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Adequacy of good practice in two FAST FOOD restaurantes in municipality of São Paulo, SP, Brazil

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ABSTRACT

OBJECTIVE

To identify the adequacy of good practices in two restaurants of two American fast-food franchises in the city of São Paulo, SP, Brazil.

METHODS

A checklist adapted from the health legislation was used in each restaurant, identified as A and B, whose items were grouped into 5 blocks: Building and installation, Equipment, furniture and utensils, Handlers, Food production and transportation, and Documentation. The classification of the restaurants was based on the sanitary legislation: group 1, between 75 and 100% of conformities; group 2, between 51 and 74% of conformities; and group 3, from 0 to 50% of conformities. The general classification of the restaurants and by block of items was carried out.

RESULTS

Restaurant A was classified in group 2 and B in group 1. Most of the non-conformities were observed in the blocks Documentation, Production and transport, and Manipulators for both restaurants; and Building and installation for restaurant A.

CONCLUSIONS

Restaurant B had a higher percentage of conformities than restaurant A, and the classification was group 1 and 2, respectively. Regardless of the classification, both presented non-conformities relevant to the safety of the food produced. Based on that, it is suggested to apply an action plan to adapt to the current legislation, guaranteeing quality to food and health to consumers.

DESCRIPTORS

Checklist, Good manufacturing practices, Food safety; Restaurants, Food hygiene.

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INTRODUCTION

Fast-food eateries appeared in the late 1930s, in California, United States. They are contemporary with the expansion of urbanization, mass production, Henry Ford and cinema. They emerged as cinema cafeterias in which viewers watched movies from inside their cars. The brothers Maurice and Richard McDonald, in 1937, founded a drive-in cafeteria that was sold after some time to Ray Kroc. He introduced innovations that redefined the meaning of fast food: they replaced cutlery, glasses, and plates with disposable packaging, converted the counter into the place where orders were placed and paid directly by customers by cashiers, restricted the menu to a limited number of products, and organized production on the assembly line. McDonald's restaurant was the first to use a factory assembly line for food production, following the Taylor production model. Due to the low cost of the product offered, they won over children, youth, and the families of American workers[1].

Globally, the ranking of countries that spend more on food sold in fast food is headed by the United States, China, Japan, Brazil, and India, in that order. In 2016, Brazil spent R $ 59,520 million, and the forecast for 2019 is R $ 69,569 million, with a growth of 30.9% considering the period from 2014 to 2019[2].

Various changes in society have contributed to the population increasing consumption and replacing home meals with food outside the home, such as the increase in the production of pre-prepared foods and the insertion of women in the labor market[3]. In parallel with the increase in meals away from home, there was an increase in the incidence of food-borne diseases caused by pathogenic microorganisms. Outbreaks of foodborne diseases in recent years demonstrate that this type of situation has the potential to affect thousands of people, leading to significant health costs, loss of income for food companies, and in the worst case, death[4]. Between 2007 and 2014, 49,231 cases of food poisoning were reported in Brazil, and the southeast and northeast regions had the highest incidence, with 22,687 and 16,215 cases, respectively[4].

The literature points out bacteria as the main group of agents that cause food-borne diseases in Brazil and worldwide[5]. The most frequent bacterial agents are Salmonella spp., *Staphylococcus aureus, Bacillus cereus* and *Escherichia coli*. Its most common symptoms include stomach pain, nausea, vomiting, diarrhea and in some situations, fever. In more severe cases, patients may experience severe dehydration, bloody diarrhea, respiratory and acute kidney failure. The foods frequently involved are raw or partially cooked, especially those based on eggs and meat products[6].

To guarantee the hygienic-sanitary quality of the food and to avoid cases of food poisoning, the Ministry of Health and the National Health Surveillance Agency establish the necessary requirements for inspection of meal producing places[7]. Brazilian health legislation requires establishments to implement good manufacturing practices and standard operating procedures, considered universal procedures or steps, which guarantee safety to operational conditions within the food industry[7].

