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ARTICLE
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Adequacy of the best practices manual of and of the standard operating procedures in food services in Ponta Grossa, State of Paraná

Adequação do manual de boas práticas e dos procedimentos operacionais padronizados em serviços de alimentação de Ponta Grossa, Paraná

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ABSTRACT

Introduction: The Best Practices Manual (BPM) and the Standard Operating Procedures (SOPs) are documents that are intended to portray the operations performed by establishments. **Objective:** In this context, the present work had as objective to emphasize the adequacy of these documents in food services. **Method:** Thus, the BPMs and SOPs of 15 food services were evaluated *on the spot*, divided into three categories, using a checklist elaborated based on the sanitary legislation in force. This list consisted of eight items on the BPM and eight on the SOPs and included aspects such as language, presence of mandatory items, storage location and update status of the documents. **Results:** The average adequacy of BPM and SOPs was 60.62% and 80.50%, respectively. However, differences were observed among the three categories of establishments, with a lower level of adequacy in the food and nutrition units. In addition, some documents did not portray the reality of the places and did not present signatures, fact that indicates lack of commitment of its implementation. The language used was not simple and understandable and many documents were outdated. **Conclusions:** This analysis allows to conclude that although food services present BPM and SOPs, many points in their elaboration and implementation need to be improved.

KEYWORDS: Health Legislation; Food Hygiene; Food Handling; Documents

RESUMO

Introdução: O Manual de Boas Práticas (MBP) e os Procedimentos Operacionais Padronizados (POP) são documentos que têm como finalidade retratar as operações executadas pelos estabelecimentos. **Objetivo:** Nesse contexto, o presente trabalho teve como objetivo analisar a adequação destes documentos em serviços de alimentação. **Método:** Assim, foram avaliados *in loco* os MBP e POP de 15 serviços de alimentação, divididos em três categorias, sendo utilizada uma lista de verificação elaborada com base nas legislações sanitárias vigentes. Esta lista era composta por oito itens sobre o MPB e oito sobre os POP e contemplava aspectos como linguagem, presença dos itens obrigatórios, local de armazenamento e estado de atualização dos documentos. **Resultados:** A média de adequação dos manuais e dos POP foi de 60,62% e 80,50%, respectivamente. Contudo, foram verificadas diferenças entre as três categorias de estabelecimentos, com menor nível de adequação nas unidades de alimentação e nutrição. Além disso, alguns documentos não retratavam a realidade dos locais e não apresentavam assinaturas, fato que aponta falta de compromisso em sua implementação. A linguagem utilizada não era simples e compreensível e muitos documentos estavam desatualizados. **Conclusões:** Com base nessa análise, conclui-se que embora os serviços de alimentação apresentem MBP e POP, muitos pontos na elaboração e implementação precisam ser melhorados.

PALAVRAS-CHAVE: Legislação Sanitária; Higiene dos Alimentos; Manipulação de Alimentos; Documentos

INTRODUCTION

The number of people who eat out of their homes has increased substantially in recent years due to some socioeconomic changes, like women's increased participation in the labor market, urbanization, industrialization and the distance between workplaces and residential areas. To meet this demand, there has been a remarkable growth in food services[1,2].

According to the Resolution of the Collegiate Board (RDC) n. 52, of September 15, 2014, these establishments are those that handle, fraction, store, distribute, transport, display for sale and deliver food prepared for consumption. Examples are industrial and institutional kitchens, healthcare service food and nutrition units, cafeterias and restaurants[3].

Food services are a promising market. According to the 2008-2009 Brazilian Institute of Geography and Statistics (IBGE) Family Budget Survey (POF), Brazilians use 24% of their income in out-of-home food expenses[4]. The Brazilian Association of Collective Meal Companies (Aberc) pointed out that in 2017 the sector served 12 million meals/day and earned approximately BRL 18.2 billion, with a growth trend for the coming years[5].

But as food services grow, so do foodborne diseases. According to data from the Brazilian Ministry of Health, from 2000 to 2017, 12,660 outbreaks were reported in Brazil, with 239,164 sick people and 186 deaths. Of these outbreaks, 15.4% occurred in food services[6].

