

Food Handlers' Occupational and Professional Training Characterization

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Abstract

Food handlers play a fundamental role in the transmission of Food Transmitted Diseases- DTAS. This study is aimed to characterize a population of workers in segment of food and beverage who participate of the training process with a focus on sociodemographic, occupational and training profiles on a capital of northeastern Brazil. We evaluated 116 participants from food handlers participating in the training process of qualification with the School of Hospitality and Tourism - Barreira Roxa of the state of RN located in northeastern Brazil. We used a structured questionnaire containing questions concerning social- demographic and professional training aspects. It was observed that 51% of the samples were women with an age average of 30 ± 8.2 years; 78% had completed high school, 88.8% of subjects had no technical training for their job function and 57% worked as sales promoters. Moreover, it was presented a high turnover among participants. The results indicate the presence of workers without professional and school advancement in the food segment. So there is a need for training programs coupled with various actions that could contribute to the production of safe food.

Keywords: Food handler; Training; Food hygiene; Food safety

Introduction

Currently in Brazil the market of collective meals provides 18 million meals / day, offers 205 thousand direct jobs [1]. In this context, it is important to emphasize to the figure of food handler that the International Recommendation Code of Practice and General Principles of Food Hygiene defines as any person who directly handles food, whether processed or not, and contact surfaces involved with these and/or equipment and utensils necessary for its processing [2].

By exercising important role in food contamination [3,4] should professionals should present skills and knowledge necessary to perform their duties safely [5]. Actions such as continuing education, regular training and awareness of them show up as an effective way to improve the behavior of these professionals regarding the prevention of disease [6,7]. Studies provide verification as to the knowledge and practices of food handlers regarding food safety [5,8,9].

In Brazil, a normative N.0 216/2004 requires that all food handlers be supervised and trained regularly with discussion of topics related to personal hygiene, hygienic handling of food and food transmitted illness [10]. However, typical features of this professional category with low educational level and socioeconomic status, language and reading difficulties, poor motivation along with low salaries and job status contribute to the low professional performance of such workers [11].

Therefore, the scenario presented leads us to think of the food handler as a key element in preventing food contamination. In this sense, knowing the characteristics that are peculiar, as well as the aspects that relate to the same, becomes imperative for the manager of the food service be able to establish strategies of quality control as a means of effecting food security. So, come up questions like: Who is the food handler of the food service? Which aspects relate to their occupation? What leads them to build capacity?

So, considering that there are insufficient research related to human resource management in the area of nutrition and especially those that address the operational level workers and their experiences in relation to work, this study aimed to characterize a population of workers in the segment of food and beverage who participate of the training process with a focus on sociodemographic, occupational and training profiles on a capital of northeastern Brazil [12-14].

Materials and Methods

This study characterized as descriptive, transversal and was developed with the School of Hospitality and Tourism- Barreira Roxa of the National Service of Commercial Learning (SENAC), located in the city of Natal in Rio Grande do Norte, Northeastern Brazil, from January to July 2010. The choice of this institution was given because it is a reference in terms of human resources certification in the food and beverages segment throughout the state.

Participants were food handlers enrolled in a theoretical course safe handling of food with a workload of 30 hours promoted by the institution. The sample consisted of convenience due to the possibility of present refusal by ethics aspects. The study included 116 food handlers and numerical representation provided a percentage of 73.4% of the population. Were considered as inclusion criteria, be employed in the food sector for at least six months and participate in the training course in safe handling of food at the aforementioned school. Exclusion criteria were voluntarily give up the search; engage in professional activities which are not in the food segment and refusal to participate in same.

It was used as a research tool a structured questionnaire designed specifically for this purpose containing 27 questions pertaining to social-demographic data, occupation and vocational training. A pretest took place among 78 participants from another training process at the same institution, aiming to observe the clarity and understanding of the issues being subsequently disregarded from further analyses. Some

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questions were adapted according to participants' responses during the pretest.

