

Safe Food Practices among the Regimental Food Handlers of Selected Military Unit

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Abstract

Introduction: Food safety is a key public health concern. Food handlers play an important role in ensuring food safety throughout the chain of preparation, storage and serving.

Aim: To assess the food safety practice level among the food handlers of selected unit messes in Dhaka Cantonment.

Methods: This descriptive cross sectional study was conducted among the food handlers of selected unit messes in Dhaka Cantonment from January 2013 to December 2013. A total of 133 food handlers were selected following convenient sampling technique. Data were collected by face to face interview using a predesigned semi-structured questionnaire and check list. All completed questionnaires were validated manually and data were analyzed with Statistical Package for the Social Sciences (SPSS) version 15.0 by using descriptive and inferential statistics.

Results: In this study, the food handlers had a mean age of 32.9 years; all were male and Muslim. Regarding educational qualification, majority (42.9%) were between class VI to X and 80.5% were married. The mean monthly income of the participants was taka 17,115.8 and 53.4% belonged to nuclear family. Majority (65.4%) of the participants were cook and 39.8% had family members between 4-5 persons. It was found that out of all food handlers 12% had good, 78.9% had average and 9.0% had poor food safety practice status. Descriptive statistics revealed that occupation, education and marital status played a major role for food safety practice level.

Conclusion: Efforts need to be taken to improve the awareness among the food handlers. Safety practices and further studies are recommended on determinants of non-compliance to safety practices by the food handlers.

Key-words: Safe food practices, Food Handlers, Food Safety, Public health concern.

Introduction

Food safety is a fundamental human right. According to World Health Organization (WHO), "Food safety is the assurance that food when consumed in the usual manner does not cause harm to human health and well being"¹. According to Griffith 'food safety' synonymous with food hygiene, embraces anything in the processing, preparation or handling of food to ensure it is safe².

Food safety is a scientific discipline describing handling, preparation, and storage of food in ways that prevent food borne illness. According to WHO, five key principles of food hygiene should be maintained to prevent food from contaminating with pathogens spreading from people, pets, and pests; separate raw and cooked food to prevent contaminating cooked foods; cook foods for appropriate length of time and temperature to kill pathogens; store food at the proper temperature and use safe water and cooked materials³.

Consumption of unsafe food is a serious threat to public health in Bangladesh for last couple of decades. A survey conducted by the Institute of Nutrition and Food Science, Dhaka University, in early 1980s had revealed that inadequate diets and intake of adulterated foods are responsible for the malnutrition of 60% of the people of Bangladesh⁴. Especially children are more vulnerable than adults as unsafe food is a major cause of child mortality⁵. Universally it is accepted that, unsafe food is an important factor of malnutrition, which causes various types of serious illnesses including diarrhoea along with other permanent consequences for the human body⁶.

Materials and Methods

This cross sectional study was conducted during the period of 01 January 2013 to 31 December 2013, among the food handlers (cook, maschalchi, table boy, mess waiter) of different messes in Dhaka Cantonment. Sample size was 133 and sampling technique was convenient sampling. A predesigned semi-structured interviewer administered questionnaire and check list were used as research instrument. Before collecting data, informed written consent from the participants were taken by the researcher. The participants were given full assurance on ethical point of view that under no circumstances, findings of the interview would be disclosed to any unauthorized person.

Results

Among the food handlers majority i.e. 55(41.4%) were in the age group 26-35 years followed by 36(27.1%) were within 36-45 years with mean age 32.9 years. Most of the participants (107, 80.5%) were married while 26(19.5%) participants were unmarried. Among the participants, majority i.e. 57(42.9%) food handlers were educated between class VI to X level, while 52(39.1%) were in SSC level. Majority i.e. 70(52.6%) participants had monthly family income between taka 10001-20000, 35(26.3%) less than taka

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10000 and 9(6.8%) had monthly income taka 30001-40000 (Table-I). All the food handlers (100%) had the practice of hand washing before cooking food, cleaning raw food materials before cooking and cooking food at right temperature followed by 100(75.2%) had habit of hand washing after touching body during food preparation, 74(55.6%) used gown during cooking and 29(21.8%) used cap during food preparation (Table-II). Safety practices during food storage and food serving has been shown in Table-III & IV respectively. Among the participants 100(82.7%) used soap water, 23(17.3%) had the practice of using only water for washing hand (Figure-1), 127(95.5%) participants had clean trimmed nails and 129(97%) had haircut (Table-V). On the basis of selected questions and giving weightage to each answer on food safety practice status among the food handlers, categorization was done as good, average and poor practice and found that out of all food handlers 16(12%) had good, 105(78.9%) had average and 12(9.0%) had poor food safety practice status (Figure-2).

