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GOOD FEEDING PRACTICES IN A MUNICIPAL SCHOOL IN THE CITY OF ZÉ DOCA, MA

BOAS PRÁTICAS DE ALIMENTAÇÃO EM ESCOLA MUNICIPAL DA CIDADE DE ZÉ DOCA, MA

BUENAS PRÁCTICAS DE ALIMENTACIÓN EN UNA ESCUELA MUNICIPAL DE LA CIUDAD DE ZÉ DOCA, MA

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ABSTRACT

Food and nutrition are conditions for the promotion and protection of health, allowing the full expression of the potential for human growth and development, quality of life and citizenship. Given the importance and the need for adequacy of nutrition services with current legislation and noting the difficulties, this study aimed to guide on safe food as well, on good feeding practices in public school in the town Ze Doca, MA. A checklist was used to assess the condition of the physical structure and operating the canteen. The results showed the identification of some nonconformities of the work environment, lack of RDC 216 and 275, the lack of hygiene in food handling, lack of Personal Protection Equipment (EPI's) in the enclosure during the preparation of food and unsanitary conditions in physical structure. The handlers have received training and suggestions for changes and alterations to facilitate the process during food handling. Therefore, the recommendations suggested during the execution of activities, one can observe changes in the physical structure, the daily use of PPE, hand hygiene, obtaining consumer and permanent material, according to health standards in order to obtain safe food addition to the reduction of incidents of food contamination.

Keywords: Good Habits. Secure Aliments. Contamination. Training. Aliments Manipulator.

RESUMO

A alimentação e a nutrição são condições para a promoção e a proteção da saúde, possibilitando a expressão plena do potencial de crescimento e desenvolvimento humano, com qualidade de vida e cidadania. Tendo em vista a importância e a necessidade de adequação dos serviços de alimentação à legislação vigente e observando as dificuldades encontradas, o presente trabalho teve o objetivo de orientar sobre alimento seguro, bem como, sobre as boas práticas de alimentação em escola municipal no município de Zé Doca, MA. Foi aplicado um checklist para averiguar as condições da estrutura física e operacional da cantina. Os resultados mostraram a ocorrência de algumas inconformidades no ambiente de trabalho, o desconhecimento da RDC 216 e 275, a falta de higiene na manipulação dos alimentos, a ausência de Equipamentos de Proteção Individual (EPI's) no recinto durante o

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preparo dos alimentos e condições insalubres na estrutura física. Os manipuladores receberam treinamento e sugestões para modificações e alterações para facilitar o processo durante a manipulação dos alimentos. Portanto, as recomendações sugeridas durante a execução das atividades, pode-se observar mudança na estrutura física, a utilização diária de EPI's, a higienização das mãos, a obtenção de material de consumo e permanente, segundo padrões sanitários visando à obtenção de alimentos seguros, além da diminuição de casos de contaminação por alimentos.

Palavras-chave: Boas Práticas. Alimentos Seguros. Contaminação. Treinamento. Manipulador de Alimentos.

RESUMEN

La alimentación y la nutrición son esenciales para promover y proteger la salud, permitiendo la plena expresión del potencial humano de crecimiento y desarrollo, garantizando la calidad de vida y la ciudadanía. Dada la importancia y la necesidad de que los servicios de alimentación cumplan con la legislación vigente y aborden los desafíos encontrados, este estudio tuvo como objetivo brindar orientación sobre alimentos seguros y buenas prácticas alimentarias en una escuela municipal del municipio de Zé Doca, Maranhão. Se aplicó una lista de verificación para evaluar las condiciones físicas y operativas del comedor. Los resultados revelaron algunas no conformidades en el entorno laboral, desconocimiento de las RDC 216 y 275, higiene deficiente en la manipulación de alimentos, falta de Equipo de Protección Individual (EPP) durante la preparación de alimentos y condiciones insalubres en la estructura física. Los manipuladores de alimentos recibieron capacitación y sugerencias para modificaciones y cambios que facilitaran la manipulación de alimentos. Por lo tanto, las recomendaciones sugeridas durante la ejecución de las actividades se pueden observar en cambios en la estructura física, el uso diario de EPP, la higiene de manos, la adquisición de materiales consumibles y permanentes, de acuerdo con las normas sanitarias destinadas a obtener alimentos seguros, además de la reducción de los casos de contaminación alimentaria.

Palabras clave: Buenas Prácticas. Alimentos Seguros. Contaminación. Capacitación. Manipulador de Alimentos.

1 INTRODUCTION

Thinking about the context and the current situation in relation to children's educational centers with children under six years of age, the needs of intellectual development are contemplated, as well as the right to socialization, children's experiences and specific care (RAVAGNANI and STURION, 2009). These centers should be organized in such a way as to have a food and nutrition unit, in order to allow the target audience to have benefits to maintain, recover or improve health, through a diversified and nutritionally balanced diet and that this joint action becomes a consolidated habit of healthy habits.