Thus, the objective of this study was to identify the adequacy of good practices in two restaurants of two fast-food franchises of the American type, in the city of São Paulo, SP, Brazil.

METHODS

Two franchises of chains with high expression in the sector were chosen for convenience in São Paulo, SP, Brazil. The study was an observational cross-sectional study in two American fast-food restaurants, one from each franchise, located in the eastern and central-southern regions of the municipality of São Paulo. The participating restaurants were selected because they have a similar food production system, with a focus on speed, standardization, and mechanization. Participation took place on a voluntary basis and was duly authorized by the respective managers. To ensure anonymity, the restaurants were identified as A and B. The data collection took place during a visit to each restaurant, with observation and application of a verification instrument carried out by four researchers, in November 2019.

The checklist proposed by RDC 275[8] was used as a verification tool. The checklist applied was adapted according to the objectives of the study, prioritizing the physical structure, handlers, spreadsheets of standardized operating procedures and a manual of good practices. The analyzed items were divided into 5 blocks: Building and installation (79 items); Equipment, furniture and utensils (21 items); Handlers (14 items); Food production and transportation (33 items); and Documentation (17 items), totaling 164 items, all assessed as non-compliant, compliant and not applicable, according to the legislation[8].

After applying the checklist, to check the percentage of conformity and non-conformity, both for the groups of items and for the general classification of the restaurants, the formulas[9] were used:

% = (total compliant items / total items – items not applicable) x 100

For the analysis of the results obtained from the formula, the percentages of conformities and non-conformities were considered in relation to the total of valid items, after discounting the non-applicable items (NA), when there was NA. This result was referred to as n valid.

The parameter for classifying restaurants was the one proposed by the legislation: group 1, when 75 to 100% conformities were obtained; group 2 for those who obtained 51 to 74% of conformities; and group 3, from 0 to 50% of conformities[8]. This criterion was used for the general classification of each restaurant and the respective groups of items under study.

RESULTS AND DISCUSSION

Table 1 shows the general classification of restaurants, considering all groups of items under study. In this classification, restaurant A obtained 58.6% of conformities and was classified in group 2. Restaurant B obtained 80.1% of conformities, being classified in group 1.

Table 1. Distribution of results and classification of restaurants, as a percentage of compliance with health legislation

	Restaurant A	Restaurant B
According	82 items 50,0%	113 items 68,9%
Not Conforming	58 items 35,4%	28 items 17,1%
Not applicable	24 items 14,6%	23 items 14,0%
Total	58,6%*	80,1%*

*Percentage of conformities in relation to the total of items analyzed, discounting the items that are not applicable.

Studies that analyzed the adequacy of good practices in restaurants of the same category or other types found different hygiene conditions in these establishments. Ricarte and Lauro, apud Santos[10], observed that all American fast-food

restaurants analyzed in Campina Grande/PB were classified in group 1. The same was not observed in the study by Melo *et al*[11], who verified the adequacy of good practices in Food and Nutrition Units-UAN in Porto Alegre/RS and concluded that the analyzed restaurants presented 32% to 47% of conformities in relation to the state specific legislation.

These percentages would be classified in group 3 according to the criterion proposed by the legislation used in the present study, denoting precarious hygiene conditions. Maciel *et al*[12], applying the same checklist used in the present study in UANs in Sergipe, classified the units under study in group 3. Silva *et al*[13], analyzing good handling practices also in UANs, identified one of the units under study in group 1 and the other in group 2, as observed in the present study. Akutsu *et al*[14], analyzing the adequacy of good practices in establishments that sold ready-to-eat foods in the Federal District, concluded that of the commercial restaurants under study, 23.3% were in group 1 and 66.7% in group 2. From the results of the present study and those obtained in the studies, it was possible to observe that the classification of establishments producing food for immediate consumption in group 1, with better hygienic-sanitary conditions, is not the rule in several regions of the country.

The distribution and classification of the percentages of conformities and non-conformities by block of items under study, in both restaurants, are shown in table 2.