The variables used in the description of the profile of food handlers were:

- **Sociodemographic:** gender, marital status, age, years of education, level of education, monthly family income in minimum wages.
- **Occupational:** Working time in years in the food and beverage segment, labor time in years at the company where holds the current function, the establishment at which is currently working, current position, weekly workload in hours, daily workload in hours, reason that motivated to pursue such activity, claim to pursue a career in the food and beverage segment.
- **Training:** Participation in training courses for the function performed, frequency of participation in training courses, technical training for the function performed, reason for participation in the training course.
- **Other:** Reason that caused him to be a food handler, claim to follow the activity of food handler, job prospects in the segment over a period of 10 years, if would trade activity.

The occupational categories were constructed according to the Brazilian Classification of Occupations of the Ministry of Labor and Employment (MTE) [15] and considering the similarity of tasks in the work process, resulting in: Sales promoter, auxiliary in food services, cook, waiter and manager. Due to the small number in the study population it was used the category - Other.

The administration procedure was performed during the lectures course of Safe Food Handling, in the institution with the following order: (a) presentation of research and outline of its goals, (b) general instructions on participants' anonymity and free deliberation of each to respond, (c) signing the Free and Clarified Consent Term and (d) specific instructions on how to answer the questionnaire, then followed by the individual administration.

The data obtained were described in Microsoft Excel (2003) spreadsheet and word processors in order to organize and tabulate data for statistical analysis, descriptive and inferential statistics based on the goals proposed and realized by using the Statistical Package for Social Science for Windows (SPSS 15) and taking as a basis for making decision a confidence level of 95%. To determine the association between the variables mentioned we used the chi-square test. The research was conducted according to the ethical principles contained in Resolution 196/1996 of the National Health Board, Ethics Research Committee of the Federal University of Rio Grande do Norte (Protocol 265/08).

Results

In the study population the females predominated (51%), marital status, unmarried (53%), mean age 30 ± 8.2 years (63%), education compatible to high school (78%) accounting for 11.8 ± 2.4 years of school and household income equivalent to the lowest wage in the country (87.9%). The data are presented in Table 1.

The responses provided data presented in Table 2, which showed distinctions as to the scope of professional practice, specifically that 54% (N=63) and 84% (N=97) of the subjects had up to 5 years of professional experience in the segment food and beverage and in the company where they exercised their current activities, respectively. It

Characteristics	N	%
Sex		
Male	57	49
Female	59	51
Marital Status		
Married	55	47
Single	61	53
Age group		
20 - 30 years	73	63
31 - 40 years	29	25
41 years and older	14	12
Schooling level		
Elementary education	16	14
High school education	91	78
University education	9	8
Income (In number of minimum wages)		
Up to 1	102	87.9
From 1.5 to 3	14	12.1

Table 1: Sociodemographic Characteristics of the Sample. Natal, Brazil, 2014.

Characteristics	N	%
Role		
Sales promoters	66	57
Food services assistant	20	17
Chef	13	11
Waiter	6	5
Manager	6	5
Other roles	5	4
Place of work		
Supermarket	69	59
Restaurant	28	24
Hotel	10	9
Other		
Weekly commute (in hours)		
40	21	18
44	76	66
Over 44	19	16
Time working in the sector (in years)		
Up to 5	63	54
6 to 10	30	26
More than 10	23	20
Time working at current company (in years)		
Up to 5	97	84
6 to 10	12	10
More than 10	7	6

Table 2: Occupational Characteristics of the Sample. Natal, Brazil, 2014.

was also observed that 57% (N=66) of the sample consisted of sales promoters and 59% (N = 69) worked in supermarkets.

Regarding the professional qualification of the participants, it was found that a significant portion of the sample 43.1% (N=50) never participated in training courses in safe manipulation of food. However, 56.9% (N=66) of the respondents used to attend training courses to the function performed.

