International Journal of New Technology and Research (IJNTR)
ISSN:2454-4116, Volume-2, Issue-3, March 2016 Pages 40-44

Application of Ordinance Nº. 78/2009 and Employee Training in Food and Beverage Service To Hotels

Jacqueline Valle de Bairros, Lucia Rota Borges, Elizabete Helbig

***Abstract*— The study aimed to conduct a diagnosis of the hygienic-sanitary conditions of food and beverage sector of hotels in Pelotas/RS and interventions based on the concepts of Best Practices. During the period of September 2012 to January 2013, a diagnostic of hygienic sanitary conditions through the application of the Ordinance No. 78/2009 check list and an intervention through a training course for food handlers was conducted. It was calculated the percentage of adequacy of hotels, as a very good level (Group 1) above 90%, from 75% to 90% as a good level (Group 2), acceptable level between 50% and 75% (Group 3) and below 50% as unsatisfactory level (Group 4). The main results showed an increase of the percentage of the items covered after the intervention in two of the hotels, demonstrating that the training may have contributed to the improvement of hygienic sanitary conditions in them. The improvement of some items was also verified when analyzed in individual blocks from the check list after the training in each hotel. Nevertheless, it was also noticed that there still are several inadequacies, demonstrating the need for greater attention from those responsible for food and beverage services in hotels.**

***Index Terms*— Best Practices check list, hygienic-sanitary, food handlers.**

I. INTRODUCTION

The hotel market has been expanding every year, offering a variety of services, including food and beverages, which is highly important because of the need to produce a nutritional and sound, balanced diet in terms of quality, in order to provide satisfaction to the customers [1]. To this end, it is necessary the implementation of Good Manufacturing Practices (GMP), that are supported by the Brazilian legislation for all industries and food establishments [2].

Based on that, the resolution of the Collegiate Board, RDC nº. 216, of September 15, 2004 [3], in order to promote the improvement of sanitary conditions of food service, provided the Technical Regulation for Best Practice in the food service and the Department of Health of Rio Grande do Sul published in January 30th, 2009 the Ordinance nº. 78 approving the checklist in Best Practices for food service, in addition to standards for training courses on Best Practices for food service [4].

Jacqueline Valle de Bairros, Nutritionist

Lucia Rota Borges, Associate Professor Level I of the Nutrition Department of Nutrition School of the Federal University of Pelotas.

Elizabete Helbig, Adjunct Professor of the Federal University of Pelotas

According to [5], the checklist of Best Practices can be considered a useful tool for the control of operational procedures, because it helps in the quality control of food production, ensuring the quality of sanitary hygienic from the meal served.

Due to the expansion of the hotel segment and the growth of tourism across the country, ensuring the quality of food in

this sector becomes a factor of great importance and is strongly associated with the quality hosting concept, being essential to provide safe food, in accordance with the current legislation. Pelotas Economic Development and Tourism Department [6] features a variety of registered hotels, however, they are unaware of relevant information about sanitary-hygienic conditions related to food and beverages (A&B) in these establishments.

So, this study aimed to conduct a diagnosis of the hygienic-sanitary conditions of the food and beverage sector of hotels in Pelotas Pelotas/RS, as well as making interventions based on the Best Practices concepts.

II. MATERIAL AND METHODS

A. Preparation

An exploratory, observational and descriptive study, with a quantitative approach was carried out from September 2012 to January 2013, focusing on the hygienic conditions from Pelotas/RS A&B hotels. All hotels (n = 13) registered on the Pelotas Economic Development and Tourism Department website were invited to take part in the study.

The visits took place on random days during the preparation of the breakfast, because this is the meal which is offered in all establishments.

The person responsible for each hotel answered a questionnaire adapted from the Ordinance nº. 78/2009 with the purpose of outlining the characteristics of these establishments [4].

The survey was conducted in two stages. First, a Diagnostics of Hygienic-Sanitary conditions was conducted by applying the checklist on Best Practices for food service (check list) of Ordinance nº. 78/2009 [4], In addition, an interview based on a structured questionnaire, with close-ended questions, was made with food handlers in order to identify the socioeconomic profile of these professionals.

