



ISSN: 2395-7476
IJHS 2018; 4(2): 11-14
© 2018 IJHS
www.homesciencejournal.com
Received: 11-03-2018
Accepted: 14-04-2018

Amanda Joseph
Department of Home Science,
Women's Christian College,
Chennai, Tamil Nadu, India

Food safety knowledge among restaurant workers in Chennai

Amanda Joseph

Abstract

The present study was planned to assess the knowledge of food safety among food service personnel working in restaurants in Chennai city. 100 food service personnel working as food handlers in restaurants in Chennai city, were selected as participants for the study. Questions on the knowledge of food safety were regarding the temperature of foods, cross contamination, presence of germs and hand hygiene. It was found that the percentage of male participants who had good food safety knowledge was higher than their female counterparts. It was also found that for certain aspects of food safety, those who had undergone food safety training had a better knowledge of food safety in comparison to those who did not receive any training. Therefore, food handlers need to be educated on the knowledge of food safety to prevent the spread of food borne diseases.

Keywords: food safety knowledge, restaurants, Chennai, food handlers, hygiene and sanitation

1. Introduction

Food safety is a scientific discipline describing handling, preparation and storage of food in ways that prevent food borne illnesses. Food can transmit disease from person to person as well as act as a growth medium for bacteria that can cause food poisoning. Intricate standards for food preparation are needed, as well as the availability of adequate safe water, which is usually a critical item (Shiklomanov, 2000) ^[10].

The World Health Organization (WHO) reports that there are approximately 2 million fatal cases of food poisoning occurring every year globally (World Health Organization, 2015) ^[13], especially in developing countries. This scenario could be due to the poor state of food safety and general hygiene in those countries.

Food production is a complex process aimed at the production of safe and quality foodstuff. This goal is determined by many factors, and one of the most important is knowledge of people involved in the process of food production throughout the food chain. Lack of knowledge in one of the stages of the chain can jeopardize all the efforts made to improve the safety of food products (Grujić *et al.*, 2013) ^[4].

Angelillo *et al.* (2000) ^[2] suggested that food handlers who had good knowledge of proper food handling practices could help to control food poisoning cases as they were in direct contact with food, particularly ready-to-eat foods. Poor personal hygiene, primarily ineffective hand washing, has been recognised as a significant risk factor of food contamination that leads to food poisoning (Curtis and Cairncross, 2003) ^[3].

2. Materials and Methods

A random sample of 100 food service personnel working in restaurants in Chennai city were chosen as the participants for the study. The participants constituted both males and females and were between 20 and 55 years.

2.1 Questionnaire

A standardised questionnaire was given to the participants to answer. Questionnaire sketch was designed based on previous research in the world and experience in this field (Taylor, 2001; Grujić *et al.*, 2010; Jevšnik *et al.*, 2008) ^[11, 5, 6]. The survey was adapted from one used to assess baseline knowledge of food handlers in the suburbs of Chicago (Manes *et al.*, 2013) ^[9].

Correspondence
Amanda Joseph
Department of Home Science,
Women's Christian College,
Chennai, Tamil Nadu, India

Information on the socio-demographic data, details about the food service establishment, health status of the food service personnel were elicited from the participants. Questions on the knowledge of food safety were regarding the temperature of foods, cross contamination, presence of germs and hand hygiene.

3. Results and Discussion

The data obtained was consolidated and analysed statistically. The results have been discussed below.

3.1 Knowledge of Food Safety

Table 1: Percent distribution of food service personnel who scored full points in each category of knowledge on food safety

Knowledge on food safety	Male		Female		Total	
	N	%	N	%	N	%
Temperature	12	17.6	0	0	12	12.0
Cross contamination	16	23.5	0	0	16	16.0
Germs	32	47.1	8	25.0	40	40.0
Hand hygiene	23	33.8	4	12.5	27	27.0

The percentage of male employees who scored full points on temperature-related questions was 17.6 percent. None of the female employees scored the same.

The percentage of male employees who scored full points on cross-contamination related questions was 23.5 percent. None of the female employees scored the same. According to a study by Akabanda *et al.* (2017) [1], majority of respondents (93.6 percent) agreed that knives and cutting boards should be properly sanitized to prevent cross contamination of foods.

The percentage of male and female employees who scored full points on germs-related questions was 47.1 percent and 25 percent respectively. Only 21 percent (33) and 53 percent

(83) of the food handlers knew that cooked rice and uncooked eggs can have germs that can make people sick, respectively. By contrast, a much greater proportion of participants were aware that uncooked chicken and beef can have germs that can make people sick (145, 93 percent and 141, 90 percent, respectively) and that uncooked meat can cause serious conditions, like bloody diarrhoea (127, 81 percent) (Manes *et al.*, 2016) [8].

