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Journal of Nutritional Health & Food Engineering

Assessment of knowledge, attitude and practices of food handlers in nekemtereferral hospital, Wollega, Ethiopia

Abstract

Background: The hospital food plays an important role in the health of many developing countries because it is known that poor personal and environmental hygiene contribute significantly to food contamination and result in food borne diseases. The objective of this study was to assess the knowledge, attitude, and food handling practices in Nekemte Referral Hospital. The study employed both qualitative and quantitative research design.

Methods: This cross-sectional study was conducted in nekemit referral hospital from 15, 2013 to January 15, 2014. A total of 65 study participants were included in the study. Chi square test was used to look for association between variables of interest. P<0.05 is considered for statistically significant difference with adjusted odds ratio with 95% confidence interval. The data were analyzed using SPSS for windows version 15.

Result: The result of the study depicted that medical directors have good theoretical knowledge and attitude on food safety though practical application of their knowledge was seen to be low. The knowledge, attitude and practice of food handlers and sanitarians were found to be low. Moreover, there was a poor kitchen condition; meal for patients was not based on their interest, lack of suitable place for food storage, poor latrine condition and shortage of educated human power in terms of their daily job.

Conclusion: In conclusion, the knowledge attitude and practice regarding food safety at Nekemt hospital is low. Behavioral change communication strategies have to be to improve the knowledge attitude and practice of the hospital staffs for improved patient care in the hospital. Equipped with the appropriate Knowledge, Attitude and Practices of food safety and handling by updating their educational qualification and in-service training or seminar should be given by the Hospital.

Keywords: Practices, Knowledge, Attitude, Food safety, Food handling

Research Article

Volume 8 Issue 1 - 2018

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Received: October 17, 2017 | **Published:** February 23, 2018

Introduction

Due to the changes in food production, handling and preparation techniques as well as eating habits, the fact remains that food is the source for microorganisms that can cause illness. The US Centers for Disease Control and Prevention USDHHS-CDC [1] revealed that the outbreaks of food borne diseases which resulted from foods of animal origin had caused approximately 76 million illness, 325,000 hospitalizations and 5000 deaths each year.

The Hospital food plays an important role in the health of many developing countries because it is known that poor personal and environmental hygiene contribute significantly to food contamination and resultant food borne diseases. Also Hospital foods are perceived to be a major contributory factor, as in most instances, food is prepared in unsanitary conditions by people not trained in proper food handling techniques (WHO). For example, during the outbreak of cholera in Peru in 1991, Hospital food was reported as a possible avenue for its spread. Priority sanitary actions were taken to reinforce Hospital food control programmers.

The town of Nekemt has been particularly positive in taking measures to address Hospital food safety and aims to have all Hospital food safety registered and trained on food hygiene and safety. However, it has been expressed that there is uncertainty as to the effectiveness of the training in improving knowledge and practices about food hygiene and safety (Personal Communication with Hammond, 20 February 2008). Knowledge, attitudes and food handling practices have been recommended as a means of improving food handling practices and thus the safety of food. 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.[2]

According to Howes et al.[3] a study in the USA showed that approximately 97.0% of food borne outbreaks was due to improper food handling practices in Hospital food service fields. Previous

reports indicate that besides poor hand and surface hygiene, lack in personal hygiene amongst food handlers was also one of the most commonly reported practices that gave rise to food borne illness.[4] This shows that if food handlers take serious note on the cleanliness of their hand, body and clothing, this will help in preventing incidence of cross-contamination from occurring.[5]

It is thus imperative that an assessment be conducted to assess what information Hospital food handlers have, in relation to food safety. Such an assessment has potential to identify areas that require strengthening or attention in the training program me with regard to ensuring the safety of Hospital foods, especially for vulnerable groups.

Methods and materials

This study was conducted at Nekemte Referral Hospital which is about 332km South of Addis Ababalocated at 90 6'N latitude and 370 9'E longitude with average altitude of 1950m.a.s.l.

Nekemte Referral Hospital was randomly selected from the list of Hospitals in Oromia region. Qualitative and quantitative research design was employed in this study. Face to face interview was employed to collect quantitative data from the study participant. Observation of the the hospital and its kitchen was supported by the use of customized scoring scheme designed for comparing standards that evaluate kitchen conditions (GKP and GHP) based on the general principles of food safety. All the kitchens of the hospital under study were checked for the status of cleanliness and maintenance of the premises (floors, walls, ceilings, lighting, ventilation, and insect and vermin protection), conditions and cleanliness of kitchen equipment, presence of sanitary facilities and water supply. Repeated three times observations were conducted and notes were recorded each time by the researcher.

