

## Nutritional Care in the School: An Experience with Educational Groups

Rezende Machado de Sousa L<sup>1\*</sup>, Amaral Rigon S<sup>2</sup> and Weeny Ramos Bieberbach Ceschim E<sup>3</sup>

<sup>1</sup>Department of Community Health, Federal University of Parana, Brazil

<sup>2</sup>Department of Nutrition, Federal University of Parana, Brazil

<sup>3</sup>Nutritionist specialized in Public Health Nutrition

### Abstract

This article is a descriptive study about the experience of using educational groups for overweight student's nutritional care, in a public school in Brazil (Colombo-Paraná). This work involved 77 students, between the ages of 6 and 13. It was coordinated by three post-graduations students of the Federal University of Parana: a nutritionist, a pharmacy and a dentist. The students were divided into four groups and participated on monthly meetings during seven months. The objective of those groups was the promotion of healthier eating habits; and during the meetings, the contents were explored through play activities. At the end of the groups, it has been applied a structured questionnaire, to identify changes on the eating habits of the participants, and a satisfaction survey. The results suggest that this experience brought enhancements in building healthier eating habits. The conclusion reached is that those kinds of practices are important in the field of Food and Nutrition Education, especially in the school environment.

**Keywords:** Food and nutrition education; School health; Health education; Health promotion

### Introduction

The epidemic of overweight and obesity reaches more and more children and teenagers, increasing significantly the risk of health complications in childhood, adolescence and adulthood [1-3]. Currently in Brazil, overweight reaches almost 60% of the population and one out of three children, between the ages of 5-9 years old. In addition, studies show that overweight children are more likely to become obese adults [4].

This phenomenon is a reflection of changes in the eating habits of children and adolescents, such as the increased consumption of processed foods –which are rich in sodium, fat and sugar, reduced consumption of fruits and vegetables, decreased level of physical activity and increased time spent in front of the television or computer [1,4].

Researchers point out that eating behavior is related to symbolic and social and factors. Thus, to be effective, Food and Nutrition Education (FNE), must consider and valorize the food culture of the communities and rescue its positives values; like the traditional consumption of rice and beans in Brazil [5-7].

Certainly this is not an easy task, especially because this process must be part of larger public policy committed on guaranteeing access to quality food in sufficient quantity, permanently and for all [7]. However, the reality of modern societies is still marked by the growing process of food commodification and the absence of food and nutritional

security policies. Thus, FNE often needs to be performed in adverse and challenging contexts [6].

In this regard, the development of better methodologies for the nutritional care is becoming progressively important, in order to provide significant changes in the eating behaviour.

From this perspective, the school environment has proved to be a strategic space for the development of these actions [2,8].

There are several FNE activities that were developed in schools; however, their results indicated a low contribution to improving dietary practices. This finding seems to be related to their duration (they were often single activities), and the decontextualized and biological approaches in which they were performed [5,9-11].

Considering limited impact of punctual FNE activities on children and adolescents eating habits, this work aims to share an experience that sought to transcend this model. This experience was coordinated by a nutritionist, a pharmacist and a dentist of the post-graduation program “Multiprofessional Residency in Family Health” of Federal University of Parana. It also had the support and collaboration of tutors and preceptors of the program, as well as health professionals and school teachers of the community.

### The Experience

This experiment consisted of the implantation and evaluation of educational groups as a strategy for the nutrition

-al care and involved 77 schoolchildren from a public school in Colombo, Brazil.

**The Groups:** To set up the groups, the teachers invited some students to join a group focused on nutrition education. Those students had been diagnosed with overweight in the year before, by the School Health Program, in which one of the objectives is to assess the nutritional status of students [12]. Overall, 82 students showed interest in participation in the group, but just 77 came in the first meeting, and these stayed in the group until its end.

These 77 students were spitted into four groups, to better adjust with their school schedules, and all of them lasted 7 seven months, with monthly meetings at school. The groups started in 2013 and were concluded in 2014, and they had from 13 to 28 students each. Among the participants, 60% were girls (n=16) and 40% were boys (n=31). The age varied from 6 to 13 years old, but the mean age was 8 years old.

