International Journal of
Public Health & Safety

Research Article Open Access

Hygienic Practices among Food Handlers in Restaurants of Al-Nohod Locality Market-West Kordofan-Sudan-2017

Abdelrazig A*, Mustafa K and Mohamed M

Department of Medicine, Alneelain University, Khartoum, Sudan

Abstract

Introduction: The principle of food hygiene implies that there should be minimal handling of food items. Food handlers are thus expected to observe proper hygiene and sanitation methods as the chances of food contamination largely depend on their health status and hygiene practices.

Objective: This study was conducted to investigate hygienic practices of food handlers in restaurants of Al-nohod locality market-2017.

Research methodology: This was community based cross sectional study which covered 34 restaurants and 40 food handlers (cookers) with 100% response rate. The data were collected in October 2016, by using standardized administrated questionnaire composed of 36 close-ended questions. Data were analyzed by using Statistical Package for Social Science (SPSS) version 20.

Results: The level of cooking hygienic practices among 40 food handlers, 33.21% of them were good, 47.57% poor and 27.71% bad) was reported. However, regarding personal hygiene practices, neither training in personal hygiene among the study workers has been noticed nor usage of hand gloves. Statistically significant differences were observed by gender, education with personal hygiene practices in terms of; having protective personal clothing (P-value=0.000), having medical fitness card (P-value=0.000) and tobacco consumption (P-value=0.026).

Conclusion: The study identified that the cooking and personal hygienic practices were poor among food handlers. Basic training in personal, cooking and food hygiene is needed for food handlers. This is to ensure that they follow the required rules for proper hygiene and sanitation.

Keywords: Food safety practice; Restaurants; Food handlers; Hygienic practices

Introduction

Food safety issues are as old as mankind and since time immemorial humans have developed strategies to ensure that the food which they eat does not harm them, and unsafe food has been a human health problem since history was first recorded, and many food safety problems encountered today are not new. Although governments all over the world are doing their best to improve the safety of the food supply. Food borne illnesses comprise a broad spectrum of diseases and are responsible for substantial morbidity and mortality worldwide, 2.1 million people died each year from diarrheal diseases and contaminated food contributes to 1.5 billion cases of diarrhea in children each year, resulting in more than three million premature deaths. In developing countries, up to an estimated 70% of cases of diarrheal diseases are associated with the consumption of contaminated foods [1].

Food poisoning casted the USA $152 billion, killed 5,000 people, and sends 325,000 to hospital each year. Around 600 million-or almost 1 in 10 people in the world-fall ill after consuming contaminated food. Of these, 420 000 people die, including 125 000 children under the age of 5, finds WHO report Estimates of the Global Burden of Foodborne Diseases [2].

Approximately 10 to 20% of food-borne disease outbreaks are due to contamination by the food handler. More than 200 food borne diseases could be transmitted through foods. Microorganisms are the root cause of quality and safety Problems. All those who handle food, including farmers, food producers, individuals who work in markets and food service establishments, and other food preparers, have a responsibility to keep food as mush safe as possible [3].

In Sudan, health authorities (MoH) control the food safety problems through implementing many practices as Standard Operating Procedures (SOPs), but still more efforts are needed. In addition, there is real need of studies to assess the present situation of food safety and hygiene practices. It is important to have an understanding of the interaction on prevailing food safety beliefs, knowledge and practices of food handlers in order to minimize foodborne outbreaks, and their existence of large number of food restaurant establishments serving different society sectors (students, workers, visitors etc.) which they haven't minimum hygiene requirements. The overall objective was to investigate hygienic practices of food handlers in restaurants of Al-nohod locality market-2017.

