A alimentação escolar é de fundamental importância no processo de aprendizagem desde os primeiros anos da vida. Nas cantinas escolares há uma intensa produção e manipulação de alimentos, o que demonstra a necessidade da implementação das Boas Práticas de Fabricação para garantir a qualidade dos produtos ofertados. Neste contexto, a presente pesquisa teve como objetivo avaliar as Boas Práticas de Fabricação em uma cantina de uma escola do Município de Missão Velha – CE. Trata-se de uma pesquisa de natureza quantitativa, descritiva, realizada em uma cantina de uma escola de ensino fundamental localizada na zona rural do município de Missão Velha – CE. A pesquisa foi realizada no período de agosto a setembro de 2017, utilizando como instrumento para coletas de dados um check-list baseado na resolução RDC nº275/2002. Após aplicação do check-list foi realizado um treinamento sobre boas práticas na manipulação de alimentos aos manipuladores. Os percentuais de inadequação nas escolas variaram entre 22,59% a 48,39%, mostrando o descumprimento da legislação vigente. Com base nesse contexto, vale ressaltar a importância do treinamento e orientação continuada dos funcionários para que conheçam e cumpram as condutas e as limitações existentes, garantindo o objetivo de eliminar, diminuir ou prevenir riscos à saúde e nesse caso, das escolas, intervir nos possíveis problemas sanitários em todas as etapas e processos, da produção ao consumo da merenda escolar.

Palavras chaves: Alimentação Escolar; Boas Práticas de Fabricação; Manipulador de Alimento.

ABSTRACT

School feeding is of fundamental importance in the process of learning since the first years of life. In school dining halls there is an intense production and handling of food, what shows the need for implementation of good manufacturing practices to ensure the quality of the products offered. In this context, this study aimed to evaluate the Good Manufacturing Practices in a dining hall of a school in the Municipality of Missão Velha-CE. It is a quantitative, descriptive survey performed in a canteen of a primary school located in the rural area of the Municipality of Missão Velha-CE. The research was carried out in the period from August to September 2017, using as a tool for data collection a checklist based on Resolution RDC N 275/2002. After application of the checklist there was conducted a training on good practice for manipulation to food handlers. The percentages of inadequacy in schools ranged from 22.59% to 48.39%, showing compliance with the legislation. Based on this context, it is worth mentioning the importance of continued training and guidance of officials to recognize and comply with the behavior and the existing limitations. It ensures the objective to eliminate, reduce, or prevent risks to health and, in this case, the schools, to intervene in the possible health problems in all steps and processes, from production to consumption of school meals.

Key words: School Feeding; Good Manufacturing Practices; Food Handler.
INTRODUCTION

In accordance with the Guide of Good Practices in School Feeding (MBPAE) of the Department of Education of the State of Mato Grosso do Sul\(^1\), the school feeding is of fundamental importance in the process of learning from the earliest years of school life. Therein, may be contained all the necessary nutrients that contribute to the growth and the biopsychosocial development, learning, the best school performance and the formation of healthy eating habits of the students.

As the MBPAE\(^1\), the food handler plays a role of fundamental importance, not only to prepare the food, but mainly by the responsibility he has to ensure the provision of a safe and healthy food to the student.

The Good Manufacturing Practices (GMP) comprise a set of measures that should be adopted by the industries of foods and food services, in order to guarantee the sanitary quality and compliance of food with the technical regulations. The federal health legislation regulates these measures in general character applicable to all kinds of food industry and food service, and also specific, focused on the industries which process certain food categories. It is up to the Services of State and Municipal Sanitary Surveillance the establishment of complementary standards, in order to cover health aspects that are most specific to its place, not contradicting federal standards \(^2\).

According to Andrade \(^3\), the implementation of GMP consists in a process that is very laborious, but has an enormous importance for the industries and food services, ranging from the improvement in internal organization passing by defining roles and responsibilities of personnel; detection and correction of errors; quality of work; in addition to being a preventive system guaranteeing the quality and safety of food.

In accordance with Marchi et al.\(^4\), the Foodborne Diseases (DTA\(s\)) are considered as public health problems; they manifest themselves in different forms, ranging from mild symptoms to more severe situations that may require medical assistance or even kill.

To be carried out an effective control of the DTA\(s\) efficient, it is necessary to show the people that handle food the importance and the needs of the application of the techniques of GMP, since the reception of raw material, going through all the steps of preparation of the product of nutritional quality and health within the standards of the legislation, in order to ensure the intake of a product harmless, safe, i.e., healthy who consume\(^5\).

