

Perceptions, barriers, and facilitators of the implementation of the school cafeteria law for adolescents in the Federal District

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Abstract

This study aimed at characterizing the students' perception of Law 5.146/2013's implementation, whose objective is to promote healthy eating in schools in the Federal District, and to identify the barriers and facilitators that exist in adopting it, as well as the perspectives for the implementation of actions of Food and Nutrition Education (FNE) in the school environment. Fifty-two 9th grade teenagers from three public and private schools participated, distributed in six focus groups. A semi-structured script was followed with questions, validated by the Delphi technique, to find out what was being sold and consumed in the cafeterias according to the adolescents, whether they knew the law, and to assess barriers and facilitators to put the legislation into operation in the school environment. Finally, a fictitious situation was presented to the students in which they would conduct FNE actions to implement the law. The debates were recorded, transcribed, and similar speeches were grouped by Bardin's content analysis. The adolescents considered the cafeteria law to be positive but pointed out that they had not yet adapted to the legislation. They identified the price of healthy foods and the poor disclosure of the law as barriers, and the school and family were facilitators. Concerning FNE, they suggested innovative means of dissemination, such as social networks and the use of figures and colors to draw the reader's attention. Despite being well received by adolescents, the mere passing of a law is not enough to change dietary practices already adopted in the school environment, if it is not associated with a strategy of dissemination and awareness of the entire school community.

Keywords: Healthy Diet. School Feeding. Adolescent. Food and Nutrition Education.

INTRODUCTION

The worsening of the obesity epidemic has been associated with increased consumption of ultra-processed foods¹, which is often found in the adolescent population. Recent data from the Family Budget Survey (FBS 2017-2018)² showed that the participation of these products in the diet of Brazilian teenagers is greater when compared to adults and the elderly². Ultra-processed foods have flavors, colorings and other additives that in-

crease their sensory qualities, have less fiber and proteins, and more added sugar when compared to minimally processed or in natura foods³. Inadequate eating behavior in adolescence is a cause for concern, since it can affect the diet, leading to lower energy and micronutrient intake and higher content of sugars and fats. This situation can lead to an increase in body fat, leading to eating behavior disorders, which are highly prevalent at

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this stage of life⁴.

Therefore, the adoption of policies to create healthy environments, especially in the school environment, is recognized as a key element for the prevention of obesity⁵. The relevance of this aspect is evidenced in the Plan of Action for the Prevention of Obesity in Children and Adolescents of the Pan American Health Organization, which established the objective of adopting regulations on the sale of food and beverages in schools, in order to limit the supply of foods with low nutritional value⁶. Likewise, the National School Lunch Program (NSLP) also aims to ensure the provision of healthy and adequate food in the school environment, aiming at contributing to the students' learning process⁷. This program has, among its guidelines, the inclusion of actions of food and nutrition education (FNE) in a general way in pedagogical practices. Studies indicate that the provision of school meals in public schools provides a healthier environment and the adoption of better food choices by students^{8,9,10}.

In private schools, which are not covered by the NSLP, students have a private cafeteria as the only option for purchasing snacks/meals at school. A study that characterized the environment of 1247 Brazilian public and private schools showed that private schools have a more obesogenic food environment

when compared to public schools⁸; therefore, it is necessary to study both places to support strategies to promote healthy eating in school environments.

In Brazil, there is no federal regulation on the sale of food in schools; however, there are municipal and state initiatives¹¹. In the Federal District, in 2013, Law no. 5.146 (to be cited in the present study as the district law of cafeterias)¹², regulated by Decree n. 36900/2015, establishes guidelines for the promotion of healthy eating in public and private schools in the Federal District¹³. The sale of products such as candies, chocolates, artificial refreshments, chocolate drinks, industrialized snacks, savory snacks-type cookies, fried foods in general, and ultra-processed foods whose percentage of calories from saturated fat exceeds 10% of total calories was prohibited in cafeterias^{12,13}.