After the first stage, all interventions in the hotels were through a training course for food handlers on the importance of adopting Best Practices, based on RDC 216/2004 [3].

The second stage was held after the improvements were implemented and the application of the checklist (Ordinance

nº. 78/2009) was repeated with the purpose of evaluating the effectiveness of the conducted training for these establishments food handlers.

This study was approved by the Ethics Committee of Universidade Federal de Pelotas (UFPel) Medical School, under Protocol nº. 67/12.

B. Hygienic-sanitary conditions, diagnosis of the A&B sectors

Based on the application of the checklist in Best Practices for food service (Ordinance nº. 78/2009) it was calculated the percentage of adequacy of establishments, following the classification proposed by [5]; those in which the items that had above 90% of attendance were classified as very good level (Group 1), from 75% to 90% as good level (Group 2) acceptable level, between 50% and 75% (Group 3) and establishments below 50% of the items were classified as unsatisfactory level (Group 4).

C. Statistical Analysis

Statistical analysis was performed through Statistica 7.0 version program. The comparison between the groups was performed by means of analysis of variance (ANOVA) one-way, followed by Tukey test and Fisher, when necessary. The test t-student enabled the comparison of hotels before and after the training. Level $p < 0.05$ was considered as statistical significance.

III. Results

Among the 13 hotels registered 30.76% agreed to participate in the study, totalizing a sample of four establishments, being identified as hotel 1, 2, 3 and 4. All hotels evaluated are located downtown.

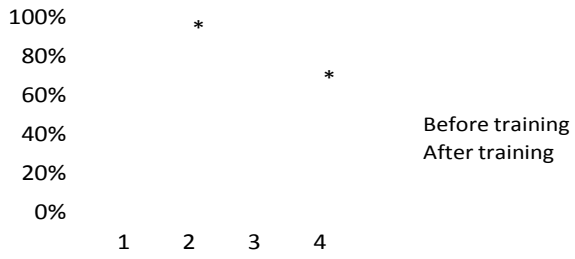
Table 1 presents percentage and general classification and adequacy of sanitary hygienic conditions before and after the training of the A&B sector of hotels Pelotas/RS, 2013.

Table 2 presents the individual evaluation of the items in the checklist, identifying the percentage of items considered appropriate in the A&B sector of the evaluated hotels.

Figure 1 presents the four observed hotels percentage of general evaluation of hygienic-sanitation conditions, from the application of Best Practices Checklist for food service (Ordinance nº. 78/2009) before and after training.

An variance analysis was performed followed by the Fisher test in order to detect variations in scores of items from Best Practices Checklist before and after the training of each hotel.

The results have demonstrated that the intervention expressed promoted significant differences in relation to the attendance of the items related to Best Practices ($p > 0.05$).



*Significant difference after training by the Fisher precise test: $p = 0.03$

Figure 1. Overall percentage of hygienic-sanitation adequacy before and after training in Pelotas A&B Hotels, according to Best Practices checklist for food service, 2013.

IV. Discussion

[7] states that those responsible for food handling in food service should receive adequate training to maintain the quality of the product, starting with the awareness about the Best Practices. In Rio Grande do Sul, according to the rules established by Ordinance nº. 78/2009 the handlers must perform training workshop on Best Practices in order to establish these procedures in food service.

It has been observed that before training there was no significant difference between the hotels. However, after it, Hotel 2 and 4 differed significantly ($p = 0.03$). This difference scored Hotel 4 negatively; so that, after the intervention there was a reduction in the percentage of adequacy of hygienic-sanitation conditions. It is possible that it has occurred as a result of offering their food handler only one training, which has been insufficient to ensure the improvement of its service and reinsures the need for improving these professionals continuously. [8] reported that after a lecture in three schools snack bars of Porto Velho (RO), this sort of the intervention was not effective enough to cause adjustments in the hygiene practices in them.

In Figure 1, an variance analysis was performed followed by the Fisher test in order to detect variations in scores of items from Best Practices Checklist before and after the training of each hotel.

Table 1. Percentage and general classification and adequacy of sanitary hygienic conditions before and after the training of the A&B sector of hotels Pelotas/RS, after application of the Best Practices Checklist for food service, 2013.

