European Journal of Hospitality and Tourism Research
Vol.3, No.2, pp.1-9, July 2016
Published by European Centre for Research Training and Development UK (www.eajournals.org)

ASSESSING THE HYGIENIC STATE OF HOSPITAL KITCHENS IN THE SEKONDI - TAKORADI METROPOLIS OF GHANA.

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ABSTRACT: *The hygienic state of the kitchen where foods are cooked as well as the food handlers have an impact on either causing food poisoning or otherwise. Thus, leading to the conduction of the study. The study was a descriptive cross-sectional survey design with the objectives of finding out food handlers' knowledge on hygiene; assessing the personal, food and kitchen hygiene practices of food handlers in hospitals; and assessing ways in which foods are packaged and served to patient's hospitals. Fifty (50) kitchen staff were chosen through a purposive sampling technique and structured questionnaire was used to collect data. The data was analyzed using frequencies, percentages, charts and tables. It was found out that the respondents understood the meaning of hygiene and could state some examples. Though most of the hospitals' kitchen staff were found to comply with hygienic measures, a few were doing the contrary which exposes the foods they prepare to contaminations. The kitchens' packaging and delivery of food to patients were quite hygienic. However, their means of disposing off waste left much to be desired. Finally, it was recommended that the hospitals' authorities should increase supervision over the kitchens, organize periodic training on all aspects of hygiene and food safety for staff members of the kitchens and take stringent measures against kitchen staff members who do not comply with the appropriate hygienic regulations.*

KEYWORDS: Food Contamination. Food Safety, Hospital, Hospitality, Hygiene, Kitchen.

INTRODUCTION

As humans eat, breathe, work and move about in order to achieve their socio-economic aspirations the body is bound to break down at a point in time and the most appropriate thing to do for its restoration is to consult a medical doctor or a physician. This consultation often takes place at a health facility, preferably, a hospital. Hospitals offer a lot of services such as treatment of illnesses, diagnosis, care, counselling, education, etc. to the general public coupled with the burden of competing with other hospitals for employees and patients (C&T Design & Equipment, 2015). In view of this, some hospitals have incorporated some food service facilities into their operations as a way to satisfying hospital staff as well as patients on admission and their visitors. As C&T Design & Equipment (2015) asserted, to achieve satisfaction in this sense there is the need to have a good deal of variety and quality in the foods served. The preparation of the foods for these categories of people lies heavily on the hospital kitchens which prepare tremendous amount of food for distribution among patients, the hospital employees and visitors of patients.

The processes of handling and preparing food at the hospital for patients are very crucial in order to prevent infections and outbreak of diseases. This becomes more imperative in the hospital kitchen environment where the tendency for infection is high due to the presence of patients suffering from various sicknesses and infections (Lazarević et al., 2013). Ironically,

ISSN 2054 - 6424(Print), ISSN 2054 - 6432(Online)

there are evidences that, rather, the hospital kitchens as well as their kitchen staff members are those whose hygienic conditions are neglected (Lazarević et al., 2013; Pollock & Whitty, 1990; Cooper, 2013). A survey conducted in the United Kingdom to assess the hygienic conditions of the kitchens of some selected hospitals had quite some bizarre findings. The study revealed that there were breaches of food hygiene laws because kitchen staff were not washing their hands, foods being kept at wrong temperatures and not stored appropriately as well as remnants of foods or meals getting stuck in utensils and equipment (Campbell, 2007).

These unhygienic practices at the hospital kitchens can be detrimental to consumers of foods produced by such food handlers under such conditions. The hospital kitchens are, rather, expected to have the cleanest environment as possible since they take care of people who are trying to recover from serious illness and are at their most vulnerable state (C&T Design & Equipment, 2015). Some authors (Lazarević et al., 2013; Pollock & Whitty, 1990); Cooper, 2013; Campbell, 2007) have been convinced of the evidence that a substantial proportion of food borne disease is attributable to improper food preparation practices in hospitals. Thus, stringent measures must be put in place to curtail such malpractices. However, one area where it has been difficult to legislate for is food hygiene practice in the hospital kitchen. It is therefore very vital that continuous and necessary steps are taken to ensure that guidelines and good practices are adhered to in preparing and handling food in hospital kitchens for patients and other consumers as a whole.