In this context, the objective of this study was to characterize the perception of adolescent students from public and private schools in the Federal District about the implementation of the district law of cafeterias, identifying the barriers and facilitators that exist in adopting it and the perspectives for the implementation of actions of FNE in the school environment; because, despite the enactment of the cafeteria law, students are possibly unaware of such legislation.

METHODOLOGY

This is a qualitative study carried out with adolescent students from public and private schools in the Federal District. The focus group technique was chosen, as this is a data collection technique that promotes a broad questioning on a specific topic. The study

population was composed of teenagers from primary school, from the 9th grade, of both sexes. A convenience sample was adopted, consisting of three schools that had a private cafeteria. Initially, a mapping of public and private school units located in administrative

regions of greater and lesser social vulnerability¹⁴ that had commercial cafeterias was carried out, based on data from the School Census and the State Department of Education of the Federal District (DEDF). Then, the schools that would be part of the study were randomly selected. Two of them were located in a region of greater social vulnerability in the Federal District - Ceilândia, and one school in a region of lesser social vulnerability - Plano Piloto. All schools participating in the study indicated for convenience the class that would participate in the research.

On the first visit to the school, the researchers explained the study to the students in the selected classes. On the day scheduled for the focus groups, only those students who had both the Informed Consent Form signed by their mothers, fathers or guardians and the Assent Form signed by the adolescents could participate in the study. The study was approved by the Research Ethics Committee of the Faculty of Health Sciences of the University of Brasília (opinion 1.166.802; CAAE: 43694115.2.0000.0030). The number of focus groups was established after confirming the total number of students who met this criterion.

The study was conducted with 52 teens, 19 of whom were from private schools and 33 from public schools. Students were divided into six focus groups (approximately nine participants each) and the same student did not participate in more than one group. The students were arranged in a circle, to contribute to a climate of mutual trust and all were encouraged by the group facilitator to participate in the debates, pointing out that all ideas and opinions mattered and that there was no right or wrong. Focus groups were held between September and December 2015, in a reserved space in the selected schools. The focus group discussions were

conducted by the researcher responsible for the study as a facilitator and by a nutritionist from DEDF duly trained by the researcher.

To conduct the focus groups, a semi-structured script was followed with questions previously validated by the Delphi technique. In this technique, a group of judges is consulted about future events, through a questionnaire, which is repeated over and over until a convergence of the answers is obtained in a consensus, which represents the consolidation of the group's intuitive judgment. Initially, a brief report of the research objectives and an invitation to evaluate the semi-structured questionnaire for conducting the focus group was sent electronically to the judges – specialists in the area of nutrition in adolescence and the promotion of adequate and healthy eating. The first round aimed for the judges to assess the clarity and relevance of the items, whether the language adopted corresponded to the chosen audience and whether the main aspects that permeate the barriers and facilities for the implementation of the cafeteria law were being addressed in the questionnaire. Each item was answered by the judges using a 5-point Likert scale, ranging from “I totally agree” to “I totally disagree”. A second round was not sent to the judges, since the level of agreement (sum of the number of answers attributed to the classifications “Totally Agree” and “Agree”) of all questions was greater than 80%.

The semi-structured script of questions adopted in the focus groups was divided into four blocks. The first block dealt with the diagnosis of purchases by students and the mapping of the school cafeteria environment. The proposal was to know the relationship between the students and the cafeteria, that is, if they used it, if they knew what was sold there, what they bought or

not. In the second block, the objective was to know the students' perception about the implementation of the District Law on Cafeterias, focusing on identifying the students' previous contact with it, investigating if they knew what it was about, and if they believed that the cafeteria of their school was according to the law. The third block, on barriers and facilitators, had questions that assessed whether students believed it was possible to put the Law into practice in their schools and throughout the Federal District, identifying facilitating aspects and existing barriers. The last block, on FNE actions, presented a fictitious situation to the students, in which they were responsible, at the request of the governor of the Federal District, for putting the aforementioned law into practice. At that moment, an activity was conducted with the students, so that they could plan an FNE action, listing the actors involved, the materials, procedures, and time needed to achieve their objective. Flipcharts were used to punctuate the questions raised by the adolescents so that they would perceive that all the points raised were fundamental for the discussion, which were filled in by the researchers present.