Table-I: Socio-demographic status of food handlers (n=133)

Variable	Participants	%	
Age (in years)	16 – 25	27	20.3
	26 – 35	55	41.4
	36 – 45	36	27.1
	46 – 57	15	11.3
	Mean(+SD) 32(±9.32)		
Marital Status	Married	107	80.5
	Unmarried	26	19.5
Educational Status	Illiterate	3	2.3
	Class I-V	14	10.5
	Class VI-X	57	42.9
	S.S.C	52	39.1
	H.S.C	4	3.0
	Graduate	3	2.3
Monthly Family Income (Taka)	5000 – 10000	35	26.3
	10001 – 20000	70	52.6
	20001 – 30000	12	9.0
	30001 – 40000	7	5.3
	40001 – 50000	9	6.8

Table-II: Food safety practice during food preparation (n=133)

Practice	Yes (%)	No (%)
Hand-wash before food preparation	133(100)	0
Hand wash after touching body during food preparation	100(75.2)	33(24.8)
Clean row food materials before cooking	133(100)	0
Use of gloves during cooking food	0	133(100)
Use of gown during cooking food	74(55.6)	59(44.4)
Use of cap during cooking	29(21.8)	104(78.2)
Cooking food at right temperature	133(100)	0

Table-III: Distribution of respondents by food safety practice during storage of cooked food (n=133)

Practice	Yes (%)	No (%)
Use of clean utensils/dishes for storage of cooked food	133(100)	0
Store cooked food at Refrigerator	55(41.4)	78(58.6)
Store cooked food at Cupboard	78(58.6)	55(41.4)
Maintain temperature of Refrigerator	127(95.5)	6(4.5)

Table-IV: Food safety practice during food serving (n=133)

Practice	Yes (%)	No (%)
Hand wash before serving food	133(100)	0
Use of protective net before serving food	112(84.2)	21(15.8)
Use of clean utensils for serving food	133(100)	0
Use of gloves during serving food	4(3.0)	129(97.0)
Use of gown during serving food	33(24.8)	100(75.2)
Use of cap during serving food	13(9.8)	120(90.2)
Use of face mask during food handling	0	133(100)

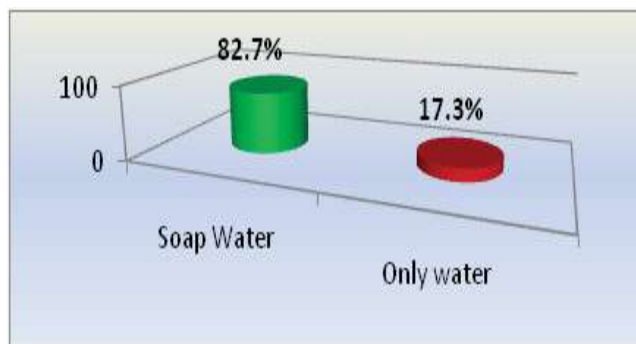


Figure-1: Material used by food handlers for hand washing (n=133)

Table-V: Condition of nail and hair of the participants (n=133)

Condition	Yes (%)	No (%)	Total (%)
Trimmed nails	127(95.5)	6(4.5)	133(100)
Hair cut	129(97)	4(3)	133(100)

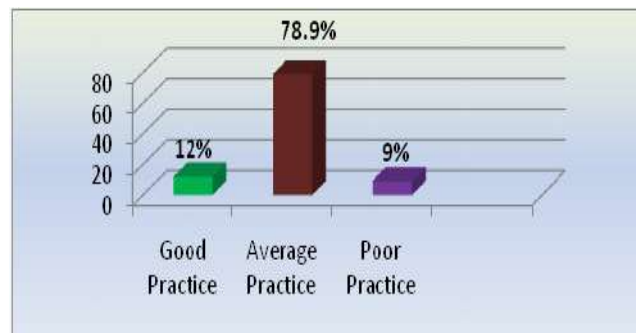


Figure-2: Food safety practice level of food handlers (n=133)

Discussion

Food is a potential source of infection and is liable to contamination by microorganism, at any point during its journey from the producer to consumer. Still food borne diseases are leading medical challenges of the twenty- first century and also appearing as a public health problem in developing countries like India, Sri Lanka and Bangladesh. The aim of the study was to assess the food safety practice level of the food handlers of selected unit messes in Dhaka Cantonment.