The hospital kitchen is a place where meals are prepared and served to patients who are detained in the hospital and is therefore expected to provide nutritious and wholesome meals for the hospitals patients which means that the environment where meals are prepared play a very important role in the provision of safe food. However, some hospital kitchens in the Takoradi sub-metro are ill-equipped and this affects the provision of safe and wholesome meals to their patients. The food handlers in the hospital kitchens also compromise on food safety practices, in that they sometimes wear un- prescribed uniforms at work and other unhygienic practices done by these food handlers. In the light of the above, this researcher sought to assess the hygienic state of hospital kitchens in the Sekondi-Takoradi Metropolis.

The purpose of the study was to determine food handler's knowledge on hygiene, assess personal, food and kitchen hygiene practices of food handlers in hospitals and also to assess ways in which foods are packaged and served to patients. This study would help food handlers in hospital kitchen plan and practice good hygienic practices in the various hospitals. The study would also add to the body of literature on topics relating to personal, food and kitchen hygiene.

METHODS

The study employed a descriptive cross-sectional survey design which sought to find out and describe the state of a cross-section of the hospital kitchens in the Sekondi-Takoradi Metropolis. The target population for the study was all the employees working at the kitchens of the selected hospitals in the Sekondi-Takoradi Metropolis irrespective of their age, gender or position. The study used the Purposive Sampling technique, a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher to select the sample of fifty (50) kitchen staff for the study from the hospitals. The questionnaire was used to collect data for the study. The primary data

ISSN 2054 - 6424(Print), ISSN 2054 - 6432(Online)

resulting from the survey were analysed using both descriptive and inferential statistics. The data were screened for incomplete entries and errors. The statistical tools that were specifically applied in analysing the data were frequencies, percentages and averages using the version 17 of the SPSS (Statistical Package for the Social Sciences), statistics computer software.

RESULTS AND DISCUSSIONS

Demographic Characteristics

The demographic characteristics of the respondents such as their gender, name of hospital, age, occupation, and their total number of kitchen staff are presented. In presenting the gender distribution of the respondents, 32 out of 50 respondents (representing 64%) were females and the rest (about 36%) were males. Also, with varying age groups of the respondents ranging from 19 to 40 years and above, it can be observed that about 64% of the respondents forming the majority were aged between 20 - 29 years. With only a few (about 4%) being either 40 years or above, about 24% were belonged to the 30 - 34 years' age group whilst 8% were teenagers. This indicates that the hospital kitchen staffs were mostly young ladies. Furthermore, the table indicates that a little over three-quarters (76%) of the hospital kitchen staffs were working as cooks. Also, close to a quarter (about 24%) of them worked as either chefs (12%) or cleaners (12%). The study shows that about 48% of the respondents indicated that their kitchen staff strength was between 1 and 5 people whilst about 52% reported that their hospital kitchen employed between 6 and 10 employees. These imply that the hospitals employ a maximum of 10 kitchen staff members who are mostly cooks.

Food Handlers' Knowledge on Hygiene

As part of the study's objectives, the study sought to assess the knowledge base of the food handlers regarding hygiene in totality. The result is displayed in Figure 1 below. Regarding the kitchen staff knowledge of what hygiene is, Figure 1 depicts that close to one-third of the kitchen staff members understood hygiene as keeping the environment clean to prevent diseases (about 32%) or keeping oneself and the environment clean to prevent diseases (about 32%). Also, about a quarter (22.7%) of them understood hygiene as the practices of preventing diseases. A few (9.09%), moreover, understood hygiene as keeping oneself, his or her food and the environment clean to prevent diseases. This implies that almost all of the respondents have an appreciable knowledge of what hygiene is and support WHO (2014) definition of hygiene which refers it to conditions and practices that help to maintain health and prevent the spread of diseases.

The issue of hygiene is not about maintaining good health but also concerns the improvement of already existing conditions or practices as the Centers for Disease Control and Prevention refers to hygiene as behaviors that can improve cleanliness and lead to good health, such as frequent hand washing, face washing, and bathing with soap and water (CDC, 2015).

