FOOD FOR COLLECTIVES

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Evaluation of good practices in restaurants in Joinville, Santa Catarina, Brazil

Avaliação das boas práticas em restaurantes do município de Joinville, Santa Catarina

Abstract

Introduction: The increase in eating out of home is directly related to the expansion of food service. Because of this expansion, studies are needed to evaluate hygienic-sanitary conditions and good practices in food services. ***Objective***: Evaluate good food handling practices in restaurants in Joinville-SC, Brazil. ***Method***: Data collection performed through the application of good practice checklist for food service, part of the Normative Resolution No. 3 of the Directorate of Sanitary Surveillance of Santa Catarina State, Brazil, in accordance with RDC No. 216 / 2004 of the Brazilian Health Surveillance Agency. ***Results***: Checklist was applied to 30 restaurants, only one was classified as fully satisfactory, with an adequacy index of 81.8%; two were classified as satisfactory, with an average of 53.0% adequacy; and the remaining 27 restaurants obtained an adequacy index below 50.0%, being classified as unsatisfactory. ***Conclusion***: Considering the results, it is necessary to adopt operational and corrective measures to control the critical points. These must be carried out and reinforced by nutritionists who work in restaurants, aiming to reduce non-conformities and, consequently, the risks of foodborne diseases.

Keywords: Food services. Health Surveillance. Food safety. Quality control

Resumo

Introdução: O aumento da alimentação fora de casa tem relação direta com a expansão dos serviços de alimentação. Por conta dessa expansão, tornam-se necessários estudos que avaliem as condições higiênico-sanitárias e de boas práticas nos estabelecimentos. ***Objetivo***: Avaliar as boas práticas de manipulação de alimentos em restaurantes de Joinville-SC. ***Método***: Coleta de dados realizada por meio da aplicação da lista de verificação de boas práticas para serviços de alimentação (*checklist*), integrante da Resolução Normativa nº 3 da Diretoria de Vigilância Sanitária do Estado de Santa Catarina, em conformidade com a RDC nº 216/2004 da Agência Nacional de Vigilância Sanitária. ***Resultados***: Aplicou-se a *checklist* em 30 restaurantes, sendo que apenas um foi classificado como plenamente satisfatório, com índice de adequação de 81,8%; dois foram classificados como satisfatórios, com média de 53,0% de conformidades; e os demais 27 estabelecimentos obtiveram índice de adequação inferior a 50,0%, sendo classificados como insatisfatórios. ***Conclusão***: Considerando os resultados, se faz necessário adotar medidas operacionais e corretivas para controle dos pontos críticos. Estas devem ser realizadas e reforçadas pelos nutricionistas que atuam em restaurantes, com o objetivo de reduzir as não conformidades e, consequentemente, os riscos de doenças transmitidas por alimentos.

Palavras-chave: Serviços de alimentação. Vigilância Sanitária. Segurança dos alimentos. Controle de qualidade.

INTRODUCTION

Brazil has been experiencing the increased need for people to eat food away from home, as pointed out by the 2017/2018 Brazilian Household Budget Survey (POF in Portuguese) 2017/2018. Of monthly expenses with food for Brazilian families, 33.4% refer to eating out, representing almost a third of food expenses in Brazil.[1] A study by Bezerra et al.[2] indicated that, in Brazil, consumption of food away from home was reported by 40% of respondents.

The need to eat out has contributed to the expansion of food service sector. It is estimated that in Brazil, approximately 60 million meals are served daily by food services,[1] of which about 23% are served in restaurants.[3]

Food services, defined as places that handle, prepare, store and provide meals,[4] can be divided into two segments: collective food and commercial food – difference given by the consumer's choice of autonomy. In collective food, consumers are captive and often pay a subsidized amount for the meal. Industrial restaurants are considered a system of collective production, regardless of their origin – for example, industry and hospitals.[5] Institutional restaurants are those in hospitals, daycare centers, schools, universities, long-term institutions for elderly and orphanages.[6]