Research Methodology

A community-based descriptive cross sectional study was conducted in Al-nohod Town which is the largest city of West Kordufan

***Corresponding author:** Abdelrazig A, Department of Medicine, Alneelain University, Khartoum, Sudan, Tel: 249920790284; E-mail: kashkosh48@hotmail.com

Received July 10, 2017; **Accepted** July 25, 2017; **Published** July 31, 2017

Citation: Abdelrazig A, Mustafa K, Mohamed M (2017) Hygienic Practices among Food Handlers in Restaurants of Al-Nohod Locality Market-West Kordofan-Sudan-2017. Int J Pub Health Safe 2: 129.

state. The estimated of population overall Al-nohod Locality mounted to 87135 people in the 12000 Km^2, the main economic activity is Agriculture. There are three markets within the locality (Bic market. souk cattle. crops market) [4]. The study population was composed of the local restaurants in Al-Nohod locality market which were 34 in number in addition to 40 male and female food handlers employed in these restaurants (cookers). The food handlers used to work on part-time basis during the day between 8:00 AM to 5:00 PM to serve two meals. Food handlers who no direct contact with food were excluded. Data were collected from 34 restaurants, included only food handler (cooker). Data were collected by face to face interview using standardized administered questionnaire. An ethical approval was obtained from the Institutional Review Board (IRB) of Al-Neelain University. Permissions were requested from the Public Health Office Director of Al-nohod locality and the Ministry of Health West Kordufan State. Informed verbal consent was obtained from each restaurant owner and study participants prior to interview. Data were analyzed by using SPSS version 20.0 for windows [5].

Results

The arithmetic mean age of participants was 34.125 ± 1.130 and ranged 17-53 years. 70.0% of the participants were males and 30.0% were females with 1:2.33 male to female ratio. About 45.0% were single, 55.0% of them were attending primary education (Table 1).

The arithmetic mean of cooking hygienic practices among food handlers was (good=13.28 ± 1.77, poor=19 ± 1.30, and bad=8 ± 1.05) (Table 2).

22.6% of the participants who consumed tobacco were males. Highly statistically significant difference was found between gender and tobacco consumption. (P-value=0.026) (Table 3).

Only male participants had protective personal clothing (57%). highly statistically significant difference was yielded between gender and having protective personal clothing. (P-value=0.000) (Table 4).

Characteristics		Frequency	Percentage
Age in year	Less than 18	1	2.5
	From 19 to 28	12	30.0
	From 29 to 39	13	32.5
	From 40 to 49	7	17.5
	More than 49	7	17.5
	Total	40	100.0
Gender	Male	28	70.0
	Female	12	30.0
	Total	40	100.0
Marital status	Single	18	45.0
	Married	13	32.5
	Divorced	6	15.0
	Widow	3	7.5
	Total	40	100.0
Level of education	Illiterate	3	7.5
	No formal education	7	17.5
	Primary education	22	55.0
	Secondary/high school	6	15.0
	University and above	2	5.0
	Total	40	100.0

Table 1: Background characteristics of the study participants.

Only male participants had currently medical fitness card (62%), there was statistically significant difference between gender and having currently medical fitness card (P-value=0.000) (Table 5).

55.0% of the participants had attended primary education, there was statistically significant difference between level of education and tools used for hands washing (P-value=0.000) (Table 6).

Cooking hygienic practices	Good		Poor		Bad	
	N	%	N	%	N	%
Washing hands before and during food preparation	8	20.0	30	75.0	2	5
Using separate utensils and cutting-boards when preparing food	23	57.5	9	22.5	8	20.0
Separating raw and cooked food in restaurant	13	32.5	14	35.0	13	32.5
checking that meats are cooked thoroughly	5	12.5	33	82.5	2	5.0
Reheating cooked food before give it to consumer	17	42.5	12	30.0	11	27.5
Thawing frozen food in the refrigerator or other cool place	15	37.5	9	22.5	16	40.0
Covering any food after cooking properly	12	30.0	26	65.5	2	50.0
Total of respondent=40	X-=13.28 SD=1.77		X-=19.5 SD=1.30		X-=8 SD=1.05	

Table 2: Levels of cooking hygiene practices among food handlers.