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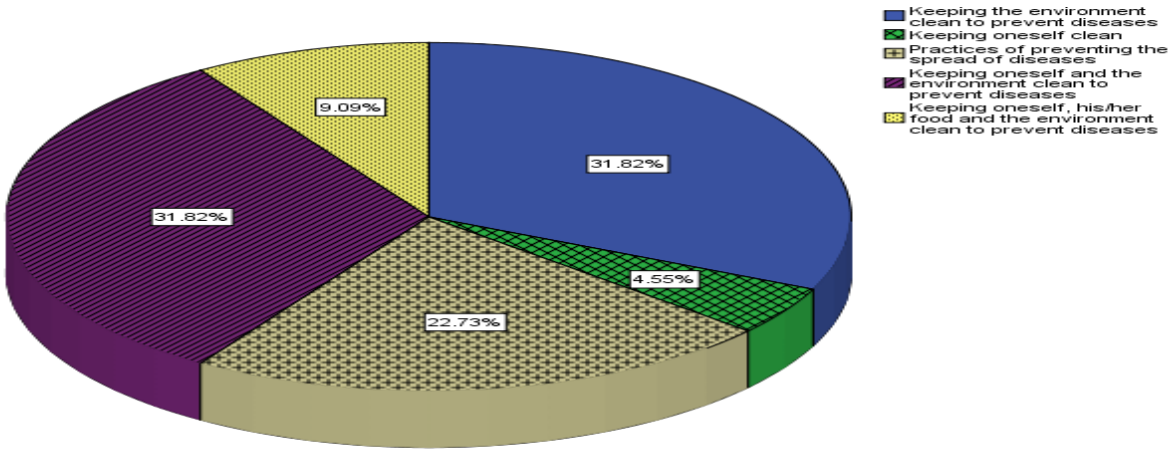

Figure 1: Respondents' understanding of hygiene

In assessing the respondents' knowledge on basic hygienic practices, the respondents were asked if they were observing some common hygienic practices in place to guide them in carrying out their work and to list a maximum of any three of them that they knew (see Table 1).

Table 1: Common hygienic practices

Regulations	Yes	
	Count	Percentage
Wear prescribed uniform	20	40.0
Cover hair whiles cooking	28	56.0
Keep fingernails short and unpolished	28	56.0
Wash hands before cooking or touching anything	26	52.0
Clean equipment as you work	14	28.0
Do not talk whiles cooking	6	12.0
Keep floor and premises clean and dry	8	16.0
Do not run in the kitchen	4	8.0
Do not expose food to the environment	4	8.0
Other	10	20.0

Percentages and totals are based on respondents.

It can be seen from Table 1 that the three most common hygiene regulations that the respondents know are covering of hair whiles cooking, keeping fingernails short and unpolished and washing hands before cooking or touching anything as stipulated by the FSA (2013) guidelines. Over half of the respondents reported that they knew that they had to cover their hairs whiles cooking (56%), keep their fingernails short and unpolished (56%) and also to wash their hands before cooking or touching anything (52%). A good number of them also reported that they had to wear prescribed uniform (40%), clean their equipment as they work (28%), keep the floor of the kitchen as well as the kitchen premises clean and dry (16%) and to be quiet whiles working (12%).

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On the issue of personal, food and kitchen hygiene practices of food handlers in hospital compliance, the study revealed that 94% constituting majority of the respondents interviewed responded to the issues of having prescribed uniform as well as working with short and unpolished nails. All (100%) of them reported that they had prescribed uniforms. Also, though most (about 94%) of them reported that they do not work with short and unpolished nails a few of them (about 6%), however, indicated that they do so. This implies that some hospital kitchen staff are not adhering to the hygienic practices and work with long and polished fingernails. This practice can be detrimental to the health of patients as well as anyone who consumes food from such a cook as Lazarević et al. (2013) explained that this could causes nosocomial infections and so it is necessary to maintain a high level of hygiene in the hospital settings.