In this scenario, we should consider the importance of food services in the daily life of the population. According to Medeiros et al.[7], the objective of these services should be to serve quality food considering consumer habits and preferences. But for these places to offer safe and quality products, they need to implement and comply with Good Handling Practices (GHP), as well as train and educate their food handlers.

GHP are methods that should be adopted to ensure the hygienic-sanitary quality of food, and their adoption is a requirement of current legislation[8]. In this regard, companies should prepare and implement a Best Practice Manual (BPM) and Standardized Operating Procedures (SOPs). These are documents that help ensure better quality service and prevent food contamination.

The BPM is a document that describes the work done in the establishment[9]. It must thoroughly describe all procedures and routines to be performed in accordance with the health legislation in force[10]. SOPs are documents that establish instructions for performing routine and specific activities in food handling[11,9]. In this sense, it should be noted that the most skilled and knowledgeable professionals to design and implement BPMs and SOPs are the dietitians, as determined by the Resolution of the Federal Council of Dietitians (CFN) n. 600, of February 25, 2018[12].

In view of the above, the objective of the present research was to analyze the BPMs and the SOPs in different food services in the city of Ponta Grossa, state of Paraná, Brazil. We checked whether these documents were written in proper language and whether they contained all the necessary items.

METHOD

This research is classified as a cross-sectional and descriptive study. To do this work, the BPMs and SOPs of 15 food services were evaluated: six commercial restaurants, six food and nutrition units (which include outsourced industrial restaurants) and three hospital food and nutrition units in the city of Ponta Grossa, state of Paraná, Brazil. The small sample is warranted by the fact that the research only included establishments that had BPMs and SOPs and were willing to share them with the researchers.

Data were collected in February and March 2017 by the researchers themselves, and the documents were analyzed on-site, in the establishments, according to previous agreement with the respective managers.

Information was collected from a checklist prepared by the authors based on the current Brazilian health legislation (RDC n. 216 of September 15, 2004[9], and n. 275 of October 21, 2002[11]). This list had eight items on BPMs and eight on SOPs, with two options of answers: adequate or inadequate.

The checklist verified the presence of some minimum items required by the law. In the case of the manuals: building and cleaning of facilities, equipment, furniture and utensils; integrated vector and urban pest control; water supply; waste management; food handlers' health; raw materials, ingredients and packaging; and food preparation and display for consumption. In the case of SOPs: presence of objective; responsibilities; preventive and corrective measures; liabilities; description of the procedure; monitoring and records.

Furthermore, in both documents we looked for: the signature of the legal responsible parties, as well as the signature of the head of the technical area in the body of the document, on all pages; the place of storage of the documents (easy access, not in places that were locked, inaccessible or unknown to the handlers); the type of language used (simple and objective, avoiding the use of technical terms and/or very long sentences); the verbal tense used in the writing (present tense, avoiding the use of expressions like "should be"); the uniqueness of these documents to each establishment (not to be used in several units of the company); the presence of an implementation schedule of corrective measures for the described nonconformities; how updated the documents were (we considered as updated those with a revision date of less than 1 year; if they did not have a date, the documents were considered outdated).

After collection, the data were tabulated on Microsoft Office Excel® 2007. The results were then analyzed through percentages and tables and compared with the scientific literature we found.

RESULTS AND DISCUSSION

Regarding the BPM, considering the three categories of establishments, commercial restaurants and hospital food and nutrition units had a higher level of adequacy, as shown in Table 1. Commercial restaurants are to be highlighted as to their adequacy in items 2, 4 and 6. Food and nutrition units stand out in items 1 and 3. Finally, hospital food and nutrition units stand out in items 1, 2 and 4.

Item 1 (BPM storage location) was a positive finding in the present study, except for commercial restaurants, which had the lowest adequacy percentage. The BPM is a tool that assists in the production of safe food. It should always be in a place that is readily accessible and available for health officials and authorities whenever required[9,13].

Regarding item 2 (accessible language), only the manuals of the food and nutrition units were inadequate. This draws attention to the fact that the documents in this segment need more suitable writing. So that all employees can use the BPM as a daily work tool, it must be written in a language that can be easily understood by all those involved in food handling, as recommended by Santos Junior[14]. A study by Andrade et al.[15] also stated that although companies have BPMs, these are not used correctly and their structure and wording are inappropriate to what is required by the Health Surveillance.