With the authorization of the focus group

participants, the debates were digitally recorded and later transcribed by the researcher responsible for the study to carry out the content analysis of each block of questions. To carry out the content analysis according to Bardin¹⁵, three steps were taken for the meaning of the data, namely: 1) Pre-analysis: it consists of the systematization of ideas through the selection of material, the carrying out of the free reading, formulation of the hypotheses and objectives from the initial reading of the data, and their interpretation; 2) Exploration of the material: consists of aggregating information through the definition of categories and themes, choosing the keywords, and summarizing the paragraphs for a first categorization. Subsequently, there is a grouping of the initial categories, based on the themes found, thus resulting in the intermediate categories, and finally, there is a new grouping of the intermediate categories which arrive at the final categories; 3) Data treatment, inference, and interpretation: aims at understanding the existing and implied messages in the collected material. The discourses of the participants will be presented, without their identification, illustrating the analyses obtained in each block of questions.

RESULTS

Each of the six focus groups carried out lasted 50 minutes, with a total of 52 adolescents, aged between 13 and 16 years old, 52% of whom were female.

a) Sale of food through the school cafeteria and its consumption

The study participants from public schools and from the private school that was part of the study considered the school cafeteria

as an adequate space for actions to promote healthy eating; however, they considered that the cafeterias of their own schools did not play this role. The discourses pointed to criticism of the quality of healthy food offered.

"... we had a protest due to the poor quality of the snacks, so they started selling baked savory snacks".

"...fruit salad is sold at school, but it tastes terrible! The fruits are always overripe, and

every day is the same!”

“The lady’s cafeteria doesn’t have healthy snacks, until after the protest, she started selling fruit salad, but the salad is horrible.”

“I like a tasty snack; it fills you up. Savory snacks fill more than fruit salads and are still cheaper, so I prefer to buy them.”

Most adolescents, both from public and private schools, reported going to the cafeteria at least once a week to buy snacks. An interesting fact is that some teenagers did not consider the purchase of candies and sweets as “food”; therefore, they thought they did not use this space at school.

“... I don't go to the cafeteria to buy snacks because I bring them from home, I only go there to buy candy, after all, you can't go to class without chewing gum.”

Regarding the types of food sold, in general, all study participants reported that the cafeteria sold foods considered unhealthy, such as snacks, soft drinks, and sweets, offering few healthy snack options, which, in their view, were salads, fruit, juices, and natural sandwiches. The following statements illustrate these opinions:

“...here the lady sells fried snacks and the coxinha is my favorite snack.”

“... the juice is very bad, so I prefer to buy soda”.

Still in this sense, the teens claimed that they would like to have more options for healthy snacks; however, these should be different from those available in the family environment:

“They could sell fruit there, but those different from the ones we have at our house.”

“... you can't buy snacks that are just like those at my house.”

Only the adolescents from the private school reported the presence of advertising folders for soft drinks in the cafeteria, but they stated that they did not consider the

simple fact of having a photo of the product next to the juice machine as a stimulus for consumption.

“...there is a soda poster in the cafeteria, but I don't see a problem, because when I go to the cafeteria, I already know what I want to buy.”

“The break time is so tight that there is no time to pay attention to what is around the cafeteria”.

b) Knowledge of the district law of cafeterias:

As for the knowledge of the legislation that regulates the food to be sold in the school environment, it was evident that the participants were unaware of the district law of cafeterias. Only one teenager from a private school reported having knowledge about this law, as he saw it in a newspaper article available on a website. They also reported that the topic was never addressed by the school's pedagogical team.

“I heard about it (law) in the newspaper.”

“We didn’t know about this law because nobody told us it existed.”

“I don’t think teachers even know this law exists.”

In the students' perception, after being exposed to the regulatory content, the district law of cafeterias favors the provision of healthier snacks in the school environment; however, they were unable to identify recent significant changes in the quality of snacks sold in the school cafeteria.

