

Knowledge, Attitude and Practice of Food Handlers Toward Food-Borne Infections; A Survey During War

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Abstract:

Background: food safety knowledge attitude and practice among food handlers during war catastrophe are important measures in the prevention of food borne diseases outbreaks.

Aim: to assess knowledge attitude and practice of food handlers toward food borne infections.

Method: a cross-sectional descriptive observational study was conducted within one months. It involved 36 food handlers in different positions. Total sampling was done. Data were collected by interview-based questionnaire and analyzed by SPSS version 27.0.

Results: the total score of the employee's level of knowledge was (414 / 63.8%) points which indicate moderate level. The score of attitudes was (253 / 63.8%) points that reported moderate level of attitude also. (497 / 23%) points were scored for the practice, and poor level was showed.

Conclusion: Ministry of health should consider these factors for enhancing food handlers' knowledge and increase training and supervision on food safety practices to reduce foodborne diseases and outbreaks.

Keywords: foodborne infection; KAP; food handlers; Sudan.

Introduction

Food safety is a central theme for consumers, food service units, and regulatory authorities. Millions of people are hospitalized for contaminated food annually [1]. About 70% of these foodborne diseases relate to catering units. Hospital outbreaks carry a risk of dying three times compared to other food units [2].

Epidemiological data and surveys have demonstrated that hospitals are a fertile environment for embracing foodborne diseases [3-5]. This environment is largely shaped by unsound practices by food handlers. They also play a significant role in hospital foodborne outbreaks [4,6].

Several studies have been done to assess food safety knowledge, attitudes and practices of food handlers in different countries. These studies reported diversified levels of knowledge, attitudes and practices scores in different countries. Associations were found between food safety knowledge and sociodemographic factors such as age, education level, working experience, previous training courses and type of hospitals in some studies. Many studies emphasized educational intervention programs or training sessions on food safety knowledge as they

commenced a significant positive improvement in food handlers' knowledge after an intervention. Moreover, food handlers' education level and years of experience were associated with food safety practices.

In Sudan, very few studies have been conducted in this context, especially in a difficult period as a war. So, we aim to assess knowledge, attitude and practice of food handlers toward food borne infections during war. This will give responsible health authorities a base that can be relied upon when applying training and supervisory plans.

Method

The study was community-based observational descriptive cross-sectional study. It was done on four major restaurants that supposed to follow high standards of food processing quality control in Omdurman, Khartoum state, Sudan. The target population was all food service employees in those restaurants (i.e: administration staff, chefs, and waiters). No one was excluded. The sampling technique used was total sampling. The sample size of this study was 36 participants. The data collectors were well trained and

approached all subjects (n=36) using structured interview-based questionnaire. The questionnaire included demographic variables (age, gender, and education status), work experience, employment type, current employment position, and food safety training.

Knowledge was measured by 18 multiple choice questions with (true, false and do not know) answers. 1 point was considered for each correct answer "true", except for the fifth question the correct answer was "false". The total of each participant ranging from 0 to 18, while the total of all subjects (n = 36) was 648 points maximum. The level of knowledge was assessed as poor (0-216 / up to 33.3%), moderate (217-432 / 33.4% - 66.6%) and high (433-648 / 66.7% - 100%).

Attitude questions were 11 scales with (agree, disagree and no idea). "agree" was the correct answer with 1 point. The total score of each participant between 0 – 11, and the total of the sample was 396 points. The attitude was estimated as poor (0-132 / up to 33.3%), moderate (133-264 / 33.4% - 66.6%) and high (265-396 / 66.7% - 100%).

An ordinal scale with (never = 0, rarely = 1, sometimes = 2, often = 3, and always = 4) answers was considered to evaluate the practice. The ninth, tenth, eleventh and fifteenth items were estimated reversibly (never = 4, rarely = 3, sometimes = 2, often = 1, and always = 0). The range from 0 to 60 was calculated for each participant, and 2160 points for the all subjects. The practice was evaluated as poor (0-720 / 33.3%), moderate (721-1440 / 33.4% - 66.6%) and high (1441-2160 / 66.7% - 100%).

All data that led to the identification of patients have been treated confidentially. The study purpose was explained clearly to each patient before filling the questionnaire.

The data were analyzed by Statistical Package for Social Science (SPSS) software version 27.0. Categorical variables were described statistically by frequency and percentage, while numerical variables were described statistically by mean and standard deviation or median and interquartile range according to result of normality test.