To reduce the risk of foodborne diseases and foodborne outbreaks, food services must follow Brazilian health legislation, especially Resolution RDC No. 216/2004, of the Brazilian Health Surveillance Agency (ANVISA in Portuguese), on Good Practices for Food Services,[4] implementing good practices in the company.[4] Thus, restaurants should provide meals that do not compromise consumer's health and that meet the standards of hygienic-sanitary quality established by ANVISA and inspected by the Health Surveillance of Brazilian municipalities.[6]

ANVISA Resolution RDC nº 216/2004 presents parameters of hygienic-sanitary quality with respect to good practices, and one of the documents required for food services is the Manual of Good Practices.[4] This document describes operations carried out by the food services from hygienic-sanitary point of view, and its presence, besides being mandatory, is fundamental for safe food production.[4]

Even with documents that guide hygienic-sanitary conditions, it is necessary to make consumers aware of possible contamination.[7] Research carried out by Esperança and Marchioni[8] pointed out that 85.0% of the 22 commercial restaurants surveyed in the municipality of São Paulo did not have Manual of Good Practices.

Studies that have also assessed hygienic-sanitary quality and good practices in food services have shown an excess of non-conforming items related to Resolution RDC nº 216/2004, mainly with regard to facilities, buildings and equipment, as well as hygiene and training of food handlers.[9-12] Thus, the assessment of hygienic-sanitary conditions and the implementation of good practices are important measures to analyze whether food services are guaranteeing quality and safety of food produced.[12]

Therefore, the present study aims to evaluate good food handling practices in restaurants in Joinville (Santa Catarina State, Brazil).

METHODS

Commercial, industrial and institutional restaurants in the municipality of Joinville (Santa Catarina State) were selected for convenience, which, after personal contact and presentation of the project, agreed to participate in this research. Thirty restaurants were considered the saturation point of data collection, average of restaurants found in other studies, such as Esperança and Marchioni's. [8]

Restaurant managers signed the Term of Consent for Research, there was no interview or any other contact with the managers or with those who worked in the restaurants, as the data collection was observational.

Data collection was carried out through the application of good practice checklist for food service, part of the Normative Resolution No. 3 of the Directorate of Sanitary Surveillance of Santa Catarina State, Brazil,[13] in accordance with RDC No. 216 / 2004.[4] It is considered that RDC nº 275/2002[14] is directed to producing / industrializing food companies, and that RDC nº 216/2004[4] is the most suitable for checking good practices in food services, so the choice of this instrument.

The checklist includes 93 items, divided into 10 blocks: 1 - Building and facilities (including water supply and vector and urban pest control) (n = 33); 2 - Equipment, furniture and utensils (n = 3); 3 - Cleaning of facilities, equipment, furniture and utensils (n = 4); 4 - Food handlers (n = 7); 5 - Raw materials (n = 2); 6 - Food preparation (n = 18); 7 – Food service that transports prepared food (n = 5); 8 - Exposure to consumption of prepared food (n = 10); 9 - Food sample (n = 1); 10 - Documentation and registration (n = 10).

Items were evaluated in "Conforming", "Non-Conforming" or "Not applicable", assigning at the end of checklist a score referring to the adequacy level (conformities) in percentage according to the total number of items evaluated. The classification of this percentage occurred according to that used by ANVISA, established in RDC nº 275/2002,[14] in which evaluated places that present 76 to 100% of items in conformity are considered as Group I (Fully satisfactory); 51 to 75% of items in conformity, such as Group II (Satisfactory); and with less than 50% of items in conformity, such as Group III (Unsatisfactory).

Data collection was conducted between the months of August and October 2018. The checklist was applied during the visit to each restaurant, through direct observation, with no prior scheduling being carried out, aiming to avoid changes in the local work routine.

Data were analyzed according to descriptive statistics, by Microsoft Excel software, being presented in absolute and percentage frequency, expressed in graphs and table.

RESULTS

Of the 45 invited restaurants, 30 accepted to participate in the research, whose characterization is shown in table 1.

Table 1. Characterization of the restaurants evaluated in Joinville (Santa Catarina State, Brazil), 2019 (n=30).

Variable	Restaurants evaluated (n= 30)
Type of restaurant	
Commercial restaurants	19 (63.3%)
Institutional restaurants	7 (23.3%)
Industrial restaurants	4 (13.4%)

Table 1. Characterization of the restaurants evaluated in Joinville (Santa Catarina State, Brazil), 2019 (n=30).