“Nothing has changed here (after publication of the law). Everything remains the same.”

“From a while ago, it started to have baked snacks and fruit salads, but that's all.”

“I think it's pretty cool to ban the sale of fatty products and sell healthy foods.”

c) Existing barriers and facilitators for

the implementation of the district cafeteria law:

Adolescents identified cafeteria owners, cost, and lack of disclosure as the main barriers to implementing the cafeteria law. From the point of view of adolescents from public schools in the regions of greater social vulnerability, the price of food and the cafeteria's profit were identified as barriers to the effective implementation of the law.

"..., the cafeteria lady only sells healthy snacks that taste bad and are expensive, so I buy the snacks that taste better."

"The owner of the cafeteria said that for a better snack, the price has to be raised".

"... I think that if the cafeteria only sells healthy snacks, it is too expensive for the owner (of the cafeteria) and for us (students) to buy them, because fruit is expensive."

There is an apparent difficulty in communication between the teenagers and the cafeteria owners regarding the quality of the food on sale. Associated with this scenario is the low dissemination of the law on cafeterias to the school community.

"When we go to complain about the quality of the snacks, the girl from the cafeteria fights with us and doesn't return the money. One day I bought an expired natural juice and she said I was lying."

"The government creates a law and doesn't tell anyone, so it doesn't work, right?"

"They could explain a little more about food at school."

On the other hand, the adolescents identified the school and the government as facilitators of a more adequate diet in the school environment. In addition to these, they identified the family as the protagonist in this process.

"... here at the school is the right place to make this law work, it is just that the principal must start working on the subject with the

students."

"It's interesting to know that the governor cares about what we eat, he doesn't want us to get sick, so you came here to tell us about this law."

"Healthy food comes from the family; the mother teaches the child from an early age."

d) Food and nutrition education actions proposed by adolescents to implement the district cafeteria law:

After explaining the hypothetical situation for the design of FNE actions to be produced by adolescents for the implementation of the cafeteria law, most pointed to lectures in schools, associated with the making of murals as the main means to achieve the law's objective, as seen below.

"There should be lectures in all schools talking about the importance of this law in the cafeterias."

"Colorful murals explaining that the law is really cool to read and learn. It could be done by us students ourselves."

Another outlined and innovative action was verified in the speech of students from schools in the most socially vulnerable area, which was the dissemination of the law on social networks with the objective of expanding the propagation of the law.

"The government can talk about the law on social media, it's free and a lot of people see it".

The teens emphasized that an FNE action, whether on television, on social networks, or on the school wall, needs to have little text and many images, including conveying striking messages about the relationship between food and health.

"People memorize pictures better than text."

"You have to have color images to work."

"If I were the government, I would put a

very flashy photo of someone eating wrong at school and put the following theme: your child goes to school to study and not to die! Then there would be a lot of shares because people would be curious and read the full re-

port explaining the law”.

“Murals calling attention to body image, like talking about the benefits of healthy eating, would work to put the law into practice. Girls are very concerned about their bodies.”

DISCUSSION

The findings of this study provide important data on the adolescents' perception of the regulation of school cafeterias, highlighting the fact that they recognize the importance of these spaces for health promotion. This is a positive point, as the school must encourage healthy eating practices and it is an environment with a great capacity to impact food, since the school environment is attended by approximately 90% of Brazilian teens aged 15 to 17 years^{6,16}. Furthermore, this public spends an average of 20 hours a week at school, having at least one meal with their peers¹⁷.

The acquisition of ultra-processed products by schoolchildren in the cafeterias was already expected. According to the 2019 National School Health Survey (NSHS)¹⁸, the most common products for sale in school cafeterias visited by Brazilian adolescents are baked snacks, natural fruit juices, and soft drinks; in alternative points of sale, soft drinks, industrialized snacks, and fried snacks stand out. Data from NSHS and the latest FBS² also reinforce the constant presence of ultra-processed foods in the diet of Brazilian adolescents, which often include items such as stuffed crackers, cookies, snacks, chocolate drinks, juices, soft drinks/industrialized juices, soft drinks, dairy drinks, pizzas, fried and baked snacks, and sandwiches. Another national survey, the Study of Cardiovascular Risks among Adolescents (SCRA), conducted in 2013-2014, went further, verifying a

positive association between the food available in the cafeterias and the development of chronic diseases, such as obesity and hypertension¹⁹.