Gender		Tobacco consumption		Total
		Yes	No	
Male	Count	9	19	28
	%	22.6	47.5	70.0
Female	Count	0	12	12
	%	0.0	30	30.0
Total	Count	9	31	40
	%	22.5	77.5	100.0
Chi-Square = 4.977a; df =1; P-value = 0.026				

Table 3: Gender versus tobacco consumption.

Gender		Having currently protective personal clothing		Total
		Yes	No	
Male	Count	23	5	28
	%	57	12.5	70.0
Female	Count	0	12	12
	%	0.0	30	30.0
Total	Count	23	17	40
	%	57.5	42.5	100.0
Chi-Square = 23.193a			df = 1	P-value = 0.000

Table 4: Gender versus having currently protective personal clothing.

Gender		Having currently medical fitness card		Total
		Yes	No	
Male	Count	25	3	28
	%	62	7.5	70.0
Female	Count	0	12	12
	%	0.0	30	30.0
Total	Count	25	15	40
	%	62.5	37.5	100.0
Chi-Square = 28.571a			df = 1	P-value = 0.000

Table 5: Gender versus havening currently medical fitness card.

Level of education		Tolls of washing hands		Total
		Only with water	Water with soap	
Illiterate	Count	3	0	3
	%	7.5	0.0	7.5
No formal education	Count	7	0	7
	%	17.5	0.00%	17.5
Primary education	Count	22	0	22
	%	55.0	0.0	55.0
Secondary/high school	Count	5	1	6
	%	12.5	2.5	15.0
University and above	Count	0	2	2
	%	0.0	5.0	5.0
Total	Count	37	3	40
	%	92.5	7.5	100
Chi-Square = 27.988a		df = 4		P-value = 0.000

Table 6: Level of education *vs.* tools of hands washing.

Discussion

The study showed that 35% of the participants were aged 38 years and above and 32.5% of them were aged between 29-39 years, only 2.5% were under age of 18 years. This is indicative that the majority of the participants were mature with minimal participants who were aged under 18 years. Similar results were reported in Sunyani Municipality that authorities have policy which deliberately does not favor under aged people to vend food in their market, since the authority may consider such as a form of child abuse [6].

70% of the participants in this study were males, which is an indication that food trade is predominantly a job for men. This is contradicting to the results of other studies where 86% of the food handlers were females [7].

More than 50% of the interviewed food handlers attained primary education level while 17.5% of them had no formal education. This may reflect that the participants may be potentially able to understand basic of food safety if they are trained. The result is almost similar to the result reported from Malaysia among food handlers at residential colleges and canteen regarding food safety, where more than half of the respondents (66.2%) were high school educated [1,8].

The study reflects that the highest percentage of participants 55.0% who had attended primary education wash their hands only with water. The level of education of the food handlers on cross tabulation with tools used for hands washing, yielded statistically significant difference (P-value=0.000). This may indicate that persons who had high level of education show better personal hygienic practices [6,9]. The result is tallying with the results of study conducted in Dubai fund which reported that hygiene practices elaborated significant differences observed by sex, education, occupation, monthly income and by training hygiene in terms of washing hand with water. This implies that educational level of food handlers could significantly improve personal practice of food handler [1,6,10].

In this study 62.5% of participants had medical fitness card with statistically significant difference (P-value=0.000) between gender and having currently medical fitness card. This may be related to poor or weak application of follow up, supervision and monitoring system. Food handlers should have a medical examination prior to their employment [11].

Availability of personal protective clothes was encountered for about 60% of the study participants with 10% of them having Hairnet/hat and 50% having apron. However, only male participants had protective personal clothing (57%) with statistically significant difference between gender and having protective personal clothing (P-value=0.000). Food-handlers and restaurant owners may not know about the importance of workwear, and owners may tend to avoid the expenses of providing such clothes [9,12]. Food-handlers in restaurants frequently use aprons in order to keep their clothes clean, but even when aprons were available, food-handlers did not always wear them [13]. Proper work wear is also an important factor for preventing contamination by disease and for giving customers a sense of security and satisfaction [6].