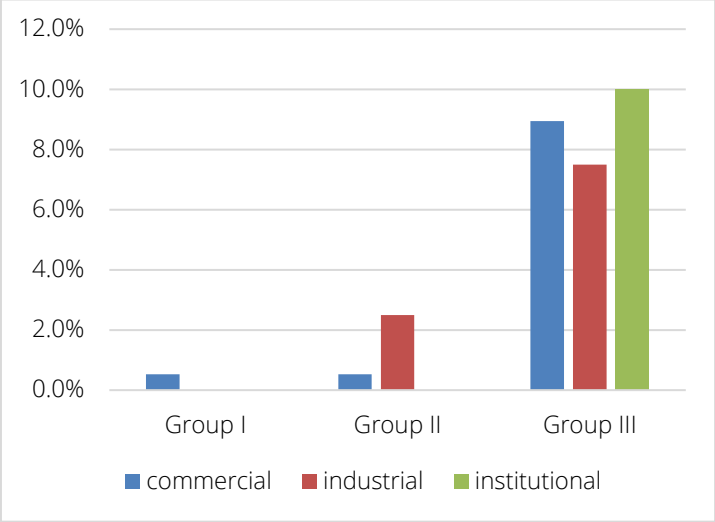
Variable	Restaurants evaluated (n= 30)
Meals served by type of restaurant / day	
Commercial restaurants (n=19)	
40-100	12 (63.2%)
101-200	4 (21.0%)
201-300	2 (10.5%)
301-400	1 (5.3%)
Above 400	
Institutional restaurants (n=7)	
101-200	1 (14.3%)
201-300	2 (28.6%)
301-400	1(14.3%)
Above 400	3 (42.9%)
Industrial restaurants (n=4)	
101-200	0 (0%)
201-300	0 (0%)
301-400	1 (25.0%)
Above 400	3 (75.0%)
Number of employees	
Commercial restaurants (n=19)	
2-10	13 (68.4%)
11-20	4 (21.1%)
21-30	2 (10.5%)
31 – 50	0 (0%)
Above 50	0 (0%)
Intitutional restaurants (n=7)	
2-10	2 (28.6%)
11-20	1 (14.3%)
21-30	3 (42.9%)
31 – 50	1 (14.3%)
Above 50	0 (0%)
Industrial restaurants (n=4)	1 (25.0%)
2-10	0 (0%)
11-20	0 (0%)
21-30	1 (25.0%)
31 – 50	2 (50.0%)
Above 50	
Presence of nutritionist	
Commercial restaurants (n=19)	
No	10 (52.6%)
Yes	9 (47.4%)
Institutional restaurants (n=7)	
No	0 (0%)
Yes	7 (100%)
Industrial restaurants (n=4)	
No	0 (0%)
Yes	4 (100%)

Among the 30 restaurants evaluated, 19 were commercial restaurants (63.3%), seven institutional restaurants (located in schools and long-term institutions for elderly) - 23.3% and four industrial restaurants (13.4%).

The presence of the nutritionist was registered in 66.7% (n=20) of the restaurants, and the other places studied – 33.3% (n=10), all commercial restaurants did not count on this professional as technical manager or as food consultant.

