



GOOD FOOD HANDLING PRACTICES IN A SCHOOL CONTEXT: CHALLENGES AND POTENTIALITIES

BOAS PRÁTICAS DE MANIPULAÇÃO DE ALIMENTOS EM CONTEXTO ESCOLAR: DESAFIOS E POTENCIALIDADES

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ABSTRACT: The aim of this study is to analyze the Good Practices in School Food and Nutrition Units as well as the challenges and potentialities for its operationalization from the perspective of nutritionists and school workers in a Municipality of Rio de Janeiro. Qualitative and quantitative research was carried out through the application of a checklist of good practices for school meals in the Units, as well as interviews with nutritionists and discussion groups with lunch workers. School Food and Nutrition Units with high, regular and low health risk were identified, as well as challenges and potential for the implementation of Good Practices among the themes of municipal management of the program, school management and work processes of lunch workers and nutritionists. The results indicated the need to develop coordinated actions between actors and sectors involved with the School Food Program in the Municipality with a view to its qualification.

KEYWORDS: Food security. Nutrition and food programs and policies. Public Policy. School feeding.

RESUMO: Objetiva-se analisar as Boas Práticas em Unidades de Alimentação e Nutrição Escolar bem como os desafios e potencialidades para sua operacionalização na perspectiva de nutricionistas e merendeiros de um Município do Rio de Janeiro. Realizou-se pesquisa qualiquantitativa por meio da aplicação de Lista de Verificação das Boas Práticas da Alimentação Escolar nas Unidades, bem como entrevistas com nutricionistas e rodas de conversa com merendeiras. Foram identificadas Unidades de Alimentação e Nutrição Escolar com risco sanitário alto, regular e baixo assim como desafios e potencialidades para a execução das Boas Práticas entre os temas gestão municipal do programa, gestão escolar e processos de trabalho dos merendeiros e dos nutricionistas. Os resultados indicaram a necessidade de desenvolvimento de ações articuladas entre atores e setores envolvidos com o Programa de Alimentação Escolar no Município com vistas à sua qualificação.

PALAVRAS-CHAVE: Alimentação Escolar. Política Pública. Programas e Políticas de nutrição e alimentação. Segurança Alimentar.

INTRODUCTION

The National School Food Program (PNAE) is a Brazilian public policy for promoting Food and Nutrition Security with a view to providing adequate, healthy, safe and sustainable food and promoting Food and Nutrition Education to students enrolled in public and philanthropic schools and community organizations that have agreements with the public authority.¹

This program, created in the mid-20th century, is considered an international reference and innovation in healthy and intersectoral public policy, as it considers that the provision of School Food (SF) should be associated with the strengthening of Family Farming (FF) and the health of schoolchildren, thus demanding greater attention from public policy makers and actors in the federative entities that implement the PNAE.²

In this sense, the implementation of PNAE in the Executing Entities (EEs), that is, in municipalities and states that have implemented this program, presupposes a set of integrated and intersectoral practices through various actors in the public sector administration involved in the local implementation of PNAE.³

To this end, the nutritionist stands out as a professional responsible for a set of mandatory and complementary activities in the SF, ranging from planning the school menu to monitoring and providing guidance on Good Food Handling Practices (GP) in School Food and Nutrition Units (UANE).⁴

However, professional school lunch workers have also gained notoriety among the actors involved in the PNAE qualification. In other words, these school actors, during the historical evolution of the program, have also been incorporating new activities and responsibilities into their work process, initially involving the preparation and offering of small, simple and quick meals, and currently involving the preparation of large meals with various food preparations. In fact, the legal recognition of school lunch workers as educators, through their inclusion in Food and Nutrition Education actions with schoolchildren, also corroborates the evolution of the actions and responsibilities of school lunch workers in the context of PNAE.⁵

Despite the important historical advances of PNAE, as well as the growing interest of other countries in learning about this global reference of successful policy, challenges of different natures have been encountered in the operationalization of the program in Brazilian EEs.² Furthermore, there are no studies in literature that shed light on these aspects, from different perspectives, that positively or negatively interfere in GP during the production and provision of school meals and, consequently, in the implementation of the program.