In relation to what was previously submitted it is emphasized the importance of analyzing the hygienic-sanitary conditions of school canteens, as well as evaluate the Good Manufacturing Practices during the preparation of school feeding, in order to identify the compliance and non-compliances found, to subsequently apply corrective measures so as to minimize the risks identified, ensuring in this way, the preparation and delivery of food safely.

In this context, this study aimed to evaluate the compliance with Good Manufacturing Practices in a canteen of a municipal school of Missão Velha-CE.

METHODS

It is a quantitative, descriptive study performed in a canteen from a public school of the municipal school network of the city of Missão Velha, located in the countryside. The municipality has a total of 17 public schools belonging to the municipal teaching network, distributed in rural and urban areas. The school in which the research was conducted is one of the largest municipal public schools, located in the district of Missão Nova. The school works in the morning and afternoon shifts, given the levels of education: playschool, elementary I and II, and have a staff of 53 people, being 3 food handlers and approx. 663 students enrolled.

The research was carried out in the period from August to September 2017, using as an instrument for data collections a check-list based on Resolution RDC Nº 275/2002, adapted to the Resolution RDC Nº 216/2004 which analyzes the most relevant aspects for the assessment of GMP. The instrument consisted of items relating to the construction of the building; the maintenance and cleanliness of the premises, equipment and utensils; the control and quality assurance of food that is prepared; professional training; the control of hygiene and health of food handlers; the residue management and integrated control of vectors and urban pests, assessed in terms of the final score in percentage, according to the classification of health risk in: The residue management and integrated control of vectors and urban pests, assessed in terms of the final score in percentage, according to the classification of health risk in situation of health risk too high (score between 0 and 25%), a situation of high health risk (score between 26 and 50%), the situation of regular health risk (score between 51 and 75%), the situation of health risk low (score between 76 and 90%), the situation of health risk too low (score between 91 and 100%) \(^6\).\(^7\).

The answer options for the filling were: as - when handled the specified item; not correct - when did not respond to the observed item and not applicable - when there is not the observed item.

As Amaral et al.\(^8\), the general percentage of adequacy was calculated using the sum total of items suitable, divided by the total number of items evaluated (sum of items suitable and not suitable) multiplied by 100 according to the following equation: General adequacy (%) = \(\frac{\text{total of items suitable + not suitable}}{\text{sum of items evaluated}} \times 100\).

The results obtained provide the basis for the classification of establishments in three groups: GROUP 1 - (76 to 100% of items); GROUP 2: (51 to 75% of items); GROUP 3 - (0 to 50% of items). The recommendations of measures of adequacy were proposals respecting the classification per group.

After application of the check-list there was conducted a training on good practice for manipulation to food handlers.

RESULTS AND DISCUSSION

The general assessment of the canteen demonstrated adequacy far below the recommended by competent bodies.
The results of evaluation of the items from the application of the check-list are presented in Figure 1.

It can be observed that some of the items evaluated presented a high percentage of non-conformity as to care for Good Manufacturing Practices. The result shows that the school analyzed was classified in GROUP 3 (0 to 50% of items), with a percentage of 42.85%.

In a study conducted by Santos, 10% of the sample (a school) was classified in GROUP 1 (76 to 100% of items) and 90% of the sample (nine schools) were classified in GROUP 2 (51 to 75% of items). The percentages of inadequacy in schools ranged from 22.59% to 48.39%, showing compliance with the legislation.

According to Aguiar, the BPFs are required by Brazilian legislation, for all food industries, and the ministerial Resolutions 326/97 and 368/97 of the Ministry of Health, establish the “Technical Regulation on the Hygienic-Sanitary Conditions and of Good Manufacturing Practices for Establishments Producing Food”.

It was set up that the canteen showed some weaknesses or failures, such as: storage of cleaning products next to food products, improper storage of garbage, doors and windows devoid of millimeter grilles, absence of chemical control of pests, lack of attention in respect to personal hygiene of handlers, use of ornamentation, improper use of uniforms, presence of visitors without uniforms in areas of handling, incorrect technique of hand hygiene, lack of installation for correct washing of hands, use of cotton cloths, lack of training program for food handlers and sanitizing/correct storage of equipment and utensils.

Amaral et al., evaluating the hygienic-sanitary conditions of the canteens in public schools of a city in the countryside of São Paulo, reported that all of the canteens were classified in Group 3 attending less than 50% of the items evaluated, what demonstrated adequacy far below the recommended by health surveillance, similar results to those found in the present study, reaffirming the need for adequacy of Good Manufacturing Practices by school canteens.