It is known that Foodborne Diseases (DTA's) are a serious public health problem in any part of the world, especially in developing countries such as Brazil. Statistics prove that foodborne diseases, especially those of microbial cause, are increasing every year, and there is no country immune to the scourge (ANDRADE et al., 2003).

DTA's can be caused by several groups of microorganisms, including protozoa, bacteria, molds and viruses. Bacteria have a great diversity of pathogenesis, being considered the most important and most frequently associated with foodborne diseases. During processing, food can be contaminated by pathogenic bacteria by humans as a result of deficiencies in hygiene conditions, either from people or sick animals or from feces from infected individuals.

The Collective Food segment has grown rapidly in recent decades. This sector comprises the place where "food and nutrition activities carried out in the Food and Nutrition Units (UAN) are carried out, as such understood as companies providing collective food services, self-managed food services, commercial restaurants and the like, maritime hotels, *catering* servicesand frozen foods, flight attendants and kitchens of health care establishments, activities specific to School Feeding and Worker Feeding" (CFN RESOLUTION No. 380/2005).

The search for quality and continuous improvement, the increase in consumer concerns, led to the emergence of control procedures that increased the quality of products. This is how the Good Manufacturing Practices (GMP's) emerged, which, according to the Roadmap for the preparation of the Manual of Good Manufacturing Practices in Restaurants, are the necessary procedures to ensure the sanitary quality of food. Such procedures address the physical structure of the organization, the arrangement of machinery and equipment, the use of machinery, equipment and utensils, hygiene and behavior of food handlers, cleaning and sanitization of surfaces and flows of the processes developed, among others. Thus, it is correct to say that the main goal of GMP is the maximum reduction of risks.

The present work had, therefore, to provide guidance on safe food, as well as on good feeding practices in a municipal school in the municipality of Zé Doca, MA.

2 MATERIAL AND METHODS

The research was carried out at the José Arcanjo de Deus e Silva municipal school, located in the Vila Gusmão neighborhood, in the city of Zé Doca, MA, whose community is classified as low-income and the public served, in almost its entirety, are children of workers without a fixed job and with low education. The school, in addition to exercising the pedagogical function, stands out for its community character, as it intends, through a policy of quality in teaching, research and extension, to offer a service committed to human development encompassing pedagogical, social, economic and environmental dimensions.

It is worth noting that the school has a physical structure with eight classrooms, three bathrooms, a digital station, a canteen, an event hall and a secretariat and teachers' room, where seven classes with high school and one in the Youth and Adult Education (EJA) modality operate. The total number of students is 509 and each class has an average of 26 students. School meals are offered once each shift, being manipulated in the morning and afternoon shifts, as shown in chart 1.

Table 1

Identification of the school, number of students and number of lunch cooks

School: José Arcanjo Municipal	N. students	N. cooks
Morning shift	284	5
Afternoon shift	225	4
Total	509	9

Source: Author.

To start the activities in force in the project, initially a document was sent to the Municipal Department of Education with a presentation of the project so that the actions could be carried out in the school and then forwarded to the school's Board. The data were collected after permission from all those responsible for them, as it was a matter of collecting samples from the hands of the handlers and some utensils used in the school kitchen, before and after the training of lunch cooks and employees, so that everyone was aware of the risk of food contamination before training, when the importance of knowing how to use good feeding practices is unknown.

The work was carried out from August to December 2011, where information was collected from the handlers, through a semi-structured questionnaire whose objective was to

know the profile of each one, in addition to observing and verifying in regular visits the preparation of food, place of storage, receipt and distribution of meals.

The work took place in three stages, distributed as follows:

Identification Stage - initially, a data survey was carried out during the months of August and September, obtained from the school's regulations and unstructured interviews with the employees. The evaluation parameter was whether the items observed were in accordance with what is recommended by the current legislation, namely, RDC 275 (2002) and RDC 216 (2004). RDC 275 "establishes Standard Operating Procedures that contribute to ensuring the hygienic-sanitary conditions necessary for the processing and industrialization of food, contemplating Good Manufacturing Practices" (VISALEGIS, 2002).

The items stipulated in the aforementioned legislation are:

FIELD A – School Identification

FIELD B – Evaluation

1. Buildings and facilities;
2. Equipment, furniture and utensils;
3. Handlers/Lunch Cooks;
4. Preparation of School Meals.

At the same time, the receipt of the lunch, that is, the items necessary for the preparation of food, was monitored, and the critical points related to the conditions of transport and receipt were listed, shown in figure 1, which represented the transport of the lunch in a vehicle without appropriate refrigeration. Figure 2 shows *fresh food* exposed on an inadequate surface.