Qualitative Method

Interview

Based on variables of study, semi structured interview was prepared. A serious of interview was used to obtain subjective description of the interviewees' own perspectives about the safety and Food Handling Practices in this Hospital .The response of the interviewees' was audio taped (recorded) for later transcription. In addition, the researcher had also have note book on retrospective aspects of variables and the respondents' response.

Observation

Observation of the researcher involved the application of a customized scoring scheme designed for comparing standards that evaluate kitchen conditions (GKP and GHP) based on the General Principles of Food safety. All the kitchens of the hospital under study were checked for the status of cleanliness and maintenance of the premises (floors, walls, ceilings, lighting, ventilation, insect and vermin protection), conditions and cleanliness of kitchen equipment, presence of sanitary facilities and water supply. Repeated three times observations were conducted and notes were recorded each time by the researcher (Table 1).

About 55 Semi structured questionnaire semi structured questionnaire was prepared, pretested and used for this study. Sixty five key respondents were randomly selected from the categories of medical doctors, health officers, and food handlers. Review of secondary data from the hospital and information on commonly occurring food-borne diseases, practices regarding the use of preventive measures against food cross-contamination was explored. The questionnaires that were administered to the food service staff were first developed in English and then translated to Afan Oromo. The researcher visited Hospital principals in order to get permission for the study and for good will of the key informants. Data was manually recorded during observation of the hospital food dispensary system. After questionnaire was finished, the researcher observed the participants.

Table 1 Socio- demographic characteristics of the respondents

Variables	Frequency	Percentage
Gender		
Male	44	67.5
Female	21	32.5
Age		
21-30	21	32.3
31-40	33	50.8
>40	11	16.9
Occupation		
Food handlers	35	53.8
Doctors & HO	30	46.2
Level of education		
Diploma	27	41.5
Degree or above	38	58.5
Work experience		
<1year	9	13.8
>=1	56	76.2

Data analysis procedure

Data collected using the tools were coded and decoded as appropriate for analysis and report. Descriptive statistics were used for data generated on categorical scales. Descriptive statistics was used report the study findings. The statistical analysis of all data was conducted using descriptive statistics (s 15.0 version). Qualitative report of the data was also used as appropriate. For instance, interview data gathered in the form of tape- recoding and verbatim was transcribed the transcript were read and reread in order to have a full understanding of the issue. Then a set of topic headings that describe the issue discussed in the interview was identified. The topic headings were coded according to transcript materials recognized into topic heading groups for reporting. Finally the data were interpreted and discussed to come up with appropriate conclusion and recommendation.

Ethical consideration

Prior to data collection ethical clearance and permission was obtained from Wollega University Ethical Review Committee and sent to East wollega zone, Nekemt Referral Hospital. The aim of the study was briefed for the respondents and the confidentiality of the information obtained was maintained.

Result

To this effect, out of the sampled population of 65 respondents, 30 (41.6%) were clinicians, and the rest 35 (58.4%) were food handlers. The mean age of the respondents was range between 21-40 years. All the study participants had a minimum of diploma educational level. Thirty percent of the clinicians were females and the rest 70% were male. Generally the 46% of the study participants were females. With regard to their work experience in the hospital 30(46.1%) worked for at least one year in the hospital.

Sixty three percent of health professionals in the hospital were not convinced of the fitness of hospital prepared foods for their patients while only 33 % of the food handlers have worriers in light of the safety procedures taken. Both of the study groups do accept that improper waste management with in the hospital could pose health threats for the patients. Around half of the health staffs of the hospital have concerns on the waste disposal and hygienic practices of the hospital are up to the standard. All the statistical tests depicted statistically significant difference in all the three indicators measured for the health staffs and food handlers in the hospital, $p<0.05$.

Twenty percent of food handler's didn't know if contaminated food could result in food born disease. Only 60% of the health professionals reported to share and arrange health information sharing sessions in the hospital while only 6(17%) of food handlers agree that health professionals share important safety measures in the hospital, $P<0.05$). Thirty one percent of food handlers in the hospital agree that health professionals order the right food for their patients while all of clinicians reported that they order the right food for their patients. Regarding capacity building for the food handlers, 2% of hospital health professionals reported that trainings on food handling and HACPP was carried out while all of the food handlers reported complete absence of efforts to improve the capacity and skills of food handlers in managing food prepared for clients visiting hospitals and also patients admitted hospital. Study respondents reported that there is limited coordination and communication among the hospital staffs. All of the study participants reported that they are willing to follow food safety measure for better food safety for the patients admitted to hospitals and hospital staffs (Table 2).