**The Meetings:** All of the meetings were held at school to avoid absenteeism. At the meetings, the promotion of healthy eating practices was based on food habits of greater relevance in childhood [13], some contents were prioritized to be approached through monthly meetings. Those contents were: encouraging the consumption of vegetables, fruits and milk; performing three main meals a day; protecting commensality, with the habit of having family meals, without the presence of

the television; moderation of the consumption of sweets and fatty foods.

Parents are the child's first nutritional educators, and the family, as a primary socializing agent, becomes the main influence in the formation of their eating behavior [14]. Therefore, the participation of the family is essential, in FNE activities for children and adolescents, so that the promotion of small and gradual changes in eating practices, which will consequently lead to changes in body composition, extend to the family environment [14].

Considering how fundamental the participation of the family is in this process, the student's parents were invited to participate in all meetings. Although, it was defined as a condition for the student's participation in the group, the presence of the parents in the first meeting, in order to establish, in this initial contact, a relationship of trust between the coordinators and the parents.

For the success of educational activities, it is not enough to have the students as just spectators of the content addressed, they must participate actively in this process [15,16]. In this educational context, using activities involving the cognitive senses-sight, smell, hearing, taste and touch, can help the interaction and learning of the student [2,6,8]. Thus, for the selection of strategies, it was established that the information would not be passed on in lectures; but by integration group activities, based on the discovery and construction of new knowledge [17]. Guiding strategies, steps used for group dynamics, were organized in the Table 1.

Meeting	Theme approached	Dynamics used	"Month Challenge"
1°	Mealtimes: protecting commensality	Students and their parents watched a video about recent changes in eating habits and commensality. After that, the group discussed about commensality and how is their mealtime at home	Don't eat in front of the television
2°	Vegetables	The students played two guessing games: "which is this vegetable?" and "why this vegetable is important for the body?" After the games, the group discussed about the importance of trying and eating different vegetables	Try new vegetables and try again the ones that you didn't like
3°	Breakfast and dairy products	The students played the games "Preparing my breakfast", in which they simulated preparing a health breakfast, and "where is the calcium?" in which they needed to show the foods that contain calcium. After, the group discussed about the importance of having breakfast and consuming calcium sources such as dairy products	Drink milk and have breakfast every day
4°	Sugar	The students played the guessing game "how much sugar it has?" in which they needed to guess how many spoons of sugar some food contained. After, they had a dynamic exposition about how the dental caries are formed	Avoid candies and soft drinks during week days
5°	Fruits	The students played the guessing game "which is this fruit?" After, they could create and prepare juices using different fruits, and all of them tried the juices	Eat fruits every day

		made. The students also talked about the importance of consuming fruits and natural juices	
6º	Fats	The group discussed about the different types of fat, and played the guessing game “which are the fattiest foods?” and “how much fat my snack has?”	Avoid fatty foods, such as fried foods, chips and instant noodles
7º	What did I learn?	The students discussed what they learned by participating in this group. Then, they played a game about the topics covered in the meeting	At the last meeting they did not have a “Month Challenge”

**Table 1:** Details of the techniques and the “Month Challenge” used at each meeting.

The "Month Challenges" were used as a strategy to encourage the adoption of healthier eating practices and to stimulate the changing of eating habits at home. Even when the participant was absent in any of the meetings, they received all of the Month Challenges. Therefore, even absent, the student could follow the process.