The percentage of male and female employees who scored full points on hand hygiene related questions was 33.8 percent and 12.5 percent respectively.

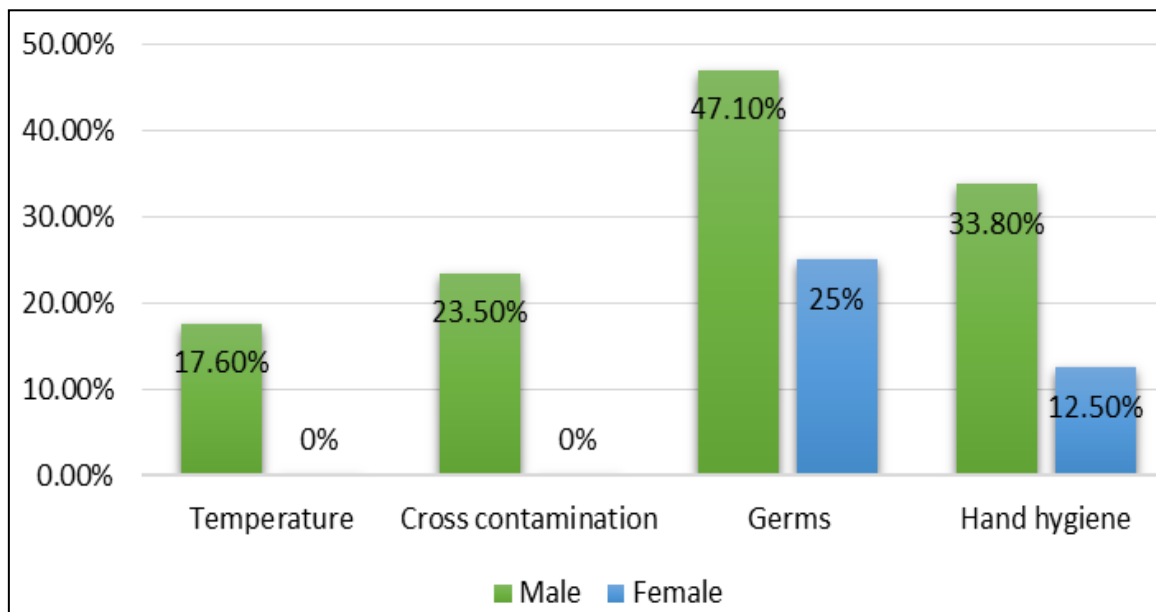


Fig 1: Percent distribution of food service personnel who scored full points in each category of knowledge on food safety

3.2 Food safety training

Table 2: Percent distribution of food service personnel based on food safety training

Food safety training	Male		Female		Total	
	N	%	N	%	N	%
No	24	35.3	18	56.3	42	42.0
Yes	44	64.7	14	43.8	58	58.0

As per the results tabulated, a large number (64.7 percent) of males and less than half (43.8 percent) of females had undergone food safety training. Males (35.3 percent) and

females (56.3 percent) reported to have not undergone food safety training. From the data given, majority of the male personnel had undergone food safety training, while majority of the female personnel had not undergone food safety training.

According to research on employees of the food industry, the cognition and execution of hygiene and safety procedures of people who have received food safety training exceed those of the untrained (Ko, 2015) [7].

3.3 Comparison of food safety knowledge scores of male and female food service personnel

Table 3: Comparison of food safety knowledge scores of male and female food service personnel

Variable	N	Mean	SD	SE Mean	't'	Level of significance	
Temperature score	Male	68	4.12	2.155	.261	3.100	.003**
	Female	32	2.75	1.832	.324		
Cross contamination score	Male	68	3.25	1.386	.168	3.079	.003**
	Female	32	2.38	1.185	.209		
Germs score	Male	68	4.63	1.770	.215	2.961	.004**
	Female	32	3.41	2.241	.396		
Hand hygiene score	Male	68	3.82	1.145	.139	3.151	.002**
	Female	32	3.03	1.231	.218		
Total knowledge score	Male	68	15.82	4.902	.594	3.151	.002**
	Female	32	11.56	4.536	.802		

**-Significant at 1 percent level. *-Significant at 5 percent level. NS – Not Significant.

From table 3, it was found that there is a highly significant difference at 1 percent level in the temperature, cross contamination, germs, hand hygiene and total knowledge scores between male and female personnel. In all the aspects of knowledge, the mean score of male personnel is greater

than the female personnel.