Table 2 Response with regards to food handler's knowledge

Variable	Food handlers N(%)	Clinicians N(%)	P-Value
Contaminated food causes food born disease			0
Yes	28	30	
No	7	0	
Weather Doctors are committed to share their experiences			0.02
Yes	6	18	
No	29	12	
Team Work			0.67
Yes	8	16	
No	27	14	
Doctors order appropriate food for patients			0
Yes	11	30	
No	24	0	
Presence of Food handlers training & HACCP implementation			
Yes	0	2	
No	35	28	
Food prepared is acceptable for consumption			0
Yes	24	11	
No	11	19	
Improper waste disposal leads to contamination of food			0.02
Yes	24	30	
No	11	0	
Methods used for disposals of wastes was inappropriate			0.04
Yes	13	19	
No	22	11	
Washing hand before and after contact with food is important			0
Yes	28	30	
No	7	0	

Twenty three percent of hospital clinicians reported that food prepared for their clients not fit for their clients. Clinical staffs of the hospital also reported that there is low desire form the admitted patients to eat hospital prepared foods which is an indicative of issues regarding food prepared in the hospital.

The perception of food handlers regarding the food safety and handling practice showed that the food offered to patients admitted to the hospital to be somehow unsatisfactory.

Result from Observation

Three repeated observations were conducted to generate the following information form food storage warehouse, cooking and serving environment and also the general hospital setting. The hospital kitchen was found to be in bad shape in all of the three repeated visits. The walls and ceilings were with visible dust, sooth, holes and cracks. There was no adequate lighting, no ventilation system and the cooking environment was infested with insects, mainly flies and cockroaches. The equipment used for cooking food was easily cleanable though some of the cooking utensils were found to be unclean at the time of visit. The hospital did not use drying racks for the cleaned and sanitized equipment and it doesn't store the utensils under conditions which prevent contamination. All the food handlers of the hospital wore appropriate clothing in the kitchen but none had clean clothing during observation. Five of the food handlers were wearing different jewelries. Food handlers of the hospitals had short trimmed and clean nails except two females. In addition, three of them had discharges from their nose and eyes whereas none of them had visible skin rush, boil, cut or wound at the time of visit.

NekemteReferral Hospitals had no appropriate refuse container for solid as well as liquid wastes. Overfilling of waste containers with solid waste was observed and waste receptacles in the hospital did not have a proper covering. Stagnant liquid waste was observed in the hospital environment.

Perishable food preservation techniques like refrigeration were not available in the hospital for vegetables. Kitchens were observed overloaded with perishable and non-perishable food items. Cooked and raw foods were kept together. A single small refrigerator was observed which was used for storage of meat. There was no observed chemical contaminate to the stored food in the kitchen.

Source of water in the hospital was privately installed from municipal supply as well as it uses water stored in tankers in times of shortage of water supply from municipality. The hospital has cemented pit latrine with no water. The latrines were not clean and comfortable to use at the time of the visits and flies infestation was observed and no hand washing utensils were observed near the toilet in the hospital.

Doctors and Hos Knowledge on the topic of food safety in the Hospital Case in point,(61.53%) agreed that Hospital foods follow health requirements prosecute achievement while (23.09%) disagree that Hospital foods do not follow health requirements prosecuted and (15.38%) of the respondents were undecided. Moreover, the researcher interviewed all the doctors and HOs and health officers and they responded that Hospital food mostly does not follow minimum health requirements because many patients dislike eating daily food. With regard to the Hospital's license, (34%) responded that it has no a valid license whereas (66%) responded that hospital has valid license on food safety.