This scenario is even more worrying for the Federal District, as a mapping carried out in 102 public and 80 private cafeterias in 2010 showed the significant sale of baked snacks with sausages, sugary drinks, and sweets²⁰. Although the mapping took place before the enactment of the law, it is inferred, from the reports of the present study, that little change actually took place during this period. A study carried out in 111 school cafeterias in Curitiba-PR, 35 of which were private and 76 public, showed that industrialized snacks, sweets, chocolates, candies, stuffed cookies, artificial juices, soft drinks, and powder-based refreshments were the most found, even with legislation that deals with the sale of food in the school environment in force in the State²¹. The consumption of these foods in the school environment is a matter of concern since the school is configured as the ideal place for learning about adequate and healthy food and their impacts on health²². Furthermore, the excessive intake of these foods of low nutritional quality in childhood and adolescence can contribute to overweight and obesity, persisting into adulthood²³. On the other hand, it is worth noting that Brazilian public schools rely on the NSLP as a protective factor for schoolchildren's food choices. According to the legislation that gui-

des the NSLP, such as Resolution CD/FNDE nº 06/2020²⁴, the use of funds transferred by the federal government for the execution of the program in the acquisition of ultra-processed foods and beverages is prohibited.

Results of this study also point to the lack of knowledge about the district law and its inefficient dissemination within the school community, which shows a silent position of the school and discourages actions of social control over the implementation of the referred legislation. The school is configured as a privileged space to encourage preferences for more adequate food and to improve the health conditions of students²⁵.

Studies that assess the school food environment conclude that it is necessary to involve the entire school community, which includes parents and guardians, students, school staff, and cafeteria workers, in order to reinforce the implementation of legislation and ensure environments that favor healthy eating practices^{9,20}. Gabriel *et al.*²⁶ conducted a study in Santa Catarina, a pioneer state in legislating on sales in school cafeterias, to assess the implementation of the law in eight municipalities. The authors identified advances in terms of improving the nutritional profile of commercialized products and concluded that inspections associated with educational actions are strategies that increase effective implementation²⁶.

The fact that the participants of the present study showed an interest in consuming healthier foods reinforces the need for a more effective implementation of the law, since the literature shows that the sale of unhealthy foods in cafeterias makes healthier food choices difficult^{9,27-28}. Despite the lack of recognition of food advertisements displayed in schools that influenced the participants food choices, the literature goes in the opposite direction¹⁹⁻²⁰. A cross-sectional sur-

vey of over 10,000 Australian schoolchildren aged 12 to 17 years showed that marketing food at school increases the likelihood that a new product will be purchased and tried²⁹. A recent systematic review concluded that advertising, including printed advertising, can lead children and adolescents to consume significantly more unhealthy foods³⁰.

The barriers pointed out to the consumption of healthy foods related to the high cost of these foods were also referred to by cafeteria workers and students in the State of Santa Catarina²¹. However, despite the belief that healthy foods are more expensive, a diet composed mainly of *in natura* and minimally processed foods is still cheaper in Brazil than a diet based on ultra-processed foods, a fact that needs to be explored with this public in programs of FNE³¹⁻³². Training is needed for the owners of cafeteria establishments on the laws that regulate the trade of food in the school environment, healthy eating, and the importance of the convergence of actions in the school for it to be a health-promoting environment in all its dimensions.

Among the facilitators for the implementation of the law, the teenagers highlighted the role of the government, as exposed in the Federal Constitution of 1988, which lists among its duties, the obligation to guarantee the health of the population through public policies and actions to promote health, and the cafeteria law fits into this requirement³³. As for the school, also mentioned as a facilitator for the implementation of the law in the participants' view, it is an environment that enables a holistic approach to health promotion, including changes in the eating behavior of adolescents, in addition to integrating the family and community^{6,34}.