The ethical approval was held from Osman Digna teaching hospital and verbal consent was taken from each participant. Each case was informed that the data collected for this study would be used for strictly scientific purposes, and no names would appear in any stage.

Results

The study showed that the demographic features were male (88.8%) and female (11.1%) for gender distribution. While the mean age was (25 ± 6.1). The level of education of the majority was university (33.3%). (38.8%) of the participants have years of experience within 5 to 10 years. Waiters represented the major slice regarding the position (41.6%), and (77.7%) of the employees did not receive any national or international food safety training program. [table-1]

Characteristics	Frequency	Percentage %
Gender		
Male	32	88.8
Female	4	11.1
Education level		
Illiterate	5	13.9
Primary	8	22.2
Secondary	11	30.5
University	12	33.3
Experience years		
< 5	11	30.5
5 - 10	14	38.9
>10	11	30.5
Position		
Waiter	15	41.7
Chef	14	38.8
Administration staff	7	19.4
Food safety training		
Yes	8	22.2
No	28	77.7

Table-1: Sociodemographic characteristics and the employment status of the participants (n = 36)

Regarding the level of knowledge, the total score of the employees was (414) points (63.8%) which indicate moderate level of knowledge. [figure-1]

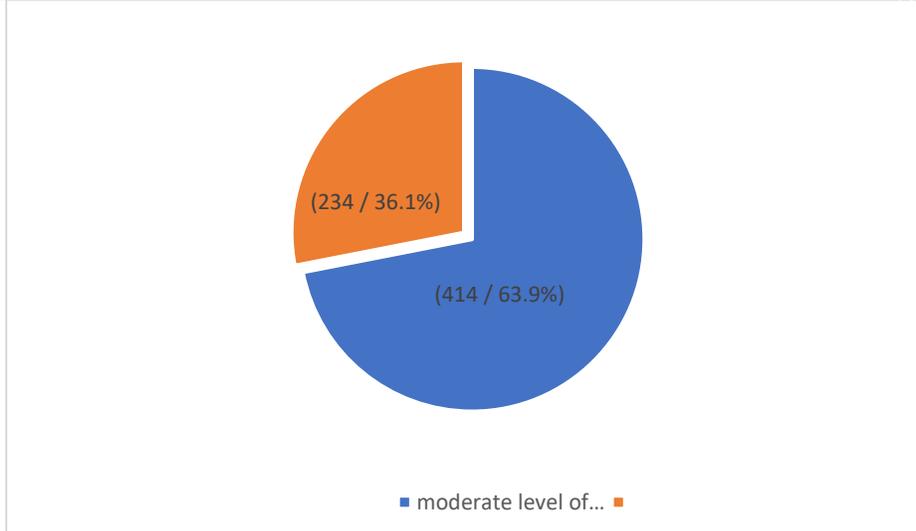


Figure-1: The level of knowledge of food service employees in the restaurants

All subjects score of attitudes was (253) points (63.8%) that reported moderate level of attitude also. [figure-2]

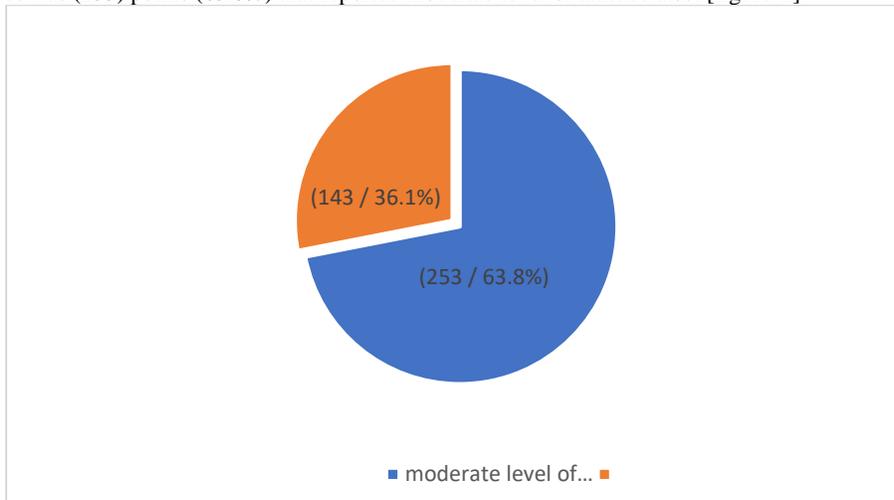


Figure-2: The level of attitude of food service employees in the restaurants

In terms of practice, (497) points were scored (23%), and poor level of practice was showed. [figure-3]