Hotel	Classification		% Adequacy		
	Before Training	After Training	Before Training % SD**	After Training % SD	p-value* (p>0,05)
1	Acceptable	Good	74,20 ± 26,04 [a***]	75,53 ± 23,54 [a]	0,756
2	Good	Good	78,54 ± 20,45 [a]	82,10 ± 17,57 [a]	0,640
3	Good	Good	78,80 ± 19,57 [a]	75,06 ± 21,18 [a]	0,807
4	Acceptable	Acceptable	59,31 ± 35,58 [a]	56,16 ± 40,49 [a]	0,690

*p-value: Test t-impaired

**SD: Standard Deviation

*** Significant difference through t-test

Good: between 75 - 90% of items checked. Acceptable: between 50 - 75% of items checked

Table 2. Percentage of adequacy of the A&B sector in Pelotas hotels, before and after the training in Best Practices, by blocks assessed, 2013.

Check List Blocks	Total Items	HOTEL 1 % Adequacy before-after training		HOTEL 2 % Adequacy before-after training		HOTEL 3 % Adequacy before-after training		HOTEL 4 % Adequacy before-after training	
1. Building	34	91,1	91,1	79,4	82,3	79,4	85,3	78,8	66,6
2. Cleaning	17	50,0	81,2	56,2	75,0	56,2	68,7	68,7	62,5
3. Plague Control	7	100	100	100	100	71,4	71,4	85,7	100
4. Water support	9	100	100	100	100	100	100	100	100
5.Waste management	3	100	66,6	100	100	100	33,3	66,6	0,0
6. Food handlers	15	73,3	73,3	73,3	73,3	100	100	26,6	46,6
7. Raw material	12	100	100	100	100	100	83,3	100	100
8. Food Preparing	26	68,0	80,7	60,0	80,7	68	80,7	63,6	86,6
10. Food Preparing Exposition	9	62,5	66,6	66,6	77,7	77,7	88,8	62,5	55,5
11. Documentation and register	7	42,8	42,8	85,7	42,8	71,4	42,8	0,0	0,0
12. Responsibility	7	28,5	28,5	42,8	71,4	42,8	71,4	0,0	0,0

The block 9, refers to the transport and storage of prepared food, this does not apply to the reality of the hotels, and was removed from the table. Very good: above 90%, Good: between 75 to 90%, Acceptable: between 50 to 75%, Unsatisfactory: below

The results have demonstrated that the intervention expressed promoted significant differences in relation to the attendance of the items related to Best Practices ($p > 0.05$).

When comparing the results presented on the hotels adequacy levels after the implementation of the check list (Table 1), it was concluded that evaluating individually each hotel, there was no significant difference among them after the training on Best Practices, even observing an adequacy percentage reduction of items in some of them.

It can be seen in Table 1 that before the training, two hotels (50%) presented a percentage of adequacy exceeding 75% (good level), while the other half of the sample was 50% to 75% (acceptable level). [9] study analyzed the food and nutrition services in a hotel in the town of Timóteo/MG, and verified that it has an 85% (good) level of hygienic and sanitation conditions.

Similar to the study conducted by [10], in which 30 hotels were inspected through the check list applied to A&B services, it was found that none were classified as Group 1 (very good), which was also observed in this research.

It has been noticed that after the intervention, there was an increase in the percentage of items served at the hotel 1, which took it from acceptable to good level, demonstrating that the training may have contributed to the improvement of hygienic-sanitation conditions.

Considering the assessment of individual items (Table 2) it was observed that the block Waste Management worsened the hygienic-sanitation conditions evaluated after training in Hotels 1, 3 and 4. The percentages of adequacy in Hotels 1 and 3, which had 100% of adequacy before intervention decreased to 66.6% and 33.3% respectively. Hotel 4, also presented unsatisfactory results for this segment, however, before and after the intervention.

It was observed that in the 4 hotels the waste collectors could not be easily cleaning and transported, their lids triggered could not be opened without manual contact with the residues, many times they were placed in inappropriate locations, suggesting the lack of concern and initiative related to environmental issues and waste management on the part of the local hotel segment, being considered a critical point for occurrence of cross-contamination [11].