Table 3 shows the association between occupational variables and training sample, it was found by chi-square test that there is a significant association between participation in training courses and

Variables	Technical training for the role played		p	Participation in training courses		
	Yes N (%)	No N (%)		Yes N (%)	NoN(%)	p
Work Establishment						
Supermarket	8 (61,5)	61 (59,2)	0.86	55 (83,3)	14(28)	0.01
Restaurant	3 (23,1)	25 (24,3)		8 (12,1)	20(40)	
Food industry	0	4 (3,9)		2(3)	2(4)	
Hotel	1 (7,7)	9 (8,7)		1 (1,5)	9 (18)	
Other	1 (7,7)	4 (3,9)		0	5(10)	
Total	13	103		66	50	
Function						
Sales Promoter	7 (53,8)	59 (57,3)	0,01	52 (78,8)	14(28)	0,01
General Services Assistant	0	20 (19,4)		5 (7,6)	15(30)	
Cook	3 (23,1)	10 (9,7)		1 (1,5)	12(24)	
Waiter	0	6 (5,8)		2(3)	4(8)	
Manager	3 (23,1)	3 (2,9)		4(6,1)	2(4)	
Other	0	5 (4,9)		2(3)	3(6)	
Total	13	103		66	50	
Time working in the food sector						
Up to 05 years	8 (61,5)	55 (53,4)	0,63	34 (51,5)	29(58)	0,78
6 to 10 years	2 (15,4)	28 (27,2)		18 (27,3)	12(24)	
Over 10 years	3 (23,1)	20 (19,4)		14 (21,2)	9 (18)	
Total	13	103		66	50	
Time working in current company						
Up to 05 years	10 (76,9)	87 (84,5)	0,79	59 (89,4)	38(76)	0,14
6 to 10 years	2 (15,4)	10 (9,7)		4(6,1)	8(16)	
Over 10 years	1 (7,7)	6 (5,8)		3(4,5)	4(8)	
Total	13	103		66	50	

Table 3: Association between occupational characteristics and training from sample. Natal rn. In 2011.

the establishment of labor ($\chi^2 = 43.44, p < 0.01$), as well as participation in training courses and job function ($\chi^2 = 38.83, p < 0.01$).

It was observed that there was a significant association between the reason of participation in the training course and job function ($\chi^2 = 59.40, p < 0.001$) and type of work setting ($\chi^2 = 47.89, p < 0.001$). The results revealed that most of the subjects, 83.1% (N=54), had as its main reason for participating in the training course the requirement of the company where they worked, as they worked in the capacity of sales promoters in supermarkets.

By analyzing the perspective of employees towards work showed that approximately half of the participants (50.9%) would change profession if given the opportunity, however, a significant portion of respondents (44%) said they plan to pursue this professional activity. It was noted that there was an association between the prospect of working in the food segment during a future period and technical training of employees for the activity performed ($\chi^2 = 3.79, p < 0.05$).

The definition of professional activity exercised was found in almost half of the individuals who decided to pursue the activity and act as food handlers because of the opportunity that presented itself (49.1%), in other words, without any perception of potential, ability or even previous training in the area.

Regarding the sociodemographic characteristics, it was not observed the association between these variables and vocational training.

Discussion

A female predominance among the handlers may be related to the difficulty of women, especially those without schooling or in an older age group, in entering the labor market, leading thus their domestic skills as professional activities in obtaining a source of income. This aspect may be common in underdeveloped countries. A study conducted in Uganda showed that 87.6% of those belonging to the female gender [8].

On the other hand the current social indicators in Brazil indicate younger women as getting a longer schooling compared to men, which can characterize a changing professional behavior in the coming years, and the targeting of replacement of foods in supermarkets for an activity predominantly male. This feature of activity allocation and gender can also be evidenced in the study the food handlers of municipal daycare centers in Natal-RN and whose frequency was observed 100% for females in the sample [16].