The mean age of the food handlers was 32.94 years and maximum i.e. 55(41.4 %) were in the age group 26-35 years and lowest 15(9.8%) were within 46-57 years. The study finding is consistent with the findings of the study conducted by Khan AH⁷ among the food handlers on knowledge and personal hygiene practice in hotels at district town Gazipur where he found age group of the

majority food handlers (68.6%) were in the range of 25-35 years. Another study conducted by Mizanur R et al⁸ found mean age of respondents was 30.9 years which also similar with present study.

Regarding educational qualification, the study showed that out of all the participants, majority i.e. 57(42.9%) food handlers were educated between class VI to X level, while 3(2.3%) were graduate level qualified and only 3(2.3%) were illiterate. The study finding is consistent with findings of study conducted by Thidarat C et al⁹ in Thailand where he found 52.2% was primary graduate and 6.5% did not attend school. The illiteracy rate differs from the studies conducted by Chowdhury FA¹⁰ and Mudey AB et al¹¹ among the food handlers where they found illiteracy rate was 49.8% and 63.13% respectively.

The mean monthly income of food handlers was 17115.8 taka. The study revealed that majority i.e. 70 (52.6%) food handlers had their monthly family income between taka 10001-20000. This study findings does not correlate with the findings of the studies conducted by Dhar S¹² and Khan AH⁷, they found monthly income of majority respondent were ranged taka 1000-2000 and taka 1000-1500 respectively. Monthly income of the food handlers in this study was high probably due to all the food handlers were in service.

Health is the paramount importance in Bangladesh army. Practice on maintenance of health can be achieved by increasing food safety practice level. The study showed that 100% of the food handlers had habit of washing hand before preparing and serving food which does not correlate with the findings of the study conducted by SK Roy¹³ regarding household food safety and hygiene knowledge, attitudes and practices (KAP) in Bangladesh. The study revealed practice of hand washing immediately before preparing food was among 48.5% of the respondents, hand washing immediately before serving food was 66.5% of the respondents. The higher level of practice in Military may be due to higher educational qualifications of food handlers serving in Army.

It was found from the study that 100% of the food handlers did not use hand gloves during handling food which coincide with the study conducted by Chowdhury FA¹⁰ where it was found that none of the respondents had the habit of using hand gloves before handling food. The study findings is dissimilar to the findings of the study conducted by Siow ON et al¹⁴. Regarding food safety for the assessment of Knowledge, attitudes and practices (KAP) among food handlers at residential colleges and canteen in Malaysia found that 52.3% used gloves during handling food. It was also found from the present study that 24.8% of the participants had practice of using gown and 9.8% had practice of using cap during preparing food which is dissimilar to the study findings conducted by Thidarat C et al⁹ where it was found 69.2% used gown and 84.6% food handlers had practice of using cap during handling food.

This study depicted that 75.2% of the respondents had the practice of hand washing after touching body and this finding does

not coincide with the study conducted by Chowdhury FA¹⁰ where 49.3% of respondents had the habit of washing hands after touching body.

It was also evident from the study that among the participants 82.7% had the practice of using soap water and 17.3% had the practice of using only water for washing hand which disagree with the study of SK Roy¹³ where he found 14.3% used soap water and 48.7% used only water. This may be due to higher educational qualifications of food handlers serving in Army and better management and control. This study revealed that 95.5% food handlers had trimmed nail. This finding was close to the findings of the study conducted by Mudey Ab et al¹¹ in India where they found 89.1% had clean nails.

It was evident from the present study that, out of 133 food handlers 12% food handlers had good food safety practice level, 78.9% had average practice level and 2.9% had poor food safety practice level. The finding is consistent with finding of the study conducted by Thidarat Cet al⁹ in Thailand, where he showed among the food handlers 15.2% had a good practice. The study finding differs from study conducted by Chowdhury FA¹⁰ who found 71.2% food handlers of Dhaka University hostel had poor hygiene practice habit and 28.8% had good hygiene practice habit. The food safety practice status of army food handlers is better probably due to good educational background, awareness and disciplined life.

Conclusion

Food safety is an utmost concern in the twenty-first century and a major public health issue for the consumers. This study depicted that food safety practice level was average among majority of the food handlers. Good food safety practice was found better among educated and married person than less educated and unmarried. Majority of the food handlers did not use hand gloves, gown, cap and face mask during preparation. Efforts need to be taken to improve the awareness among the food handlers to adopt safe food practices.

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