Table 2. Distribution of results and classification of restaurants by block of items, in percentage of adequacy to the sanitary legislation.

Item block	Restaurant A		Restaurant B	
Building and installation	C*	NC**	C*	NC**
n valid = 74	41	33	58	14
Percentage	55,4%	44,6%	80,6%	19,4%
Classification	Group 2		Group 1	
Equipment, furniture and fixtures	C*	NC**	C	NC**
n valid = 21	16	5	21	0
Percentage	76,2%	23,8%	100%	0%
Classification	Group 1		Group 1	
Handlers	C*	NC**	C*	NC**
n valid = 14	11	3	11	3
Percentage	78,6%	21,4%	78,6%	21,4%
Classification	Group 1		Group 1	
Food production and transportation	C*	NC	C*	NC**
n valid = 22	14	8	16	6
Percentage	63,6%	36,4%	72,8%	27,2%
Classification	Group 2		Group 2	
Documentation	C*	NC**	C*	NC**
n valid = 14	0	9	7	5
Percentage	0%	100%	58,3%	41,7%
Classification	Group 3		Group 2	

C* = According   NC** = Not compliant

Regarding the block of items building and installation, the restaurant with the highest percentage of conformities was B (80.6%), classified in group 1. Restaurant A presented 55.4% of conformities and was classified in group 2. Among the most

relevant non-conformities in Restaurant A were the employees' locker room facilities, which did not have liquid soap or an antiseptic product, representing an important risk of contamination. Similar results were found by Silva *et al*[13], who also observed the absence of liquid soap and antiseptic product in the dressing room of the UANs handlers under study.

Bogard *et al*[15], when analyzing good preparation practices in restaurants that served hamburgers in eight American states, found that in 73% of the places there was no periodic hand washing in the preparation environment, which in 93% of the restaurants was frequent among handlers the practice of cleaning their hands in damp cloths or in an apron over the uniform during preparation, and that the absence of an appropriate place for washing and sanitizing hands in the workplace was common. The same authors emphasized the risk of contamination by *E. coli* in foods in whose preparation cross-contamination is facilitated. When investigating hygienic-sanitary conditions in *fast-food* cafeterias in Rio de Janeiro / RJ, Messias *et al*[16] found inadequate hand washing before and during food handling in 83% of the researched cafeterias. Thus, considering the relevant role of hygienic habits practiced by handlers in the sanitary safety of food, it is necessary both to implement standardized procedures for hand hygiene and the presence, in the preparation areas and in the dressing rooms and toilets of the handlers, in the sink, *dispenser* for liquid soap and for antiseptic product and means for safe drying of hands after washing. This integrates the determination of the health legislation in Brazil and the municipal legislation of São Paulo[7,17].

Also, in this block of items, in both restaurants the presence of flies was observed in the production areas during food preparation, despite the adoption of preventive measures against vectors and urban pests. Genta *et al*[18], researching the evaluation of good practices in self-service restaurants in Maringá/PR, evaluated six restaurants that did not present any measure of protection against vectors and pests. Messias *et al*[16] concluded that although the control of vectors and urban pests was considered effective in 83% of the analyzed snack bars, the presence of insects, such as cockroaches, was also observed in food handling in two establishments of a large fast-food chain. food. The same authors cite the study by Yamamoto *et al*[19], in which the authors found that although control of vectors and pests was adequate in relation to health legislation, the *fast-food* establishments surveyed proved to be ineffective about physical protection and barriers against insects and rodents.

Regarding the block of items equipment, furniture, and utensils, both restaurants were classified in group 1. This classification is not a rule in other similar studies in the country. Melo *et al*[11] classified all the UANs in their study in group 3, as well as Maciel *et al*[12]. Akutsu *et al*[14] classified 50% of the commercial restaurants under study in group 2 and the others in group 3. Messias *et al*[16] observed that 50% of the snack bars under study did not have adequate equipment hygiene.