In this sense, it is also essential to develop FNE actions in the Federal District to contribute to the implementation of the district

law on cafeterias. A study that evaluated cafeterias in the state public network in the city of Porto Alegre, RS found that 96.2% of cafeteria workers were aware of the legislation, but only 3.8% had a more evident offer of healthy foods, showing that knowledge of the law without FNE strategies does not generate palpable changes²⁶. In the present study, according to the participants, it was found that no educational action was adopted for the implementation of the district law in schools, and that there was no involvement of the pedagogical body to discuss the legislation with the adolescents themselves. There was an expectation to identify such actions at least in public schools, given that the NSLP has, in its guidelines, the inclusion of FNE in the teaching and learning process^{7,24,35}, which did not occur by the adolescents' statements.

The promotion of healthier eating habits is one of the complexities in the FNE, since several factors are related, transposing the mere knowledge of the benefits of a healthy diet³⁶. The study participants presented a verticalized idea about FNE, as they believe that this is an action that consists of transmitting content through lectures, replicating the model to which they are often exposed. Ottoni *et al.*³⁷ conducted an exploratory study on FNE actions carried out in Brazilian schools and found a predominance of passive methods, with lectures being the most reported methodological approach³⁷. Among the principles for FNE actions, it is emphasized that active processes must be prioritized, and they must be contextualized with the reality of individuals, families, and groups³⁸. The passive method can be used as long as it is associated with other methodologies that consider the pedagogical process and all its dimensions, giving importance to methodologies that make adolescents protagonists of

their learning process and those that use innovative and attractive technological resources^{37,39-40} as stated by the participants in their discourses.

In the present study, despite having a predominance of the verticalized idea of FNE, the students pointed out the importance of play, with the use of images and colors in the design of actions to disseminate the existence of the law of cafeterias, in addition to suggesting the use of social networks. The use of computers and mobile devices has become part of people's daily lives, including adolescents, and of nutritional interventions with this public⁴¹. The use of computers in the school's computer lab, if any, can be an interesting teaching tool for the promotion of health and adequate and healthy food, by allowing, for example, the use of educational electronic games, since technology is seen by some students as a motivating factor in the teaching-learning process. However, in practice, what is observed is that most professionals do not use the computer as a teaching tool during classes, but the introduction of the playful element can make learning more effective, dynamic, and pleasurable⁴².

As an inherent characteristic of the qualitative method, the extrapolation of findings to different audiences is limited. It is also noteworthy that the focus of this study was restricted to the perception of barriers and facilitators from the point of view of adolescents for the implementation of the cafeteria law, requiring a broader assessment of the school context to characterize the school as a promoter or not of a healthy diet. Therefore, future studies should also address different ages of students, parents and teachers, as well as the effective implementation of the cafeteria law in the Federal District and its possible impacts, including the preferences and food consumption of students.

CONCLUSION

The adolescents in this study believe that a law that guides food sold in the school environment is positive. However, when analyzing their reports, it is clear that the most consumed foods are precisely those that should no longer be sold, according to the district law of cafeterias. There is an omission of the school in the role of making the school environment healthier, perhaps due to the lack of knowledge of the legislation by school managers and the low dissemination of this law in the school environment. The NSLP, present in public schools, should make it possible to promote more adequate eating habits by offering healthier foods and carrying out food and nutrition

education activities. Private schools, due to the absence of public policies that strengthen an environment that promotes healthy eating, are potentially more obesogenic. The cost and taste of food were identified as barriers to the implementation of the district law. The teenagers' speech shows that there is openness to more participatory FNE methodologies, which allow them to become protagonists of this action, as well as innovative ones that involve social networks. The implementation of the district law of cafeterias should encompass the government, the school community, and the families of the students, who were identified as facilitators of this process.

CRediT author statement

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