Therefore, this article aims to analyze the Good Practices in School Food and Nutrition Units (UANE), as well as the associated challenges and potentialities, from the perspective of school actors in a municipality in the state of Rio de Janeiro (RJ).

METHODOLOGY

This is a cross-sectional, descriptive and qualitative-quantitative study, with data collection between 2022 and 2023. The research was carried out in a municipality with medium urban concentration, located in the metropolitan region of the state of Rio de Janeiro, with territorial area of 133.757 km² and estimated population of 481,758 inhabitants.⁶

The sampling unit was composed of seven UANE members of the research project entitled “Healthy and sustainable schools: connecting conscious food production and consumption” and

developed in partnership between a Federal University and the municipality, both located in the state of Rio de Janeiro, as well as lunch workers working at these UANE and nutritionists managing school meals in the municipality.

GP ASSESSMENT AT UANES

To assess the hygienic and sanitary conditions of UANEs, a Checklist of Good Practices in School Feeding (LVBPAE) proposed and validated by Stedefeldt et al. (2013) was applied.⁷

LVBPAE was completed based on non-participant observation of UANEs with the following response options for each item: “yes”, if the UANE met the requirement; “no”, if it did not meet the requirement; and “not applicable”, if the item was not applicable.⁷

The instrument, exclusively developed for the school feeding segment, consists of 99 scored items grouped into six Thematic Blocks (TB). Each item that received a “yes” option was given scores ranging from 1 to 8 (one to eight), according to the degree of risk and importance for the Food and Nutrition Security. The TB of LVBPAE received a weighted score (k), according to the degree of risk of contamination of situations or conditions belonging to that block. The weight consists of a constant value, which sum results in 100, and which acts as a multiplier in the blocks, giving a higher score to those considered to be at greater risk. The total score (S) per TB in each UANE was also determined and the results were expressed as percentages. The final score (FS) of the UANE was obtained from the sum of the scores of the six thematic blocks.⁷

The total score (S) per TB obtained in each of the seven UANEs was compared with the classification criteria proposed by Brasil (2002)⁸. For the final classification of UANEs, according to the health risk, the criteria defined by Stedefeldt et al. (2013)⁷ were used, where the final score between 0 - 25% classifies the UANE as at very high health risk; between 26 - 50%, at high health risk; 51 - 75%, at regular health risk; 76 - 90%, at low health risk and; 91 - 100%, at very low health risk.

ANALYSIS OF THE CHALLENGES AND POTENTIALITIES FOR GP AT UANES FROM THE PERSPECTIVE OF SCHOOL ACTORS

To analyze the challenges and potentialities for GP at UANEs, from the perspective of nutritionists, individual interviews were conducted with nutritionists from the management team of the School Food Program in a municipality in RJ.

Prior to the interviews, the ten nutritionists who are part of the technical management team of the School Food Program in this municipality of the state of Rio de Janeiro were invited to participate in the research by means of an email sent by the researcher in charge to the email address of each nutritionist. The email provided an invitation and a Free and Informed Consent Form (FICF) to participate in the research, with detailed explanations of all procedures, as well as the benefits and risks for the participating nutritionist. After the invitation, one nutritionist in charge and one nutritionist from the technical team agreed to participate in the research.

To conduct the interviews with nutritionists, a semi-structured script was developed for the purposes of this research, containing four open-ended questions related to the description of the positive and negative points that favor and hinder, respectively, compliance with GP at UANEs, as well as how the potentialities could be maximized and the negative points could be overcome with a view to meeting the hygiene and sanitary requirements of UANEs. Interviews were remotely conducted through the Google Meet platform, with average duration of 60 minutes, by prior appointment.

To analyze the challenges and potentialities for GP, from the perspective of the school lunch workers working at UANEs participating in the research, a discussion group entitled “Facilities and obstacles during the development of my work”, adapted from Brasil (2014)⁹, was developed and held, with prior authorization from the school management after contact by the researcher in charge.