Table 2: Reasons for hair covering whiles cooking

Reasons	Frequency	Percent
Avoid hair from falling into food	20	47.6
Prevent contamination	16	38.1
Prevent diseases	6	14.3
Total	**42**	**100.0**

It was observed that 42 out of the 45 respondents indicated that they cover their hair whilst cooking. Out of these, about 48% reported that they cover their hair to avoid hair from falling into the food they cook. A little over one-third (about 38%) also reported that they do so to prevent the food from getting contaminated whilst the rest indicated that they do so to prevent diseases. Though they responded differently, the bottom line to their reasons is that they wanted to keep the food hygienic. This prevents food poisoning which WHO (2014) stated that comes from physical objects such as glass, wood, hair, jewelry, insects and metal which somehow fall into food. To support this finding, the FSA (2013) added that staffs should keep their hair tied back and wear a suitable head covering, e.g. hat or hairnet, when preparing food.

Food Safety Practices

Regarding the issue of kitchen staff washing their hands before cooking, it was found out the 42 out of the 45 respondents (representing about 93%) reported that they wash their hands before they start cooking. It can be seen that from Table 4.5 about 90% of the respondents indicated that before serving food they keep it in a food warmer. Though food handlers are allowed to have food outside temperature control for limited periods of time to allow them to prepare, transport, store, display and serve food, as long as this does not cause a risk to health, the FSA (2013) food safety guidelines, however, stated that food must not be kept at temperatures that might cause a risk to health.

Also about 10% of them indicated that they keep their food either in a refrigerator (about 5%) or in a cool dry place (about 5%). Though almost all the respondents keep their food in a food warmer a few keep their food in refrigerators or in a cool dry place which does not make the food safe. However, the practice of washing hands before cooking is very encouraging as Paterson (2014) stated that hands must be washed prior to handling food.

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Table 3: Food Safety Practices by Respondents Before and After Cooking

Storage for cooked food before serving	Frequency	Percent
Refrigerator	2	4.8
Cool dry place	2	4.8
Food warmer	38	90.4
Total	**42**	**100.0**

Maintenance of Kitchen Equipment

In addition to food safety practices before and after cooking, the study sought to find out how the cooking equipment were cleaned and maintained since that also affects the safety of food by introducing bacteria and chemicals into the food. It can be observed from Table 4 that 42 out of the 45 respondents (about 93%) reported they wash their equipment, crockery and utensils immediately after use. Of these, about 81% indicated that they wash their equipment in warm soapy water whilst about 19% indicated that they wash their cooking equipment in either ordinary water (about 5%) or by other means (about 14%). It can also be seen that about 62% keep their washed equipment on the shelves whilst the rest keep their washed equipment either in a basin (about 14%) or basket (about 24%).

Table 4: Maintenance of Kitchen Equipment

How do you store your equipment?	Washing of Equipment After Use						Total	
	In a warm soapy water		Ordinary water		Others			
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Shelves	22	52.4	0	0.0	4	9.5	26	61.9
Basin	4	9.5	0	0.0	2	4.8	6	14.3
Basket	8	19.0	2	4.8	0	0.0	10	23.8
Total	34	81.0	2	4.8	6	14.3	42	100.0

Regarding these practices, over half of the kitchen staff members (about 52%) indicated that they wash their equipment immediately after use in warm soapy water and store them on shelves. However, there were a few whose practices in washing equipment were very dangerous as they wash equipment with only ordinary water. This is against the rule of kitchen hygiene which states that all plates, eating and cooking utensils as well as equipment must be washed under the right temperature (Kempsey Shire Council, 2011). The FSA (2013) also stated that kitchens must have an adequate supply of hot and cold water and adequate facilities, where necessary, for cleaning, disinfecting and storing utensils and equipment and adding that these facilities have to be made of corrosion-resistant materials, and be easy to clean.

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Packaging Food for Patients

The means of packaging could be sources of contamination for food during its packaging. Thus, the respondents were asked to indicate the means by which they package for patients at the wards. (see Table 5).