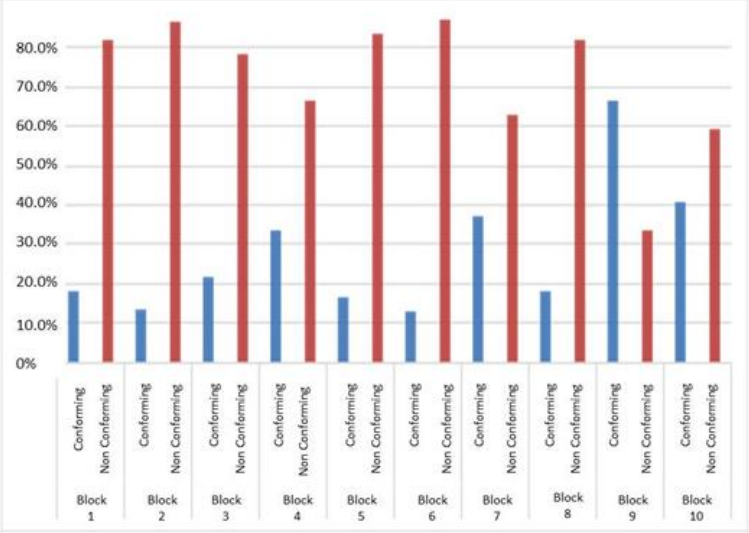
Of the total restaurants evaluated, 90.0% (n=27) were classified according to the degree of hygienic-sanitary adequacy in group III, that is, unsatisfactory, with 100% (n=7) of institutional restaurants, 89.4% (n=17) from commercial restaurants and 75.0% (n=3) from industrial restaurants, as shown in figure 1. Only one (5.3%) commercial restaurant was classified in group I (Fully satisfactory); group II (Satisfactory) included a commercial restaurant (5.3%) and an industrial restaurant (25.0%).

Figure 1. Classification of the studied restaurants, according to the degree of hygienic-sanitary adequacy



Regarding the conformity of studied restaurants, by checklist block, only block 9 - Food sample, registered the highest conformity rate (66.7%), while the others showed a percentage of conformity below 45.0% (figure 2).

Figure 2. General index of conformities and non-conformities of restaurants by checklist block.



As for the existence of manual of good practices, it was present in 31.6% (n = 6) of commercial restaurants, 75.0% (n = 3) of industrial restaurants and in 57.1% (n = 4) of institutional restaurants.

The overall percentage of adequacy of evaluated restaurants was 21.6%, and the places that had nutritionist in their technical staff had a higher rate of inadequacies (84.7%), compared to places without nutritionist (figure 3).

Figure 3. Index of conformities and non-conformities of restaurants, general and with or without the presence of the nutritionist.

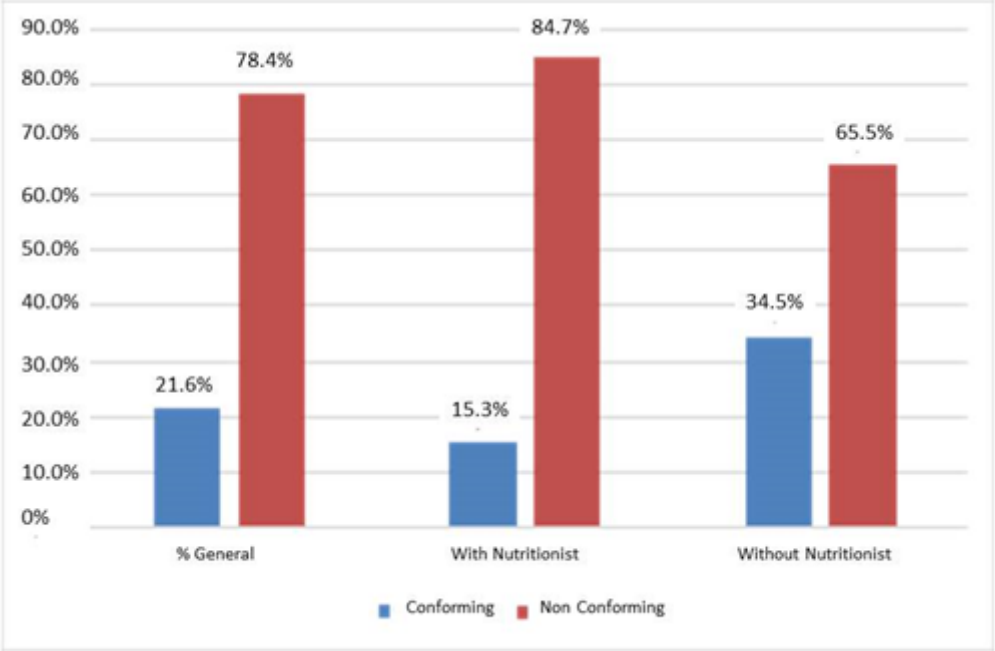
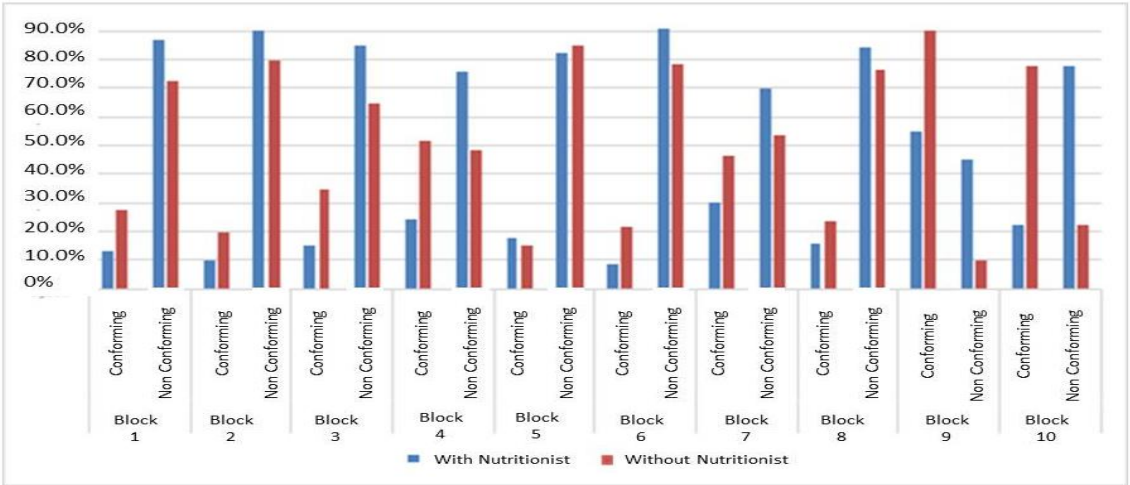