School lunch workers were then personally invited by the researcher to participate in the research and received an informed consent form with detailed explanations of all procedures, benefits and risks of their participation in the research. Fourteen school lunch workers from the seven UANEs agreed to participate in the research.

Activities were carried out in the school cafeterias on different days and shifts, with average duration of 120 minutes each, with a view to maintaining the production and provision of school meals and allowing the participation of as many school lunch workers as possible.

The recorded content of interviews with nutritionists and activities with lunch workers were manually transcribed by a trained researcher, analyzed using the thematic analysis technique, and data were presented in the form of emerging themes.¹⁰

This research was developed with the approval of the Research Ethics Committee of the Faculty of Medicine – “Antônio Pedro” University Hospital - Fluminense Federal University, under opinion number 2.949.264 and CAAE 98417718.5.0000.5243.

RESULTS

Table 1 presents the percentage GP results by T Bin each UANE.

TB Processes and Procedures was found to be inadequate in four UANEs and partially adequate in three UANEs, followed by TB Environmental Hygiene, which was found to be inadequate in two UANEs and partially adequate in four.

TB Controlled-Temperature Equipment was found to be inadequate in two UANEs and partially adequate in one.

TB Handlers was partially adequate in four UANEs.

Table 1. Adequacy percentages by Thematic Block in seven School Food and Nutrition Units of a Municipality in the State of Rio de Janeiro.

Score by Thematic Block (%)	School Food and Nutrition Unit						
	1	2	3	4	5	6	7
Buildings and facilities	74.71	56.72	68.13	63.86	70.59	86.21	60.92
Controlled-Temperature equipment	63.64	42.86	100	86.67	46.67	85.71	73.33
Handlers	69.23	58.33	84.61	66.67	41.67	69.23	84.61
Receipt	100.00	--*	100	63.64	63.64	100	64.64
Processes/Procedures	51.63	46.31	57.30	30.97	30.97	73.55	33.96
Environmental hygiene	57.14	71.43	61.90	35.71	35.71	76.32	61.90

*Data not obtained due to lack of receipt of food products during data collection. Source: Authors.

Table 2 presents the results of the health risk classification in the seven UANEs of a municipality in RJ. Two UANEs were classified as high health risk (29%), three as regular health risk (43%) and two as low health risk (29%).

Table 2. Health risk classification in School Food and Nutrition Units (n=7) of a municipality in the state of RJ.

Health risk (%)	n	%
Very high (0 to 25)	0	0
High (26 to 50)	2	29
Medium (51 to 75)	3	43
Low (76 to 90)	2	29
Very low (91 to 100)	0	0

Source: Authors.

Regarding the challenges and potentialities for GP, from the perspective of nutrition managers, four emerging themes were identified, namely: “municipal management of the program”, “school management/directorship”, “work process of the school lunch worker” and “work process of the nutritionist”.

For the theme “municipal management of the program”, nutritionists pointed out challenges related to the difficulty of intersectoral dialogue and the lack of adequate infrastructure at UANEs. In the theme “school management/directorship”, the challenges focused on the lack of recognition of UANEs as part of the school, inadequate infrastructure, difficulty in communication among sectors involved and the undervaluation of school lunch workers.

With regard to the theme “work process of school lunch workers”, the challenges presented by nutritionists included relationship difficulties, lack of awareness of health risks, resistance and difficulty in participating in training activities, and the perception of UANEs as domestic kitchens.

With regard to the theme “work process of nutritionists”, the main challenges were the low frequency of visits to UANEs, the lack of guidance for collecting food samples and the training of school lunch workers.

However, regarding the potentialities for GP, according to the nutritionists' perception, in the theme “municipal management of the program”, the partnership with school management and teamwork in training school lunch workers in GP stood out.

In the theme “school management”, nutritionists pointed out the support of the school management for the training of school lunch workers and the good interpersonal relationships. In the theme “work process of school lunch workers”, the exchange of experiences between school lunch workers from different UANEs during the training sessions was mentioned, as well as the care taken in receiving food items.