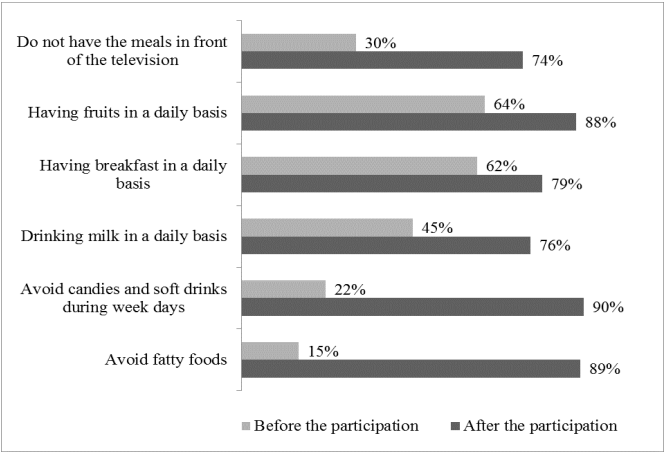
**The evaluation:** As a method to assess the results of this work, in the last meeting, it was given to each student one structured questionnaire to investigate whether there were changes in participants' eating practices or not. Also, a satisfaction survey was also realized, using 4 points “smiley face” scale (liked very much, liked, indifferent or did not like). On both evaluations, the structured questionnaire and the satisfaction survey, the students completed anonymously.

Results and Discussion

The majority (98%; n=75) of the students attended to all the meetings. Despite the presence of all student’s parents in the meeting, only 15% of the parents (n=12) continued to participate assiduously. However, in order to stimulate family participation in this process, all were asked to, even when absent at the meeting, recapitalize with the students, at home, which themes were worked and the Month Challenge agreed.

Regarding the investigation of possible changes in eating practices, the results of the questionnaire applied were promising. Six practices were investigated in the questionnaire, all related to the themes studied and the Month Challenges.

The students were asked about their habits before and after their participation in the group. Out of the 77 participants in this experiment, 93% (n=72) answered the questionnaire, because 5 students missed the last meeting. The findings of this evaluation are presented, in percentages related to the total number of students evaluated (n=72), in Figure 1.



**Figure 1:** Students' eating habits, before and after participating in the group

Before participating in the group, the majority of the students had their meals in front of the television. Most of them also had insufficient consumption of fruits and milk, and did not avoid candies, soft drinks and fatty foods. Behaviors like that are commonly found in childhood [3,4,10]. Children do not choose foods regarding their nutritional value; their choices are mostly based on observation of their family’s eating habits, besides the well-known influence of the school environment in this process [18].

The media has been blamed for the growth in the consumption of highly processed foods, rich in salt, sugar and fat, promoted by their abusive food marketing [6]. Children and adolescents spend more and more time in front of television and computers, which also includes mealtime, leaving behind the family experience and social activity of commensality [4]. At the first meeting, having the mealtime in front of the TV or computer was much debated with the students and their parents. The first Month Challenge has also been about this theme. While, before their participation in the

group, only 30% of the students did not have their meals in front of the TV, after seven months of follow-up, this practice was incorporated by 74% of the participants.

The low consumption of fruits and vegetables, among children and adolescents, is evidenced in several researches, worldwide [3,4]. Although 64% of the participants reported to consume fruits in a daily bases before joining the group, after their experience in the group this percentage increased to 88%.

The daily consumption of milk was stimulated by the relevance of adequate calcium intake, especially in this age [16]. After participating in the group, the prevalence of this practice increased from 45% to 76% among the students. The omission of meals, such as breakfast, is one of the risk factors for overweight, and unfortunately a very prevalent behavior among adolescents [3]. The experience in the group seems to have influenced the incorporation of breakfast in their routine, which increased from 62% to 79% among the participants.

The habit of avoiding fatty foods was present in only 15% of these students before their experience in the group. In addition, only 22% stated they did not consume sweets during the week, before joining the group. After experiencing the group, the restrictions of fatty foods and sweets during the week were incorporated into eating practices by 89% and 90% of participants, respectively.

At the last meeting, the group discussed about the changes occurred after participating in the group and some of the students' speeches were transcribed and are presented below (Table 2).

Regarding the satisfaction survey, 93% (n=72) of the students answered the survey, of whom 98% (n=69) classified positively their participation in the group: 87% indicating the smiley face “liked very much”; and 8% the smiley face “liked”. However, 4% (n=3) indicated dissatisfaction (smiley face “did not like”) about their participation in the group. Some researchers [6] point out that in this complex scenario, where Food and Nutrition Education is developed, there will be no lack of conflicts, and there will be interested and collaborative people, but also there will be people unwilling to change [6].