According to Costa, in a study conducted in the city of Urandi - BA, both the hygienic-sanitary conditions of the kitchens, as well as of the handlers of the schools analyzed were considered unsatisfactory, when compared to the requirements of Brazilian legislation. The study points to the need for deployment and intensification of control measures, in order to meet the stages those involve all the processing of foods in the school units of that city, indicating gaps, from the perspective of safety and quality, with regard to the requirements for the production of food.

Weis, reassures the importance of preparation and proper storage of meals, and that to this end, the schools should have a good physical infrastructure of equipment and utensils.

The specific evaluation of the items noted that the conditions for buildings/facilities, the physical space used for the distribution of school meals offered possible risks of cross-contamination.

The contamination of food can have multiple origins, being the main causes of these events the inappropriate practices in the production and preparation of meals, as well as the lack of personal hygiene of the staff, dubious hygiene of utensils, equipment and surfaces that come into contact with food.

With respect to electrical equipment, there were observed inadequacies, mainly, to the fridge that had bad state of hygiene and insufficient space for the storage of perishable genres. For the utensils, inadequacies were due to failure in the sanitation, locations not suitable for storing them and protect them against contamination.

Figueiredo et al., found that the equipment and utensils even being of easy sanitization and disinfection did not show a good state of conservation and hygiene.
These types of inadequacies cause a risk to the quality of the final product, once, equipment, furniture and utensils may come into direct contact with food and become a source of contamination.

For Azevedo, Lavinas and Ribeiro13, food contamination can have multiple origins, being the main causes of these events the wrong practices in the production and making of meals, as well as the lack of personal hygiene of staff, dubious hygiene of utensils, equipment and surfaces that come into contact with food, as well as sanitation of the entire Unit for Food and Nutrition (UAN).

The receipt of the raw material is held every 15 days, but there is not an adequate control, even for lack of guidance, in order to observe the integrity of the packaging avoiding dented cans or food that had direct contact with the environment, should be verifying the origin of products in accordance with the regulatory bodies. It is recommended to not receive spoiled foods, dents, with bad smell and periods of validity expired.

Already the storage of stock cleaning noted that in the pantry products there were not properly organized, regarding characteristics of perishability and turnover of stocks. Products such as fruits, vegetables and eggs, were kept in boxes or plastic containers such as bowls arranged on shelves and on the floor. As the refrigerated storage, it was observed that the refrigerator had insufficient space to store the vegetables and some homemade sweets. Already the frozen storage was performed in a freezer located inside the small space of the pantry where foodstuffs such as meat and fruit pulps were packed in the same freezer, separated only by bags, contributing to the increase in the risk of cross-contamination.

The storage conditions revealed showed ignorance and carelessness regarding observation, organization, cleanliness and responsibility in the control of raw material. In accordance with the manual of the Brazilian Association of Companies for Collective Meals (ABERC) in proper storage of products it can be guaranteed protection against contamination or recontamination, in addition to reduce to a minimum the losses of nutritional quality, the spoilage and food waste, consequential economic loss, in addition to preventing possible food poisoning and infections 14.

As to the preparation and distribution it was found that access to the site of production of packed allowed the entry and exit of people from other sectors. There was no equipment for warm conservation of food ready for consumption, being its keep performed at ambient temperature. Since the distribution was carried out through the resources available at school, working with a lot of improvisation and in a not suitable place.

Analyzing the results we identified the need for corrective actions of critical points and training for professionals involved in the process on good practices for handling, storage, and processing of food.

After the training, it was realized that occurred adequacy of the dry storage sectors, cool and frozen, as well as hygiene of food handlers, such as the use of disposable apron and caps; and the deployment of posters by directing to the proper way of hand washing and other hygienic habits.

It is necessary to deploy cabinets for storing the belonging of the food handlers, having in view that there is no proper place in the canteen where they can keep.

FINAL NOTES

The diverse aspects related to the quality of school feeding addressed in this study were in non-compliance regarding proper practices in the process of food production. The inadequacies noted relate to the lack of information of the professionals involved in the process, together with the lack of implementation of Good Manufacturing Practices, once that weaknesses were found in almost all items evaluated, being the quality control in the reception and storage of foods that most contributed to the low level of adaptation to regulatory requirements.

Based in this context, it is worth stressing the importance of continued training and guidance of officials to recognize and comply with the norms and the existing limitations, ensuring the objective to eliminate, reduce or prevent risks to health, and in this case, the schools, intervene in the possible health problems in all stages and processes, from production to consumption of school meals.

In summary, this contribution was restricted to only a municipal school of the city of Missão Velha–CE. It is understood that the continuity of this work should be encouraged so that, increasingly other public schools are covered by understanding and change of habits to practice hygiene and sanitary conditions in the production of safe and healthy food.

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DOI: dx.doi.org/10.19095/rec.v6i1.369