The study results showed that 22.6% of participants who consumed tobacco were males with statistically significant difference by gender (P-value=0.026). Smoking transfers contaminants from mouth to hands and cigarettes emit particles that contribute to food contamination [1,2,9].

Concerning cooking practices among food handlers, our study showed that the overall arithmetic mean of good cooking hygiene practices among food handlers was only about 13.28 ± 1.77, and poor cooking hygiene practices among food handlers 19 ± 1.30 while poor cooking hygiene practices among food handlers 8±1.05. The lack of training in hygienic practices among food handlers are behind such poor and unhygienic practices concerning cooking food [14,15]. This is different from study which conducted in Dubai reported that the overall hygienic practices score had a mean ± SD value of (81.74 ± 5.29) with lowest score for personal hygiene (71.45 ± 7.43) and highest one for cooking (90.05+7.38) [1,3,6,].

Conclusion

Poor health status and poor hygiene practices of food handlers/establishments in Al-nohod locality market, lack of hand gloves warring for food handlers. It is necessary that Public Health Officers should ensure that food handlers undergo medical screening on periodical bases and certificates should be issued to them. Basic training in personal, cooking and food hygiene is needed for food handlers. This is to ensure that they follow the required rules for proper hygiene and sanitation. Health authority in the study area needs to implement strictly regulations and legislation dealing with the food handling hygienic practices.

References

1. ADFCA (2008) Food hygiene for food service.
2. Baş M, Şafak EA, Kıvanç G (2006) The evaluation of food hygiene knowledge, attitudes, and practices of food handlers in food businesses in Turkey. Food Chem17: 317-322.
3. Gizaw Z, Gebrehiwot M, Teka Z (2014) Food safety practice and associated factors of food handlers working in substandard food establishments in gondar town, Northwest Ethiopia. Int J Food Sci Nutr Diet 8: 138-146.
4. http://alnahoodregion.net/portal/
5. Maier M (2016) The regulatory state goes global: EU participation in international food standard-setting by the codex alimentarius commission. SSRN Elect J 6: 44-60.
6. Alsuwaidi AH, Hussein H, Alfaisal W, Elsawaf E (2015) Hygienic practice among food handlers in dubai. Int J Prev Med 1: 101-108.
7. Emmanuel A, Mangai JM, Kayong EA, Afoi BB, Goshit JD, et al. (2015) Innocent assessment of practice of food safety and hygiene among food vendors within jos north local government area of plateau state, Nigeria. Inte J Med Heal Res 1: 83-86.
8. Nee SOI, Sani NA (2011) Assessment of knowledge, attitudes and practices (KAP) among food handlers at residential colleges and canteen regarding food safety. Sains Malaysiana 40: 403-410.

9. Aimmees B, Pragk H (2004) Food workers: Attitudes, interventions, behaviors and barriers in the restaurant environment.

10. Ifeadike CO, Ironkwe OC, Adogu PO, Nnebue CC (2014) Assessment of the food hygiene practices of food handlers in the Federal Capital Territory of Nigeria. Trop J Med Res 17: 10-5.

11. Al-Khatib IA, Al-Mitwalli SM (2009) Food sanitation practices in restaurants of Ramallah and Al-Bireh district of Palestine. East Mediterr Health J 4: 951-955.

12. Nnebue C, Adogu P, Ifeadike C, Ironkwe O (2014) Assessment of the food hygiene practices of food handlers in the federal capital territory of Nigeria. Tro J Med Res 17: 10.

13. Rebellato S, Cholewa S, Chow J, Poon D (2011) Impact of proton: A food handler certification course on food handlers' knowledge, attitudes and behaviors. J Food Saf 32: 129-133.

14. Ifeadike CO, Ironkwe OC, Adogu PO, Nnebue CC (2014) Assessment of the food hygiene practices of food handlers in the Federal Capital Territory of Nigeria. Trop J Med Res 17: 10-5.

15. Sarkodie N, Bempog E, Tetteh O, Saaka A, Moses G (2014) Assessing the level of hygienic practice among Street Food vendors in synyani township. Pak J Nutr 13: 610-615.