Table 5: Means of packaging food for patients in the wards

Packaging	Frequency	Percent
Food warmer	12	28.6
Bowl with cover	24	57.1
Take-away pack	6	14.3
Total	42	100.0

Table 5 reveals that the hospital kitchen staff members keep their foods to patients at the ward in food warmer, bowl with cover and take-away packs. It can be seen from Table 5 that about 57% reported they serve food to their patients at their respective wards in a bowl with cover. A little over a quarter (about 29%) of them also reported that they serve the patients from food warmers whilst a few (about 14%) indicated that they serve patients in take-away packs. Packaging food in food warmers and in bowls with lids ensures that the temperature of the food to the patients is maintained to avoid being contaminated by the surrounding environment (FSA, 2013).

Frequency of Serving Food and Means of Food Delivery

Furthermore, the study also sought to find out how frequent the hospitals serve food to patients and how they package the food for the patients. The result of the analysis is presented in Table 6

Table 6; Frequency of Serving Food and Means of Food Delivery to Patients in the Ward

	Food Delivery Method							
	In the trolley		On a tray		In a basket		Total	
Frequency of serving food	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Two times daily	2	4.8	4	9.5	2	4.8	8	19.1
Three times daily	22	52.3	12	28.6	0	0.0	34	80.9
Total	24	57.1	16	38.1	2	4.8	42	100.0

It can be observed from Table 4.8 that 34 out of the 42 respondents (representing about 81%) reported they serve food to their patients at their respective wards thrice a day whilst about 19% indicated that they serve patients food, two times a day. It can also be seen that about 81% of the respondents further indicated that they deliver patients food to them either on a trolley (about 52%) or on a tray (about 29%). This implies that the hospitals mostly provide their patients food on three occasions within a day on either a trolley or a tray. This finding

ISSN 2054 - 6424(Print), ISSN 2054 - 6432(Online)

supports that of Jackson (1997) who stated in his work that the method of food delivery of the cook-chill systems of food productions mostly deliver foods through food service employees using trays whereas the traditional food production systems tend to use nursing personnel for delivery by trolley.

Means of Disposing off Waste

As the means of disposing off waste can impact on the hygienic state of the kitchen, the respondents were asked how they dispose off their waste from the kitchen. About 57% of the respondents reported that they use refuse dump as their means of disposing off the waste they generate from cooking whiles 43% indicated that they use various kinds of dust bins to dispose off their waste. This points to the fact that most of the respondents do not dispose their waste properly. This finding is contrary to that of FSA (2013) which stated that food handlers must put food waste and other rubbish in containers that can be closed and these containers must be of appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect.

Conclusions of the Study

This section of the chapter presents the conclusions of the study based on the summary of the findings from the study. Based on the findings of the results, the study first concludes that the respondents understood the meaning of hygiene and were even able to state some of the regulations governing hygiene. The study also found out that though most of the of the members of the hospitals' kitchen staffs complied with hygienic measures such as working with short and unpolished fingernails, covering hairs whilst cooking, wearing an appropriate attire for cooking, keeping cooked food in food warmer, washing equipment, crockery and utensils immediately after use in warm soapy water and keeping them on shelves, cleaning the kitchens frequently, etc. a few of them were not adhering to these measures and were doing the contrary which exposes the foods they prepare to contaminations which results in food poisoning and ill-health. The hospital kitchens' packaging as well as delivery of food to patients was quite hygienic. However, their means of disposing off wastes were not so much admirable.

Recommendations

From the findings and the conclusions of the study, it is recommended that:

1. The authorities of the hospitals should increase supervision over the hospital kitchens. Regular visits to the kitchens for supervision would expose staff members who are in the habit of not following hygiene regulations.

2. The hospital authorities should also organize periodic training on all aspects of hygiene and food safety for staff members of the kitchens. This would enrich their knowledge and refresh their memories on the practices of hygiene.

3. Stringent measures should be taken against kitchen staff members who do not comply with the appropriate hygienic regulations. This would deter other kitchen staff who would be nursing such thoughts.

4. Kitchen staff members should conduct themselves professionally as well as keep themselves abreast with the practices of hygiene.

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5. There should be a proper means of disposing off wastes from the hospital kitchens.

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ISSN 2054 - 6424(Print), ISSN 2054 - 6432(Online)