Figure 4 shows the conformity indexes of restaurants by checklist blocks according to the presence of nutritionist. It can be observed that only in block 5 - Raw materials, a higher rate of conformity was registered in restaurants that had nutritionist, compared to others that did not have this professional. However, this is one of the items that are most related to the performance of nutritionist; other items, such as building, for example, have no direct action by this professional.

Figure 4. Index of conformities and non-conformities of restaurants by checklist block according to the presence of nutritionist.



DISCUSSION

From the checklist application in the studied restaurants, the low adequacy index was observed according to Resolution RDC nº 216/2004[4] of ANVISA, since the general percentage of adequacy was only 21.6%, and 90.0% (n=27) of restaurants had an adequacy index below 50.0%, being classified in group III (Unsatisfactory). Adequate results are found are much lower than those found in studies conducted in other municipalities in southern Brazil.

Research that evaluated building conditions of commercial restaurants (all you can eat buffet) in the municipality of Chapecó (Santa Catarina State) registered 64.2% of restaurant adequacy, with 60.0% being in the classification of group II (Satisfactory).[15]

Likewise, a study that analyzed and diagnosed the hygienic-sanitary conditions of 13 restaurants in the municipality of Encantado (Rio Grande do Sul State) through checklist application, also based on Resolution RDC nº 216/2004, pointed out that restaraunts had an average of 67.4% adequacy according to this resolution. Additionally, it was observed that most of the nonconformities were due to building and documentation problems.[12] In the present study, in addition to the low overall percentage of adequacy found, a greater volume of non-conformities was found in block 2 (equipment, furniture and utensils), as well as in block 6 (food preparation).

In addition to these studies, research conducted by Almeida et al.[16] with 41 food services located in a multithematic park in the municipality of Penha (Santa Catarina State) indicated that the majority of food services studied, especially restaurants / snack bars, did not reach the percentage of hygienic-sanitary conformities after applying a checklist based on RDC Resolution No. 216/2004.