Figure 1

Lunch being transported in a vehicle without appropriate refrigeration

Source: Author.

Figure 2

Fresh food exposed on an inadequate surface

Source: Author.

Intervention Stage - in this stage, the material was prepared for two (02) days of training for the school's food handlers and other employees, as well as ten other participants of the Food Technology course at the Federal Institute of Education, Science and Technology of Maranhão (IFMA), Zé Doca Campus, with the purpose of becoming multipliers in other schools in the region

The training was carried out in the auditorium and in the school canteen (Fig. 3), with the use of didactic resources such as a multimedia projector and dynamic interventions among the participants. To facilitate pedagogical exposition, the course material contained images and short videos, with simple and accessible explanations, as well as easy language and practical examples to make the learning course viable. The material with information about school meals and a booklet of good hygienic and sanitary practices was delivered to the participants during the training. It is worth noting that the training involved the participation of all employees and directors.

Figure 3

Students in training in the school canteen

Source: Author.

In a period of two days, the following subjects were addressed: personal hygiene; concept of good practices; importance of correct hand washing and correct technique; maintenance and cleaning of facilities, equipment and utensils; rules for receiving and storing food properly; hygiene and food handling; necessary care to avoid contamination in food and produce quality and safe school meals, in compliance with good hygienic-sanitary practices.

Evaluation Stage - in this stage, the actions carried out and the comparison of the results before and after the intervention were evaluated. The aim was to assess the impact of the interventions, as well as the need for other actions or corrective measures to change the situation, in order to make it less vulnerable and subject to risk situations. Among the actions, the performance of new microbiological analyses stands out, evaluating the results regarding possible changes in hygienic-sanitary standards, comparing them to the results of the first analyses.

3 RESULTS AND DISCUSSION

The beginning of the work took place properly, with the fact that the Secretary of Education of the municipality had supported and contributed in a favorable way to the realization of the research, passing on the information to the school principal and then passing it on to the other school employees.

The procedures of RDC No. 275/2002 – ANVISA were followed, which presents a checklist of Good Manufacturing Practices in Food Manufacturing Establishments.

The instrument used for data collection was passed on and analyzed together with all those directly responsible for the preparation of the lunch, at the same time that non-conformities were identified.

All the items mentioned above were emphasized in the training and passed on to the school managers, so that there was the proper adaptation, but not all the points proposed for change were met. Table 1 shows the consequences after the intervention.

Table 2

Consequences after the intervention

Consequences
Partial use of uniform for the preparation of lunch
Skilled food handlers
Distribution of Manual of Good Handling Practices
Implementation of the daily work script in the kitchens
Implementation of kitchen cleaning routine
Implementation of correct sanitization in the utensils where the lunch is placed
Utensils exchange in the school canteen (knife, board and spoons)

Source: Author.

Handlers are a fundamental part of the hygiene and safety of food in the different stages of the food chain, since they can be the vehicle of numerous microorganisms for food, whether spoilage or potentially pathogenic (GALETTI, 2005).

In the microbiological analyses carried out, it can be seen, by the values found, that the school improved its hygiene procedures regarding the handlers' hands. Table 3 shows that in the total count of *Staphylococcus aureus* of the nine analyses performed, six (66.6%) were found to be compliant and 33.3% of the hands were in disagreement with the compliance criteria used.

In order to ensure that handlers who have direct or indirect contact with food do not constitute a source of contamination, it is necessary to maintain an adequate level of personal hygiene, as well as appropriate behaviors and modes of operation (WHO/FAO, 2003).

Table 3

Results of Staphylococcus aureus counts

Samples	*S. Aureus*		CT	
	Before	After	Before	After
Manipulator Manipulator 1	Countless	45	102	Absence
Manipulator 2	Countless	43	91	Absence
Manipulator 3	Countless	57	87	Absence
Manipulator 4	Countless	44	Countless	Absence
Manipulator 5	Countless	83	Countless	Absence
Manipulator 6	150	38	66	Absence
Manipulator 7	208	123	86	Absence
Manipulator 8	123	39	65	Absence
Manipulator 9	75	49	52	Absence

Source: Author.

4 CONCLUSION

It was found that the training was important to transmit knowledge and it is suggested that other works be developed to motivate the employees in the execution of their activities. The training of food handlers through training implies contributing, not only to the improvement of hygienic and sanitary quality, but also to the improvement of the techniques and processing used. From the analysis of the results obtained, it was found that the handlers had greater knowledge about the subjects treated after training, especially regarding the importance of Good Practices, existing dangers in food and microorganisms. The importance of maintaining training and continuing education activities with the handlers involved in the school lunch production process was confirmed, as it avoids inadequate food processing and possible occurrences of foodborne diseases.

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