Finally, in the theme “work process of nutritionists”, they pointed out the performance of some of their duties, the appreciation of school lunch workers and the good interpersonal relationship with school management as potentialities for GP at UANEs, as observed in Table 3.

Table 4 presents the emerging themes regarding the challenges and potentialities for GP, from the perspective of 14 school lunch workers who participated in the discussion groups.

It was found that the main challenges of the theme “municipal management of the program” are the undervaluation of school lunch workers and the lack of infrastructure at UANEs, for example.

For the theme “school management/direction”, the reports pointed to the lack of communication between management and lunch workers and the presence of other school actors at UANEs.

However, regarding the theme “work process of nutritionists”, the reports from school lunch workers about the challenges pointed out to the complexity of elaborating menus, concerns about sustainability, lack of supervision of suppliers, low frequency of visits by nutritionists to UANEs, difficulty in communication, and insufficient training.

Table 3. Categorization of themes for the challenges and potentialities for the operationalization of Good Handling Practices in School Food and Nutrition Units, from the perspective of nutritionists, in a Municipality in the State of Rio de Janeiro in 2023.

Challenges for Good Handling Practices			
Municipal School Management	School Management/Direction	School lunch worker work process	Nutritionist work process
Low number of nutritionists on the technical staff	Lack of recognition of UANEs as part of the school	Reluctance of older lunch workers to adhere to BP	Low frequency of visits to UANEs to monitor and adapt BP
Little dialogue between the sectors of the municipality and the school administration	Lack of adequate infrastructure at UANEs	Resistance and difficulty in participating in continuing education	Lack of guidance and monitoring of food sample collection at UANEs
Lack of commitment by the Municipality to the demands of inputs for UANEs	Lack of communication between management and lunch workers	Lack of perception of the risks of unsafe food	Training on days and working hours for school lunch workers s
Lack of equipment, furniture and utensils at UANEs	Undervaluation of the school lunch worker	Lack of perception of the importance of the food handling process	
Lack of adequate infrastructure at UANEs		Perception of UANE as a domestic kitchen	
Lack of software for the work of nutritionists		Difficulty in interpersonal relationships	
Low number of school lunch workers			
Undervaluation of the school lunch worker			
Potentialities for Good Handling Practices			
Municipal Management of the program	School Management/Direction	School lunch worker work process	Nutritionist work process
Partnership with the school management	Support from the management for school lunch worker training	Exchange of experiences among school lunch workers	Continued training of school lunch workers
Teamwork for training school lunch workers in BP	Good relationship with nutritionists	School lunch workers participating in training courses	Frequent application of BP checklist at UANEs
		Care when receiving food items	Monitoring processes at UANEs
			Support in visibility and appreciation of school lunch workers
			Good relationship with school management

Source: Authors.

For the theme “work process of school lunch workers”, the reports on challenges highlighted the difficulty in the regular cleaning of UANEs, the use of incomplete uniforms, interpersonal relationships, and excessive workload.

On the other hand, regarding the potentialities for GP, from the perspective of school lunch workers, only two themes were found: “municipal management of the program” and “work process of school lunch workers” (Table 4).

Table 4. Categorization of themes for challenges and potentialities for the operationalization of Good Food Handling Practices from the perspective of school lunch workers, in a municipality in the state of Rio de Janeiro in 2023.

Challenges for Good Food Handling Practices			
Municipal Management of the program	School Management/Direction	School lunch worker work process	Nutritionist work process
Undervaluation of school lunch workers	Lack of active listening to school lunch workers	Lack of regular cleaning of UANEs	Lack of training for school lunch workers
Lack of adequate space and specific areas at UANEs	Entry of unauthorized people to UANEs	Lack of use of complete uniforms	Food/preparations with several pre-preparation and preparation stages
Lack of equipment maintenance		Lack of partnership between school lunch workers from different shifts	Concern with sustainability to the detriment of BP
Inadequate air conditioning at UANEs		Overwork	Lack of supervision of food and suppliers
Impossibility of performing several tasks at the same time			Lack of regular visits to UANEs
Lack of equipment/utensils at UANEs			Lack of active listening to school lunch workers
Lack of complete uniforms			Lack of training for school lunch workers in the PNAE legislation
Purchase of poor quality food			Lack of training for school lunch workers in BP
Potentialities for Good Handling Practices			
Municipal Management of the program		School lunch worker work process	
Quality food products		Proper hand hygiene	
		Partnership among lunch workers	
		Children as motivation	

Source: Authors.

