, everyone goes out to work and the children are alone at home and go after what is more practical, this is the greatest difficulty, the rush of modern life makes us look for what is more practical and what is practical is not always healthy."

Lack of knowledge was the sixth sub-theme identified as an unfavorable aspect for healthy eating, revealing nuances of how little familiarity with the topic interferes with adopting healthier dietary practices, presented in:

P5 - "I have a hard time knowing what's right! Because on the packaging comes so much writing ... Every hour is a novelty ..."

The last sub-theme was characterized by **Family food practices**, making mention of domestic food practices that do not stimulate healthy food development;

indicates that inadequate dietary practices adopted in the family are transmitted from the older to the younger. It should be clarified that in the speeches, in which the subjects used the word "custom", they opted to understand it as eating practices, so that the semantic definitions are not confused. This subtopic can be observed in:

P7 - "The difficulty is to get used to it, I do not like fruit very much and worse still, I do not buy too much. Then my granddaughter did not get used to eating, now if I try to give it to her, it's no use!"

P2 - "It's the time and the custom ..."

P4 - "... because at home I always had this difficulty, my husband and I always had this defect of not eating in the morning, and they seem to have inherited it, they eat badly in the morning."

P7 - "It's because at home we do not have the habit of eating a lot of fruit ..."

The results found in this study provide a range of discussions, interpretations, reflections, suggestions, which will be discussed in the following sections.

IV. DISCUSSION

The findings of this study show a predominance of socioeconomic class B and parents or guardians with more than 8 years of schooling. In relation to the students, the majority presents high prevalence of overweight.

The perception of parents or caregivers on the favorable aspects of adopting a healthy diet point to the organization, offer, willingness and priority, organization, while the unfavorable ones for time and money, lack of knowledge and familiar eating practices. These results give opportunities for discussions, interpretations, reflections and suggestions, which will be discussed below.

In relation to the socioeconomic class, this study showed a higher proportion of parents or guardians belonging to class B, different from the study of Oliveira *et al.* (2015) who found a higher proportion of class C members in their research that aimed to relate the nutritional status and sociodemographic characteristics of 355 primary school students in Carapicuíba, aged between 6 and 10 years.

This study found no association between the nutritional status of the students and the socioeconomic class of the parents or guardians, similar to the study of Oliveira *et al.* (2015), quoted above, and different from Zsakai e Bodzsar (2014) who evaluated 9479 boys and 9304 girls aged 3 to 18 years and found that the better the socioeconomic conditions of the parents or guardians, the better the nutritional status of the students. Regarding the parents' or guardians' schooling, there were no associations with the students' nutritional status.

Knowledge about food and nutrition are fundamental to the development of healthy eating

practices, however, to make such concepts, as they are assimilated, can interfere and rebuild the practice of healthy eating is a great challenge (Davanço *et al.*, 2004).

A longitudinal study by Deminice *et al.* (2007) which involved 142 elementary school students from the city of Ribeirão Preto - SP, whose objective was to develop and implement a food education program and evaluate the effects on the level of knowledge in nutrition, dietary practices, nutritional status and level of physical activity, observed an increase in students' levels of nutrition knowledge.

This finding underscores the importance of studies that seek to promote health based on the understanding of the subjects' speeches, on factors that influence the adoption of healthy eating, in addition to previous knowledge about this subject.

There is no single model of healthy eating to follow. Many factors should be taken into consideration when adopting a healthy diet. The culture and the region of the country where one lives, the climate, religion, habits and food preferences of the family coupled with popular and scientific knowledge are elements in the search for healthy eating (Brasil, 2014).

Regarding the parents' or guardians' understanding of the aspects that interfere in the adoption of healthy eating, identifying them as favorable (organization, offer, willingness and priority and orientation) and unfavorable (time and money, lack of knowledge and custom family). These results provide opportunities for discussions, interpretations, reflections and suggestions on this topic that is so important and of great importance for Public Health.

It was observed that the organization of family members in relation to pre-meal preparation, or small changes in the family routine, such as raising the pupils earlier could be conducive to healthy eating. The woman is culturally guardians for the purchase, preparation and supply of food, as well as the care of the home and the Family. Their insertion in the labor market brought changes in this scenario, reducing the time devoted to these tasks and being one of the reasons for increased food outside the home and the demand for food considered more practical (Oliveira *et al.*, 2012; Lelis *et al.*, 2012). To minimize this problem, it is recommended to value commensality, which involves all members of the family, creates stronger ties, facilitates the sharing of culinary skills and the construction of family food practices aimed at healthy eating (Brasil, 2014a).

Another favorable aspect identified in the speech was the offer of healthy foods, indicating that when it is offered items that make up a healthy diet from the earliest years of life it becomes easier to practice and adopt it. This finding shows that families play an important role in the

development of children's eating habits because it is the first social influence to which they have access (Jaime *et al.*, 2017).