Restaurant A presented 23.8% of non-conformities, including the absence of periodic cleaning records. Vasques and Madrona[20], applying a *checklist* to evaluate the implementation of good practices in a UAN, also noted the absence of these records.

In the block of items Manipulators, both restaurants were classified in group 1. The inadequacy of this block can also be seen in studies by Akutsu *et al*[14], where 83.34% of the commercial restaurants evaluated were classified in group 3. The same classification was observed by Melo *et al*[11], in UANs in Porto Alegre/RS, verifying that they also did not present records of periodic exams as in the results of the present study. It is important to highlight that to guarantee the quality of food production, employees must perform admission and periodic medical examinations, under the responsibility of the employer[13].

Regarding the block of items Production and food transport, both restaurants were classified in group 2 and presented non-conformities in similar topics of the present study, such as the inadequate storage of products, which were not far from the wall, as required by the sanitary legislation. Several authors have observed these non-conformities in their studies. Messias *et al*[16] observed that 75% of the snack bars had food stored directly on the floor, against the walls and under inadequate ventilation. Food in direct contact with walls is more exposed to access by pests and to possible humidity in the environment, which can affect the sanitary and nutritional quality of the environment before the preparation operations.

Another non-conformity in this block of items was the fact that the employees accessed the changing rooms, on arrival at work, through the preparation and pre-preparation areas, favoring contamination in the processes in progress, since at this time they used personal clothing and did not carry out hand washing before access. Vasques and Madrona[20] observed the same failure in direct access to toilets, as well as Akutsu *et al*[14]. This practice, relatively common in establishments that produce food for immediate consumption, facilitates cross-contamination and compromises the sanitary quality of the food produced.

In the block of items Documentation, restaurant A was classified in group 3 and B in group 2. Restaurant A presented non-conformities related to the absence of the Good Practices Manual (MBP) and registration of the Standardized Operating Procedures (POP) required by the health legislation[7]. Several authors have also noted this lack of adequacy in their work. *Akutsu et al*[14] verified the absence of both documents in all units analyzed. *Messias et al*[16] observed that 75% of the snack bars under study did not present these mandatory documents. Maciel *et al*[12] classified the units under study in group 3, and the absence of these documents was also observed. Melo et al11 found that although all the restaurants under study had MBP, none had POP. Silva *et al*[13] identified one unit with both documents and the other without one.

According to health legislation[7], the MBP is a document that describes the operations performed by the establishment, and the SOP is the record of the procedures in an objective manner that establishes sequential instructions for carrying out routine and specific operations in the handling of food. According to the same legislation, food services must have MBP and POP. These documents must be accessible to employees involved in food handling and available to the health authority when requested[7]. Both documents, MBP and POP, establish the foundation in the process of standardization and execution of tasks of the unit, guaranteeing the hygienic-sanitary aspects in the manufacture and handling, and the consumer safety of the food sold by the establishments[13]. Thus, restaurant A in the present study was at odds with the legislation for not having MBP and POP.

As limitations of the study, mention is made of the number of restaurants analyzed and the limited published literature on good practices in *fast-food* restaurants. The restricted literature did not allow the entire discussion to be directed only to this specific type of food production. Given the growing participation of fast-food restaurants in food outside the Brazilian home, and considering the results obtained, it is suggested that further studies on the same theme be conducted in these types of establishments.

CONCLUSION

The American fast-food restaurants analyzed in the study had a general classification in group 2 for restaurant A, and group 1 for B. In relation to the classification relative to the analyzed item blocks, restaurant A presented a classification

in group 1 only in list three blocks of items analyzed. Both restaurants had a high percentage of non-conformities in the Documentation item block.

Although the general classification presents percentages of conformities more frequently, it was observed the presence of non-conformities in items relevant to the safety of food sold in places, such as the presence and / or implementation of documents of good food production practices.

From the results, there was a need for improvements in the good practices of these establishments, which can contribute so that restaurants can adapt to the current legislation and increase the percentage of conformities in food production, guaranteeing product quality and safety consumer health.

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