DISCUSSION

The analysis of handling GP at UANEs appears to be a relevant strategy within the scope of management, operationalization and local evaluation of the School Food Program, considering that it contributes to the identification of weaknesses in the hygienic-sanitary context during the meal production process, while also providing a set of important information for the articulation and strategic planning between school and municipal sectors involved in the local qualification of the program.¹¹

Thus, as a result of the historical evolution of PNAE accompanied by the transition from offering simple and quick snacks to large meals to schoolchildren, school lunch workers also needed to develop new skills and attitudes for the production and offering of different safe, healthy and sustainable school meals in line with the promotion of schoolchildren's health.⁹ In this context, this work highlighted the complex set of activities that lunch workers have been performing at UANEs of a municipality in the state of RJ associated with different challenges for promoting GP in these spaces.

Thus, good food handling practices (GP) in the school context began to represent a set of mandatory actions, from a legal point of view, to be performed by school lunch workers in order to achieve the program's objectives and guidelines, especially with regard to the provision of adequate and safe meals and mainly from the inclusion of the nutritionist as the technical person responsible for managing PNAE in EEs.^{12,13}

The findings of this study, in general, indicated that UANEs are much more similar to domestic kitchens than to industrial ones, including their layout, and in some cases, schools and kitchens are adapted from old residential structures, as found in other results in literature.¹⁴⁻¹⁶

To this end, the report of nutritionists about the fact that school lunch workers perceive UANEs as domestic kitchens proved to be a challenge that adds to the others for the operationalization of GP and may have contributed to the results related to UANEs at regular and high health risk, as also demonstrated in other studies.^{15,16}

Thus, weaknesses related to inadequate food handling during the meal production process, in line with the results for Good Practices of Food Handlers and Processes and Procedures, as well as those identified in the reports of nutritionists about the challenges regarding the resistance of school lunch workers to participate in GP training, are in line with findings in literature and reinforce the need for planning and developing training workshops for school lunch workers, considering their active listening.^{3,16}

The weaknesses found for the thematic block Buildings and Facilities can be confirmed in the reports of nutritionists and school lunch workers, who highlighted the lack of adequate infrastructure as a challenge for GP at UANEs, as also highlighted in other studies.¹⁵⁻¹⁶

In this context, several weaknesses that negatively impacted the health risks of UANEs were found. On the other hand, thematic blocks with the best results were related to Receipt and Controlled-Temperature Equipment, with emphasis on the concern with the characteristics and integrity of foods and the presence of refrigeration and freezing equipment in good condition. These findings are in disagreement with other studies described in literature.^{16,17}

Positive findings are related to the reports of nutritionists about the care taken by school lunch workers when receiving food, as it is a potential for implementing good practices in UANEs of the Municipality.

In addition, it is also worth reinforcing the central role of school lunch workers in the execution of PNAE beyond the limits of preparing and offering meals and complying with Good Practices. While there is a legitimate concern about the hygiene and health control practices of school lunch workers, there is little recognition by the school community of the educational role of school lunch workers in promoting the human right to adequate, healthy and sustainable food among schoolchildren.¹⁸ The lack of recognition of the educational role of school lunch workers may be related to the notion of black women occupying a subordinate space, such as in school kitchens, contributing to the invisibility of the role of educators in the school environment.¹⁹

In this sense, the undervaluation of school lunch workers by municipal and school management, as well as the lack of active listening to them by other school actors, were found in this work as challenges for Good Practices at UANEs, from the perspective of school lunch workers participating in the research. These findings clearly show the process of historical invisibility of these professionals in relation to other actors and the school community.¹⁸⁻¹⁹