As eating cannot be seen as a simple act of supplying biological demands, but rather as a social, affective and cultural interaction process, it is coherent to approach eating habit in a collective environment, since it will never be a purely individual activity [6,14,15,19]. A study performed in Porto Alegre, Brazil, with 38 participants between the ages of 7 to and 13 years old, compared two strategies for the management of childhood obesity: individual care and group education program. Both strategies had lasted 6 months, and

at the end, it was concluded that the group education program was as effective as the individualized nutritional care [14].

What changed after your experience in this group?
“I changed, today if I don’t like a fruit, I eat it anyway, and I’m eating more salad.” A., 7 years old.
“Before I had all my meals in front of TV, and now I don’t do this anymore. Every day at lunch I used to drink 2 glasses of soda, now I only drink soft drinks on weekends. Also, I usually ate chips or instant noodles every day, but now I only eat them on weekends.” C., 7 years old.
“Lots of things changed. Because I used to eat lots of candies, but after the group I am eating less sweets and more fruits and salads.” B., 8 years old.
“Yesterday my sister came to give me candies and I said that I didn’t want them. And I played the guessing game “which is this fruit?” with my 7-years-old sister.” C., 8 years old.
“Now, every day when I get home from school I drink a glass of milk.” D., 8 years old.
“I even told my dad not to buy soda, candy, and chips during the week.” M., 10 years old.
“The thing that changed is that I’m eating less fatty foods and more vegetables, because my mam is making more salad. I’m eating much less of pizza, instant noodles, and hamburger.” P., 10 years old.
“I started to eat more vegetables and I left the candies and fatty foods aside. I started to eat the things I didn’t like, as salad. ” K., 10 years old.
“Now, I have more energy to run, before I used to have body pains but now I don’t have them anymore. I’m eating more fruits and vegetables. My father and my grandmother helped me.” G., 10 years old.
“Before, I used to eat a lot of candies, and now I eat less. My mother helped me with the Month Challenges.” A., 11 years old.

**Table 2:** Participant’s speeches about their experience in the group.

These results suggest that the experience has contributed positively to building healthier eating habits; differently from other studies, which analysed as insignificant their results

with educational groups for student's nutritional care [5,10,11]. The groups appear to have stimulated the development of critical ability to make better food choices. In their speeches are implied that the students have contributed to the change of eating habits in their homes, involving their families to.

The main limitation of this is the low range of these groups; ideally, regarding health promotion, they should have involved all students in the school. However, due to the logistical difficulty of extending it beyond the all students, the groups were focused on students with overweight.

Increasingly, the importance of FNE activities in schools is pointed. However, to its effectiveness, the process of Food Nutritional and Education must permeate the day-to-day of the students, leading them to constantly reflect on the meanings and relevance of their food choices [9].

Pietruszynski et al. [9], for example, suggest the adoption of healthy foods as a pedagogical tool to promote healthy eating among the students. It is common to find in the textbooks food examples to induce learning. However, unhealthy foods are most often used, such as using slices of pizza to demonstrate fractional division, or using candies to teach about numerical sets. Children are constantly exposed to unhealthy food advertising, which influences the formation of their eating habits, but school can be an antagonistic force in this process by stimulating and regaining contact with healthy foods [5,9].

As important as FNE activities, are the food and nutritional security policies that must permeate and structure food and nutrition education. That should range from the reorganization of the food system, the regularization of food advertising, to the provision of nutritional care in health services [6,7].

## Conclusion

The use of educational groups as a toll for Food and Nutritional Education for overweight students showed positive results in this experience. The strategy of using groups for FNE seems to be appropriate, since eating is an originally group and social activity.

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**\*Corresponding author:** Rezende Machado de Sousa Luna, Department of Community Health, Federal University of Parana, Brazil, Tel: 1-514-386-9082; Email: [lunarms@gmail.com](mailto:lunarms@gmail.com)

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