In the case of item 3 (presence of all mandatory items), only the food and nutrition units achieved total adequacy. These items are important to ensure safe and quality food production as they involve all food handling processes. According to Machado, Dutra and Pinto[8], good practices should include raw material quality, water quality, physical facilities, equipment and utensils, pest control, health control and staff training, waste management, quality criteria for prepared food and documentation.

In item 4 (uniqueness to the establishment), food and nutrition units had a low adequacy percentage, which indicates that the analyzed documents do not describe the particular reality of these places. According to the Paraná Regional Nutrition Council[16], the BPM must be specific to each food and nutrition unit, considering the current sanitary legislation. For this, it must describe the entire meal production process, as well as the main shortcomings and potential points of contamination risk[10].

Another point that deserves attention is related to item 5 (document update), which obtained the same percentage of adequacy in the three categories of the study. The BPM is a document that must always be up to date, because there is no use having it in hand if its content does not portray the reality of the operations. This fact corroborates a study by Guedes[17] in hospital food and nutrition units, where the BPMs were outdated and incompatible with local activities. Veronesi and Ceveião[10] stressed that the implementation of good practices should be an ongoing process that often requires adjustments and updates to improve processes.

Item 6 (language used) was not adequate in food and nutrition units, since we found the “should be” expression. This was also evidenced by Nunes and Batista[18], who also found the use of this expression in the documents. This expression reflects a false reality of the establishments, since the actions described in the manuals may not necessarily be routinely performed.

Santos, Rangel and Azeredo[19], in a survey conducted in commercial restaurants, also found that the BPMs did not portray the reality of establishments and that their responsible parties were unaware of their importance. These data reinforce that the BPM is a document that must be used daily by the establishments in their food production activities, because there is no use having the BPM and not following it on a daily basis.

Table 1. Adequacy of the best practices manuals of the food services of Ponta Grossa – Paraná.

Item	Adequacy (%)			
	Commercial restaurants	Food and nutrition units	Hospital food and nutrition units	Overall mean
1 - Stored in an accessible place	67.0%	100.0%	100.0%	89.0%
2 - Simple and objective language	100.0%	33.0%	100.0%	78.0%
3 - Presence of all mandatory items	67.0%	100.0%	67.0%	78.0%
4 - Uniqueness to the establishment	100.0%	17.0%	100.0%	72.0%
5 - Manual update	67.0%	67.0%	67.0%	67.0%
6 - Language used (present tense)	100.0%	0%	67.0%	56.0%
7 - Presence of signatures/dates of the drafting technician and legal responsible person of the establishment	50.0%	0.0%	33.0%	28.0%
8 - Description of nonconformities and schedule for implementation of corrective actions	17.0%	0.0%	33.0%	17.0%
Mean adequacy by establishment category	**71.0%**	**39.6%**	**70.8%**	**60.6%**

Source: Data collected from the survey.

It is important to highlight that all categories of establishments had low adequacy values in item 7 (presence of signatures and dates). This result points out severe shortcomings, as it is suggested that the documents were present but there was no commitment to their implementation. The BPM must be approved, dated and signed by the technical and legal responsible persons of the establishment, thus making a commitment to its implementation, evaluation, registration, monitoring and maintenance[14,13].

Also because of the inadequate results in item 8 (description of nonconformities and schedule of corrections), it is suggested that the establishments do not have nonconformities or if they do, these nonconformities are not described in the manuals. Inadequate results in this topic were also observed in a study by Nunes and Batista[18]. It should be noted that the BPM must point out corrective actions to be adopted by the establishment, in the form of a schedule, in order make the establishment compliant[14,20].

Starting from the analysis of the manuals, we also evaluated the SOPs, which are documents that complement them. The highest adequacy percentages were found in items 1 to 6, as described in Table 2. Considering the three categories of establishments, commercial restaurants and hospital food and nutrition units had the highest levels of adequacy.

In terms of items 1 and 2, all establishments had the objective/responsibilities and monitoring/registration items. This is very important because, according to RDC n. 275/2002, the implementation of SOPs must be regularly monitored to ensure their intended purpose[11].