The behavior of an individual over food encompasses all that he has apprehended throughout his life in regard to practices, skills, knowledge, information, meanings, representations, values, perceptions, opinions, that is, whatever he thinks, feels and does about the act of eating and eating (Bento *et al.*, 2015). For Patrick and Nicklas (2005) the availability and repeated exposure to certain foods is a determining factor of the food preferences acquired during childhood.

Will and priority have also been highlighted as topics that contribute to healthy eating. This highlight shows that the desire to practice healthy eating, as well as the attitude of prioritizing it in the family routine, can serve as a stimulus to healthier eating practices. It is known that the concept of healthy eating is incorporated based on the experiences lived, the sources of information accessed, the priorities listed, social rules, restrictions, adopted values, psychological factors, demographic and cultural characteristics, enabling the conception of healthy eating be lifelong and may vary depending on the complexity and context (Boog, 2013).

The last aspect that favors the adoption of a healthy diet is the nutritional orientation on topics that involve the practice of healthy eating, not only to students in the school environment, but also to parents or guardians. Bento *et al.* (2015) when checking the perception of parents or guardians of preschool children in a day care center in Belo Horizonte, about difficulties to make healthy eating real, stressed the urgency in guiding parents or caregivers about eating practices and their influence on the choices of students, by means of strategies that allow them to reflect and recognize the benefits of healthy eating for health promotion.

As for the aspects that interfere in an unfavorable way in the adoption of a healthy diet, the time and the money appear of marked form in the spoken ones of the analyzed subjects. The study of Batalha *et al.* (2005) which evaluated individuals' perceptions about the price of foodstuffs, showed that the most consumers have the perception that the price of food is high, influencing the moment of food purchase. Regarding lack of time, Bento (2012) in a study with users of popular restaurants in Belo Horizonte, found that the financial condition and lack of time to prepare and buy healthy foods was a difficulty pointed out by the research participants.

Knowing the productivist urban rhythm is a fundamental factor to understand the food consumption of society, since the accelerated rhythm that invades the social life of citizens, especially in large cities, dictates consumption behaviors due to the shortage of time. Due to

the convenience and the lack of time, it is increasingly frequent to have meals outside the home and adoption of fast food (Ortigoza, 2008).

The lack of knowledge about healthy eating has been flagged as a factor that hinders the adoption of healthy eating, because often the information is incomplete. Lamas and Cadete (2017), when conducting qualitative research, with the objective of analyzing the strategies and resources used in the processes of construction of the change of eating habits of twelve health professionals in Belo Horizonte - MG, found that information about healthy eating is widely disseminated through the media, communication, and that access to them is advancing at great strides, especially in large centers, as a result of globalization.

They also emphasize the importance of dialogue as an essential element in the process of education and change in people's eating behavior, emphasizing that, however developed an intervention technology, it will not be able to substitute education for dialogue, which gives meaning to actions and promotes effective changes in the eating habits of individuals (Lamas & Cadete, 2017).

A condition that may interfere with the search for knowledge is the source used to obtain information about healthy eating. The internet, due to its agility and easy access, has been configured as a tool for disseminating content in nutrition, in an interactive way and without any burden of time and locomotion to the user (Gomes *et al.*, 2005).

The polarization of the use of smartphones and tablets connected to the internet with the use of applications, are being integrated to the daily life as an artifact in the education in nutritional health (Curioni *et al.*, 2013). However, information on healthy behaviors, fad diets, healthy or unhealthy foods, herbal remedies, physical exercises, among others, are randomly transmitted in the cyber-space, to all individuals disregarding their individualities (Rangel, Lamego, & Gomes, 2012).

Family feeding practices have been identified as an unfavorable aspect of adopting a healthy diet, in which the food consumed and/or the ways in which they are prepared can compromise the quality of the family's food. Savage *et al.* (2007) mention that in the first years of life children learn what, how, when and how much to eat, according to the socio-food environment to which they belong and based on the cultural transmission of beliefs, attitudes and practices around food.

Based on the assumption that each individual carries with him a food repertoire constructed from the experiences, the nutritional status and the nutritional knowledge of the students are linked to the alimentary habits transmitted by the family. Parents or caregivers with more schooling can positively influence students regarding

healthy eating. However, having satisfactory knowledge is not prerogative to change habits, multifactorial causes interfere favorably and unfavorably in the adoption of healthy eating patterns.

V. CONCLUSION

It is concluded that parents' understanding of the favorable aspects that interfere in the adoption of healthy eating are: organization of family members in relation to previous food preparation, offer of healthy foods, willingness and priority, and nutritional orientation. The unfavorable aspects were time and money, family eating habits and lack of knowledge.

These results provide opportunities for discussions, interpretations, reflections and suggestions on this topic that is so important and of great importance for Public Health.

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