Farther more, all the interviewees replied that they didn't know whether the Hospital has a valid license. As far as patients complain regarding their food service is concerned, the respondents (45.7%) replied that they can complain sometimes whereas (54.2%) replied that they were uncertain about it. Beyond, the researcher interviewed the interviewees and they replied that patients can complain for their food service every day. In addition, with regard to the types of guide lines developed (100%) of the respondents replied that there was no any guidelines developed in this Hospital concerning food safety, however the induction. Results of the data collected all the way through chi-square computed shown that, P-value=0.000, in which ''p'' is less than alpha at significance level of 0.05 with one to four degree of freedom. Therefore, there is no significance association among the three groups. The difference may occurred due to doctors and HOs respondents lack commitment to share their respective experiences for the employees of the hospital and as well as for patients about food safety and handling practices in order to facilitate quality services for patients.

It was about Medical directors and HOs feeling on subordinate time management in relation to food safety in the Hospital. Thus, (33%) replied that patients and sanitarians in the Hospital accomplish their daily routine on time whereas (67%) disagree that they didn't accomplish their daily routine. Regarding doctors and Hos encouragement patients to get clean and safety food, (62%) of respondents replied that patients in the Hospital sometimes get clean and safety food and (38%) responded that they always get clean and safety food. This implies that, there is a problem of getting clean and safety food according to patients' needs that also confirmed through the responses of the interviewers and continuous observation of the researcher. Similarly, (13%) responded that the condition under which food is prepared daily was always attractive while (23%) of the respondents answered that the frequency of the attractiveness of food safety was sometimes and (64 %) of them were said that there was no attractiveness at all. In addition, the researcher cross checked it with the interview and all the respondents replied that the conditions under which food prepared was not attractive.

Regarding the attitude of doctors and Hos on food safety and food handling of practices of food handlers results of the data collected through chi-square computed shown that, P-value=0.000, in which ''p'' is less than alpha at significance level of 0.05 with two to four degree of freedom. Therefore, there is no significance association among the three groups. The difference may occur due to doctors and HOs lack style management on food safety and handling practices of food handlers.

Discussion

In our study majority of food handlers reported hand washing following during food preparation which is in agreement with study from Nigeria. Hand-washing during food preparation might be affected by other factors such as time pressure, lack of knowledge concerning the risks of not washing hands properly or because they did not feel to wash their hands by working with the same type of

food (eg one employee for meat, other for fish, other for salads and desserts). It has been observed in other studies that time pressure was restraining to actual hand-washing.[6,7]

This study depicted that 90% of the respondents didn't take formal training on food handling. In Sudan, it was reported that 24% of food handlers were certified and 0% in India. Likewise, the large proportion of untrained (33%) food handlers in this study is concerning as it implies, that despite a regulation on training in existence, food handlers didn't get any training. The findings of this study are slightly better than the findings of two studies conducted in Nigeria that investigated the food safety knowledge and practices of food handlers in two different geographical locations. Chukuezi reported that only 5% of food handlers had been exposed to formal training.

None of the hospital food handlers have ever heard about HACCP and 90% of them think that they need more information on HACCP and food safety practices in hospitals. Previous studies suggest that knowledge alone is an insufficient tool to promote food safety and handling practices behaviors since some studies have shown that there were no differences between the staff who attended an educational course and those who did not.[8] In other words, designing food safety training as an isolated domain with the sole purpose of providing information and producing certificated personnel is unlikely to result in significant changes in food safety and handling practices. There is, therefore a need for alternative educational strategies, such as those based on motivational health education and promotion models.[8] In other words, designing food safety training as an isolated domain with the sole purpose of providing information and producing certificated personnel is unlikely to result in significant changes in food safety and handling practices. There is, therefore a need for alternative educational strategies, such as those based on motivational health education and promotion models.[8]

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Conclusion

In conclusion the general knowledge and attitude of the cllinnical hospital staffs was seen to be positive but the practice aspect was seen to suffer. Nekemte referral Hospital didn't fulfill the food safety requirements suggested by food safety guidline. There was poor hygienic practice from food handlers, poor kitchen conditions, substandard food storage system, poor latrine condition and shortage of well qualified food handlers with required education. Inservice training for capacity building for food handlers was seen to be totally forgotten by the hospital administration. Apropriate capacity building, monitoring and evaluation system has to be initiated for better and safe food handling practice in hospital.

Acknowledgment

Author declares no acknowledgment.

Conflict of interest

Author declares no conflict of interest.

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Citation: Gemeda TE, Asayehu TT, Abdisa M, Fekadu H. Assessment of knowledge, attitude and practices of food handlers in nekemtereferral hospital, Wollega, Ethiopia. *J Nutr Health Food Eng.* 2018;8(1): 00262. DOI: 10.15406/jnhfe.2018.08.00262