It is clear that the income from the activities demonstrates the low investment in human resources and in the development and diversification of activities, without possibility to further increase other aspects, especially the professional qualification for employment rise. Low pay is evident between this occupational category which makes it one of the lowest as a source of income, corroborating with the study between handlers in public restaurants in the State of Rio de Janeiro, Rio de Janeiro, where it was detected that 60.2% of respondents were given up to 01 minimum wage [17]. Thus becomes an activity without the

possibility of future distinction and qualification for the qualification or social change, a typical part of the population without age or resources to change the social status.

The lack of perspectives on the rise of labor, especially for those with higher age, lower educational level, and certainly with less perception of life changes, it becomes evident why a significant number of participants stated wish to follow in the production segment of foods and beverages. This assumption is reinforced by analyzing study in the city schools of Camacari, in Brazil, where 65.6% of the handlers said they would choose the same profession [18]. The observed association between the prospect of career and technical training for their job function, we infer that the activity handler is directly related to the perception of career progression. It can be seen thus a double contingency, on the one hand the perception of career development, where the handler is aware of the requirements imposed by law, and also for those handlers with low education and higher age, the belief leads them to remain in activity for lack of employment options.

Schooling is an important indicator of the quality of the labor force of a nation, revealing the potential for growth and quality of life. As for education level, Brazil has the profile of education considered as the lowest in Latin America, although education lies in expanding the country, especially in these last 10 years. An example of this is that authors found in only 2.9% of the employees of restaurants located in the cities of Campinas and Porto Alegre, a distinct level of average schooling, in this case, with high school level [19].

According to the Brazilian Classification of Occupations (CBO), the occupations of cooks and food service assistants need to have a high school education followed by professional training courses. Similarly to the stockers in supermarkets is required elementary school to high school [15]. However, what is observed is that even with most participants having education level above that required for the activity, there is a deficiency in the development of professional skills and competencies. Kraemer & Aguiar [20] investigated the qualification and competence of workers in food service segment in Brazil and pointed out that employees cannot be identified or recognized on their skills in the modification of the raw material. This fact may be linked to bad practices for the safe handling of food, contributing to food contamination or by the culture of the activity, the seasonality of the activity or the disqualification of work.

The lack of qualification of food handlers besides reflecting the insertion in the labor market also influences on their stay with a high *turn-over* in the food and beverage segment, implying the absence of quality of food produced. The results of this study show worrisome data in this regard, because more than half of the participants had only up to 5 years' experience working in the food segment. This idea corroborates the findings of Çakıroğlu & Uçar [21] that in their studies with food handlers noted that those who had lower perception of hygiene were those handlers who have 3-6 years of experience in the food segment.

The high turnover existing among us can contribute to improper practices by food handlers. Authors assessing food handlers in the hotel segment in Turkey found that workers with 16 years of experience in the food segment have higher levels of awareness about hygiene, while handlers with experience up to 5 years had a lower opinion as to the hygiene aspects [22]. In this sense, probably if food handlers develop a correct perception of hygiene it's possible to succeed in this field, and as a result, the risks of food transmitted illness diminish through correct practices when handling food.

The indicative discussed reveal the need for actions aimed at

qualifying this population so that they acquire adequate sanitary-hygienic habits and consequently have an improved quality of products produced. Cho, Hertzman, Erdem, & Garriott [23] investigating Latino workers in food services found they had an average of 5.72 years of experience in the industry and issues such as customer satisfaction, for example, were more motivating than perceptions related to susceptibility to the occurrence of FTDs. The author attributes this fact to the specific characteristics of the Latino population.

Evidence featuring food handlers as people without specialties predominantly industrial, instructional level reflecting the low perspective of professional growth, confirmed by a significant portion of respondents who intend to continue with the current professional activity, demonstrating once again the need for public investment in education and professional qualification.