Food handlers who had good knowledge were 1.69 times more likely to have good food handling practices compared to those who had poor knowledge (Tessema *et al.*, 2014) ^[12].

3.4 Comparison of knowledge scores of food service personnel based on food safety training received

Table 4: Comparison of knowledge scores of food service personnel based on food safety training received

Variable	N	Mean	SD	SE Mean	t	Level of significance
Temperature score	No training	42	3.17	2.106	-2.069	.041*
	Training received	58	4.05	2.114		
Cross contamination score	No training	42	2.71	1.312	-1.587	.116 NS
	Training received	58	3.16	1.412		
Germs score	No training	42	3.93	2.123	-1.326	.188 NS
	Training received	58	4.47	1.903		
Hand hygiene score	No training	42	3.38	1.229	-1.318	.190 NS
	Training received	58	3.71	1.214		

**-Significant at 1 percent level. *-Significant at 5 percent level. NS – Not Significant.

From the results it was found that, there is a significant difference at 5 percent level in the temperature scores between those personnel who have undergone food safety training and those who have not. The mean score for those who received training is higher than those who did not receive any training. There is no significant difference in the cross contamination, germs and hand hygiene scores between those personnel who have undergone food safety training and those who have not.

4. Conclusion

More and more people are consuming food outside the home now-a-days. To prevent the spread of food borne diseases, food handlers need to be educated on knowledge of food safety. Food safety is of vital importance as it ensures proper food handling, prevents cross contamination, and inculcates the right attitude and adherence towards other principles of food safety.

5. Recommendations

Comparison of the knowledge, attitude and practice of food safety among food service personnel working in food service establishments in different cities in Tamil Nadu or India.

6. Acknowledgements

The researcher expresses her sincere gratitude and heartfelt thanks to Dr. (Mrs) D. Jasmine Jenifer Arulmani, Assistant Professor, Department of Home Science, Women's Christian College, Chennai, for her excellent guidance, immense patience and invaluable help and support throughout the period of study.

She would like to thank the Management of Women's

Christian College, Chennai, for providing her with the Student Research Seed Grant that was used to fund the study.

7. References

1. Akabanda F, Hortsi EH, Owusu-Kwarteng J. Food safety knowledge, attitudes and practices of institutional food-handlers in Ghana. *BMC Public Health*. 2017; 17(1):40.
2. Angelillo IF, Viggiani NM, Rizzo L, Bianco A. Food handlers and foodborne diseases: Knowledge, attitudes, and reported behaviour in Italy. *Journal of Food Protection*. 2000; 63(3):381-385.
3. Curtis V, Cairncross S. Effect of washing hands with soap on diarrhoea risk in the community: A systematic review. *The Lancet. Infectious Diseases*. 2003; 3(5):275-281.
4. Grujić R, Antonić B, Brenjo D, Pavlović P. Attitudes of Workers Employed in Restaurants Toward Importance of Food Safety System Management Implementation. *Quality of Life. A Multi-Disciplinary Journal of Food Science, Environmental Science and Public Health*. 2013; 4(1, 2):5-11.
5. Grujić R, Ivanovic M, Antonic B. Implementation of quality management system in process of food production and food handling. *Quality of Life*. 2010; 1(2):114-120.
6. Jevšnik M, Hlebec V, Raspor P. Food safety knowledge and practices among food handlers in Slovenia. *Food Control*. 2008; 19(12):1107-1118.
7. Ko WH. Food suppliers' perceptions and practical implementation of food safety regulations in Taiwan. *Journal of Food and Drug Analysis*. 2015; 23(4):778-787.
8. Manes MR, Kuganatham P, Jagadeesan M, Laxmidevi

- M, Dworkin MS. A Step Towards Improving Food Safety in India: Determining Baseline Knowledge and Behaviours Among Restaurant Food Handlers in Chennai. *Journal of Environmental Health*. 2016; 78(6):18-25.
9. Manes MR, Liu LC, Dworkin MS. Baseline knowledge survey of restaurant food handlers in suburban Chicago: Do restaurant food handlers know what they need to know to keep consumers safe? *Journal of Environmental Health*. 2013; 76(1):18-26.
 10. Shiklomanov IA. Appraisal and Assessment of World Water Resources. *Water International*. 2000; 25:11-32.
 11. Taylor E. HACCP in small companies: benefit or burden? *Food Control*. 2001; 12(4): 217–222.
 12. Tessema AG, Gelaye KA, Chercos DH. Factors affecting food handling practices among food handlers of Dangila town food and drink establishments, North West Ethiopia. *BMC Public Health*. 2014; 14:571.
 13. World Health Organization (WHO). *Food Safety*. Geneva, Switzerland, 2015.