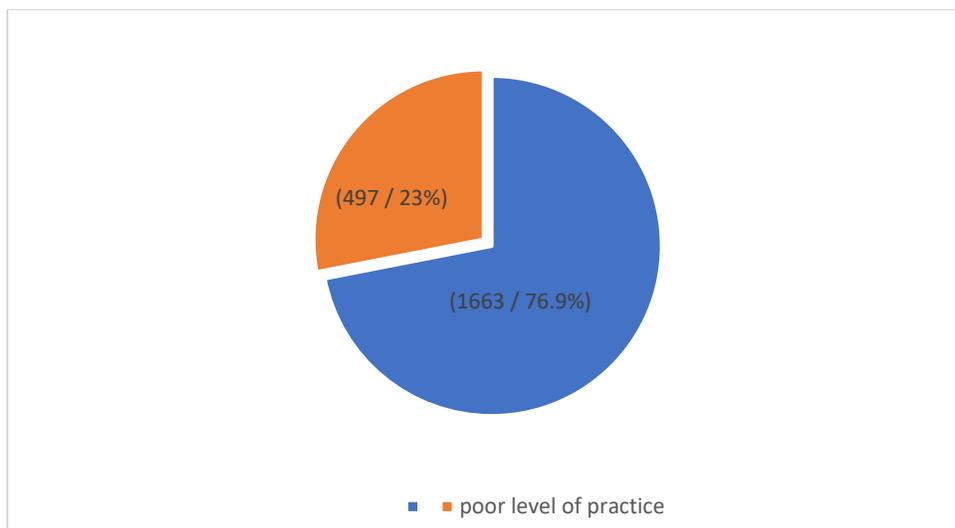


Figure-3: The level of practice of food service employees in the restaurants

Discussion

Similar to many previous studies, this study sought to assess the knowledge, attitude and practice of food handlers in a number of restaurants in Sudan. The unique aspect of our study is to conduct the survey during a critical period in which the country is likely to occur lax and poor health control.

Our demographic findings suggested that the majority of employees were male, with an average age of 25 years and with a university education. The employment characteristics indicated that most of them were waiters who have not received any local or global training programs on food safety and foodborne diseases. They also have work experience ranging from 5 to 10 years.

When talking about the substantive results of the research, food handlers have a moderate level of knowledge of foodborne infections. This contradicts a study carried out in Saudi Arabia, where it was found that nearly half of population suffers from a lack of knowledge of foodborne infections, especially in terms of knowing the relationship of some dairy and raw eggs to food poisoning. [7] This difference is due to the different population targeted for study. In our study the participants were from a highly food-handling environment, but in the other study the target was university students generally. However, there is a study done in a similar population that indicated a good level of knowledge. [8]

Our study indicated that employees' attitude is at a moderate level. On the other hand, our findings are in line with those of a study targeted women in Shiraz to assess their level of knowledge, attitude and practice towards foodborne diseases. [9] But they are not in line with what has been mentioned that nearly half of Malaysia's food handlers have a poor level of attitude. [10] This can be attributed to the fact that the educational level of most employees in Malaysia did not exceed secondary education, in addition, an estimated number of them did not receive certificates of training in the proper handling of food.

Also, our findings have acknowledged that food handlers have a poor level of practice. It is noticeable that our result varies entirely with those referred to in a survey conducted in Indonesia, where the staff have a very high level of practice. [11] The Indonesian study was applied to employees in hospital kitchens, where it is obvious that the highest standards are followed to ensure food safety.

The results of this study can be taken as a mirror by health authorities to reflect the reality of food serving units especially during the critical war period that interspersed with the absence of regulatory systems. The strengths of this study are essentially the period and place in which the study was conducted. The city of Omdurman is a crucial part of the country's capital that is the subject of conflict. This means a near total absence of food health control. By contrast, there are limitations imposed by security conditions in the city that have resulted in shorter study duration and smaller sample size. According to the report, the competent health authorities should improve all aspects of food safety, in particular the practice of food handlers in restaurants. Furthermore, in the future, researchers must take into account the aforementioned limitations.

Conclusion

The Ministry of Health should improve all aspects of food safety, especially the practice of food handlers by intensifying training programs

and applying strict health control to food serving units in order to prevent the consequences of foodborne infections.

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Elmalik Academy of Medical Research

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