Therefore, the planning and development of educational activities with schoolchildren should enable the inclusion and effective participation of school lunch workers in such a way as to strengthen their educational role towards the continuous improvement of the PNAE in Brazilian states and municipalities, as well as the unprecedented protagonism of these actors in the school environment.^{17,19}

Potentialities for Good Practices at UANEs were also identified in this study. While the partnerships established among nutritionists, municipal managers, school lunch workers and principals were reported by nutritionists, on the other hand, the reports of the partnership between lunch workers and children as motivation for work presented themselves as potential, from the perspective of school lunch workers. In this context, Pinto et al.²⁰ highlighted the importance of the affectionate relationship between schoolchildren and school lunch workers and their role as caregivers and promoters of healthy eating habits beyond the preparation and distribution of meals to schoolchildren.

Among the seven UANEs in this study, only four were authorized by the school management to hold a discussion with school lunch workers. The responses given by school managements not

authorizing the participation of their lunch staff in the activity, under the allegation of the low number of professionals working on the day to produce and offer school meals, confirm the reports of school lunch workers, found in this study, about their undervaluation by the school management, the lack of active listening by other school actors, the excess of activities and the difficulties of participating in training workshops as challenges for the operationalization of Good Practices.

Thus, the continued training of all actors and sectors involved, directly or indirectly, with the PNAE qualification in EEs is presented as a necessary strategy for a critical reflection on the importance and role of each school actor involved with the process, thus enabling a conscious change of attitudes towards the objectives and guidelines of the program.²¹

Another important point refers to the fact that some identified challenges can also be considered as potentialities for the implementation of Good Practices based on different perspectives, such as the participation of school lunch workers in the training and the acquisition of food products. These findings converge to the fact that the perceptions of how school actors identify and understand aspects that interfere in the implementation of PNAE, with an emphasis on Good Practices, are distinct and result from the experiences of their work process and depend on the mechanisms by which school actors articulate with their peers to implement the program.²⁰

It is worth emphasizing that the absence of national and international studies related to the challenges and potentialities for achieving Good Practices at UANEs, from the perspective of school actors involved with the PNAE, made it impossible to compare the findings of this study with data from literature.

On the other hand, although this study addresses issues restricted to the context of a large municipality and reflects the potentialities and challenges for Good Practices, from the perspective of the study participants, data from this work represent a window of opportunity for a broader discussion, in the university and at the different levels of PNAE management, about the aspects that may affect the planning and execution of the program.

Therefore, the results and reflections of this work confirm the need for valuation and training of all actors involved in the PNAE execution, as well as to develop new strategies for articulation and communication of the sectors involved in the planning, execution and evaluation of the program, with a view to overcoming challenges, maximizing potentialities and fulfilling Good Practices in alignment with the objectives and guidelines of the program.²²

CONCLUSION

This study made it possible, in an unprecedented manner, to analyze the good food handling practices at UANEs in alignment with the challenges and potentialities for their operation, from the perspective of nutritionists and school lunch workers in a municipality in the state of Rio de Janeiro.

A set of non-conformities for the good food handling practices were identified in this work, with an impact, in particular, on UANEs classified as at high and regular health risk.

The analysis of the challenges and potentialities for good food handling practices at UANEs highlights the need for planning and reorganizing the Program's management activities in the municipality as strategies for the continuous qualification of the local school food program.

Furthermore, the complementary aspect between quantitative and qualitative data confirms the need for the development of coordinated actions in the municipality, involving various school actors and sectors to overcome challenges, maximize the potentialities and consolidate the good food handling practices at UANEs in convergence with the objectives and guidelines of PNAE.

Although this study addresses local issues in a municipality in the state of Rio de Janeiro, data from this research provide elements, ideas and correlations for a broader discussion, both in the university and in the PNAE management, on the aspects that affect the quality of school meals and converge towards the continuous improvement of PNAE.

Therefore, new studies in this area should be carried out, involving other cities, Brazilian realities and contexts, as well as school actors related to the planning, implementation and evaluation of PNAE.

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