In item registration and documentation, all (100%) of the hotels were classified as unsatisfactory (hotel 1, 2 and 3 showed 42,8%; and hotel 4 0% after training) for this block.

According to Ordinance nº. 78/2009, an item quoted in it recommends that food service must have a Best Practice Manual available to employees [4]. However, it was found that 100% of the hotels didn't have the Best Practices Manual available. A similar result was found by [12] 85.7% of food service hotels located in Paraná did not have the Best Practice Manual available.

The absence of the Best Practice Manual in the A&B services among the evaluated hotels suggests that the difficulty to implement this tool can be in part because there are no continuous courses that enable the responsible technicians in the industry, in the preparation of this material and also because there are problems in the supervision of competent organs.

According to RDC nº. 216/2004 regulating the Best Practices, food-producing establishments must have this Handbook for applying the standards in food service, in order to ensure a safe and high quality health food [3].

About Food Handlers block, hotel 4 was the only one classified as unsatisfactory both before and after the training, showing percentages of less than 50% availability of the items. Among the items that must be fulfilled by establishments, referring to this block are: uniform in good condition and clean, use of protective cap for hair, personal effects stored in lockers outside the production area, trained skilled handlers. It was observed that food handlers in this establishment had personal adornments and absence of uniform compatible with the activity.

In the study [13], the authors found that on a first visit that diners' handlers were using cap for hair protection. However, in a second evaluation, 100% of handlers were not wearing it. The correct use of uniforms is crucial, since it facilitates the identification of stains and food waste by calling attention to the need to exchange them, maintaining personal and the working environment hygiene [14].

These items are addressed in training courses relating to the hygiene of handlers being required by current legislation for those who work in food service. This fact suggests the need for the presence of a skilled professional to conduct a periodic monitoring on employee awareness and fulfilment of the basic requirements of hygiene.

On the block regarding responsibility, one of the rated requirements is the presence of skilled professional who had taken a training course on Best Practices for food service, as established by Ordinance nº. 78/2009 [4], In the present study, the hotel 4 did not have the presence of a responsible industry-enabled A&B. This fact highlights the lack of attention by the hotel manager and by the government competent department to enforce what has been established by the legislation.

[7] when evaluating the procedures of Best Practices in A&B hotels, found that three hotels, reported having skilled professionals in food handling area, but did not provide the evidential document issued by a training course, featuring this item as inappropriate. Carrying out trainings and technical trainings to food handler professionals can contribute positively to quality improvement in hygienic-sanitary food [15].

V. Conclusion

Based on the results it can be concluded that the hotels evaluated did not have sufficient knowledge about the hygienic-sanitary legislation on food issue. Nevertheless, it can be concluded that most of the hotels presented an average of acceptable level of compliance concerning sanitary hygienic conditions in the A&B sector.

There has been identified several inadequacies in this sector, demonstrating the need for greater attention on the part of entrepreneurs responsible for hotels, in order to educate managers about the importance of the concept about Best Practices, minimizing possible failures in the food production process ensuring quality in service.

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Jacqueline Valle de Bairros, Nutritionist (UFPel-2008), an expert in Quality Food (CBES-2012), Master of Nutrition and Food (UFPel-2013), PhD in Food Science and Technology (UFV). It works with predictive food microbiology. It has experience in safety and food hygiene.

Lucia Rota Borges, Associate Professor Level I of the Nutrition Department of Nutrition School of the Federal University of Pelotas. PhD in Food Science and Technology, Federal University of Pelotas. Master in Health Behavior and the Catholic University of Pelotas. Degree in Nutrition from the Federal University of Pelotas.

Elizabete Helbig, Graduated in Nutrition at the Federal University of Pelotas (1996), Master of Science in Nutrition from the University of Campinas (2000) and PhD in Science and Agroindustrial Technology, Federal University of Pelotas (2007). Adjunct Professor of the Federal University of Pelotas.Tem experience in Nutrition, with emphasis on Experimental Nutrition, Dietetics and Food Analysis, mainly working with the following topics: anti-nutritional factors (tannins and phytates), resistant starch and bioactive substances in food.