Item 3, which deals with the four SOPs established by RDC n. 216/2004[9], was adequate in all the establishments. A study by São José, Coelho and Ferreira[21] verified that all SOPs were determined, but two of them were not actually followed. Several other studies have also pointed to the presence of incomplete SOPs in various types of food services[17,22,23].

The implementation of these documents is very important to guarantee the hygienic conditions of food preparation. As required by RDC n. 216/2004, food services must implement SOPs related to facilities, equipment and furniture sanitation, integrated vector and urban pest control, reservoir sanitation, and handlers' hygiene and health[9].

In item 4 (stored in an accessible place), the food and nutrition units and the hospital food and nutrition units were adequate. In contrast to the results of this research, Guedes[17] noted that some food and nutrition units did not keep their SOPs available and accessible to their employees.

The establishments must also adopt corrective measures in cases of deviations verified during execution, as recommended by RDC n. 275/2002[11]. In item 5 (description of the procedures and corrective measures), it was found that only some of the hospital food and nutrition units did not perform this action. In the case of item 6 (preventive measures), the hospital food and nutrition units had a low adequacy percentage, as well as the food and nutrition units. It is noteworthy that the description of corrective and preventive measures in SOPs is of paramount importance. Preventive measures are actions taken to eliminate the cause of potential nonconformity or undesirable situations. That is different from corrective actions, which are taken to eliminate a detected nonconformity or other undesirable situations[24].

In item 7 (language), only the food and nutrition units had a low adequacy percentage. This finding suggests that the language of SOPs may be hindering the correct use of these documents. According to Santos Junior[14], "the language used must be easily grasped and understood by all employees involved directly or indirectly in food handling."

In item 8 (signatures and dates), only hospital food and nutrition units had some level of adequacy. This item was also negatively evaluated in the BPMs, which shows that neither documents meet what is required by the law. The SOPs must also be

Table 2. Adequacy of the standard operating procedures of food services in Ponta Grossa - Paraná.

Item	Adequacy (%)			
	Commercial restaurants	Food and nutrition units	Hospital food and nutrition units	Overall mean
1 - Presence of objectives and responsibilities	100.0%	100.0%	100.0%	100.0%
2 - Presence of monitoring and registration	100.0%	100.0%	100.0%	100.0%
3 - Presence of the four mandatory SOPs	83.0%	100.0%	100.0%	94.0%
4 - Stored in an accessible place	67.0%	100.0%	100.0%	89.0%
5 - Presence of description of corrective procedures and measures	100.0%	100.0%	67.0%	89.0%
6 - Presence of preventive measures	100.0%	17.0%	67.0%	61.0%
7 - Simple and objective language	100.0%	33.0%	100.0%	78.0%
8 - Presence of signatures/dates of the drafting technician and legal responsible person of the establishment	0.0%	0.0%	33.0%	33.0%
Mean adequacy by establishment category	**81.2%**	**68.7%**	**83.3%**	**80.5%**

Source: Data collected from the survey.
SOP: standard operating procedures.

compliant with the purpose of establishing real instructions for the routines performed in the establishments, otherwise their existence makes no sense. These routines are especially warranted in shift-based workplaces. With team changes, routines enable tasks to continue to be performed in a standardized and organized manner to ensure food safety[25].

Furthermore, Kraemer and Saddy[20] emphasized that the implementation of BPMs is not only about the creation of documents, but, above all, the deep commitment of all professionals somehow involved in food handling activities.

CONCLUSIONS

Although all food services had BPMs and SOPs, these did not have adequate structure and wording as required by the current health legislation, since they often failed to reflect the reality of the places.

It is important to emphasize that simply preparing documents without fully enforcing them is pointless. In such cases, they do not work as tools to improve good practices and prevent food contamination. The implementation of good practices is not only a legal requirement, it also protects the health of consumers and increases the quality and safety of products. It should, therefore, be a continuous and permanent process.

The challenges found in the conduction of this work were related to the limited number of documents we analyzed, since some places did not provide manuals for research because they did not have any. This fact eventually limited the inclusion of more establishments, like more commercial restaurants.

The research was also limited to evaluating the documents: we did not observe their use on-site. We suggest the conduction of further research that observes the practical application of the BPMs and SOPs and thus can assess the enforcement of these documents by the establishments.

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Conflict of Interest

Authors have no potential conflict of interest to declare, related to this study's political or financial peers and institutions.