The association found between participation in training courses and establishment of work sheds light upon discussion, where it can be said that the supermarket segment has greater concern in enabling their handlers. This fact can be explained by the sector's competitiveness. For van Tonder, Lues, & Theron [24] legislation and education act decisively in reducing FTDs and managers should be aware of this relationship to capacitate employees. The authors note that 84% of food handlers participated in formal training courses in personal hygiene. These results contrast those found in this study, where only 56.9% of the subjects participated in training courses. These results combined with the fact that a significant portion of the sample had no specific training for their job function becomes evident that the qualification or its absence is a crucial point in misconduct against handlers of safety practices in food handling. However, study [25] found that 40% of food handlers said that even after undergoing training in food hygiene, they did not receive enough support from their managers. The author suggests that appropriate training for food handlers without sufficient management support, does not significantly affect the intent of employees to carry out safe practices for food handling.

In Portugal only 24% of the items that dealt with food handlers were adequate, these being those with the highest number of nonconformities [26]. In this study, important issues related to conduct and performance of handlers presented themselves as inadequate. The observed association between occupation and participation in training courses fans the idea that food handlers can directly contribute to food contamination, as they perform tasks throughout the production process, as without proper training they eventually acquire inadequate actions during the performance of their duties.

Given the requirement for participation in the legal obligation of training courses on the part of food handlers and their evidence, according to normative N° 216/2004, companies are forced to address workers to this formation [10]. The results demonstrate the need for greater supervision and requirement of the responsible bodies, since most of the subjects assessed, exercised in handling food before arriving to the point of attending training course in food hygiene. This aspect may be relevant to the contribution of the occurrence of FTDs because

97% of outbreaks of food contamination comes from human error [27]. However, the legislation does not require that employees participate in the courses before starting their activities, compromising the quality of services. These assertions are supported by the results of this study, where 88.2% (N = 103) of the handlers had no training in food hygiene.

By consulting the Brazilian Classification of Occupations identifies that food service helpers and cooks perform tasks such as direct

manipulation of food preparation, processing and mounting plates [15]. In our study only 17% and 11% of respondents exercised such functions, respectively. For NB & Shafee [28] handlers involved in serving food to customers are primarily responsible for contaminating food and transmitting diseases, in their studies the author found 60.2% of handlers involved in such activities. These results contrast with those found in this study, where the majority of subjects (57%) were sales promoters, considered indirect food handlers.

The definition of professional activity exercised was found in almost half of respondents (49%) who decided to pursue the activity and act as food handlers because of the opportunity that presented itself, in other words, without any perception of potential, ability or previous training in the area. The social approach in which the handler is inserted also influences their actions as their professional activity. By studying the perception of food handlers as the barriers faced for work authors [11] found that poor working conditions faced hindered the administration of any technique learned in training for safe handling of food, as well as unsanitary conditions of the environment (high temperature, high humidity and poor ventilation) caused irritation and physical and mental fatigue increasing the chances of mistakes.

So creating a culture of food safety incorporates efforts of the administration, aware of the responsibilities and commitment of the organization as an integrated system, which affects the safety of food produced [29].

Conclusions

These results enable us to elucidate aspects of understanding the role of sociodemographic and professional food handlers, and that can lead to inadequate maintenance of habits during the labor process. The fact that food handlers possess low instructional level and low wages can be characterized as one of the factors that cooperate for bad hygiene practices during food handling. In a region in Brazil where the food and beverages segment contributes significantly to the economy, serves a significant portion of people without access to professional and educational growth and is still worth the habits and traditions and modes of production. The workers are allocated in an industry without the achievements of culture and technologies being appropriate to their daily work.

In this regard, we emphasize the need for training programs held by the Brazilian legislation and destined for the betterment of workers with little education and age above the market absorption, ensuring qualification and skills development. Another highlight is the high *turnover* existing between these workers and it is a challenge faced by companies promoting their technical skills in order to meet the legislation's requirements in an area as important as the safety of food.

Finally it can be said that the findings and reflections reinforce the importance of understanding how aspects regarding the transition of sociodemographic, occupational and training expressed by Brazil's economic development are presented to this working class, being extremely important for the understanding of the qualified and insured production process.

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