Among the blocks evaluated by the checklist, the ones that have the greatest impact on food safety and quality are blocks 2, 3, 4, 5 and 6. Problems Non-conformities related to block 2 - Equipment, furniture and utensils are the most difficult solution, as its adequacy requires greater financial support in most situations. Items related to block 3 - Cleaning of facilities, equipment, furniture and utensils also have an influence on issues of food safety, especially regarding the risk of foodborne diseases. Items covered by these blocks must be taken into account, as their problems are linked to cross-contamination of food. [17]

It is also worth mentioning the high percentage of restaurants that do not have the Manual of Good Practices, given that, according to Resolution RDC nº 216/2004 of ANVISA, food services must present both Manual of Good Practices and Standardized Operating Procedures (POP in Portuguese). [4]

A study carried out by Silva et al. [18] to verify good practices in two food services pointed out that, among the non-conformities found in the two food services studied, there were items related to building, furniture and utensils, as well as food handlers, storage and transport of prepared food and exposure to consumption of prepared food. However, the authors found a higher degree of conformity, 71.81% in one of them, and 76.36% in the other.

Nevertheless, it is not enough to have the Manual of Good Practice; it must be updated, implemented and used in training for food handlers. Belphman and Szczerepa[19] carried out research that evaluated Manuals of Good Practices and Standardized Operating Procedures in different food services in the municipality of Ponta Grossa (Paraná State), verifying that although all food services present such documents, they did not contain adequate structure and wording, as required current health legislation, in addition to being outdated and not using simple and understandable language.

Also noteworthy is the low conformity rate of restaurants that had a nutritionist on their staff (84.7%), including the low conformity rate (22.0%) in block 10 - Documentation and registration, considering that the

Brazilian Council of Nutritionists (CFN in Portuguese) assigns to nutritionist the elaboration and implementation of the Manual of Good Practices and Standardized Operating Procedures.[14]

Regarding the presence of nutritionists in the restaurants studied, it should be noted that, although the presence of nutritionist as a technical manager in commercial restaurants is not mandatory, many of these had nutritionist in the role of food consultant, which may have contributed, for example, to the fully satisfactory and satisfactory adequacy of two commercial restaurants studied.

The presence of nutritionist, especially in the role of technical manager, is very important for the supervision of entire food production process, in addition to the implementation and maintenance of good food handling practices, in order to minimize risks of contamination and train food handlers, thus guaranteeing the safe food production.[16,18]

It is important to note that implementation of good practices in food services is not optional, but a requirement of the Brazilian legislation, and must be complied with by the food service from the moment it starts operating. Resolution RDC nº 216/2004 determines that the adequacy to good practices also depends on the elaboration of the Manual of Good Practices and Standardized Operating Procedures, in addition to conducting training for food handlers.[4]

Also in accordance with Resolution No. 600/2018[20] of the Brazilian Council of Nutritionists, nutritionists must periodically train and update employees who work in food services. Thus, training of food handlers must be carried out periodically, exercising significant importance for the control of food contamination risk and prevention of foodborne diseases. The awareness of handlers about good food handling practices has been identified as an economical and efficient means of correcting and overcoming inadequacies. Properly trained food handlers, in an environment that provides operational behavior in a systematic and orderly manner, have greater discernment and independence in their operational self-management. In addition, food handlers play a fundamental role in ensuring food safety.[21]

CONCLUSION

Considering the models for adequacy conduct, it is necessary to take operational and corrective measures to control critical points for the restaurants studied, regarding different aspects related to good food handling practices, and such actions must be carried out and reinforced when presence of nutritionist in food services. And yet, once the basic requirements demanded by the legislation are reached, with regard to hygienic-sanitary quality, it is recommended to use efficient instruments to control and maintain these practices.

Another point to highlight is that the presence of nutritionists in restaurants does not seem to have contributed to a greater adequacy in the items evaluated, as they were in restaurants with the highest rates of non-adequacy. In this sense, there is a need for greater awareness of professionals regarding their role in food services, as well as greater supervision through the nutritionists council.

Finally, it is also important to have a more effective inspection of the municipal health surveillance of Joinville in food services, as well as the greater awareness and commitment of restaurant managers regarding the importance of providing meals that do not leave consumer's health at risk, in order to meet legal requirements and, consequently, reduce the risk of foodborne diseases.

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Contributors

Oliveira RC and Silveira RA were responsible for the conception and design of the study, analysis and interpretation of the data, working in all stages from the conception of the study to the revision of the final version of the manuscript. Mafra R worked on data analysis and interpretation, review and approval of the final version of the manuscript.

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