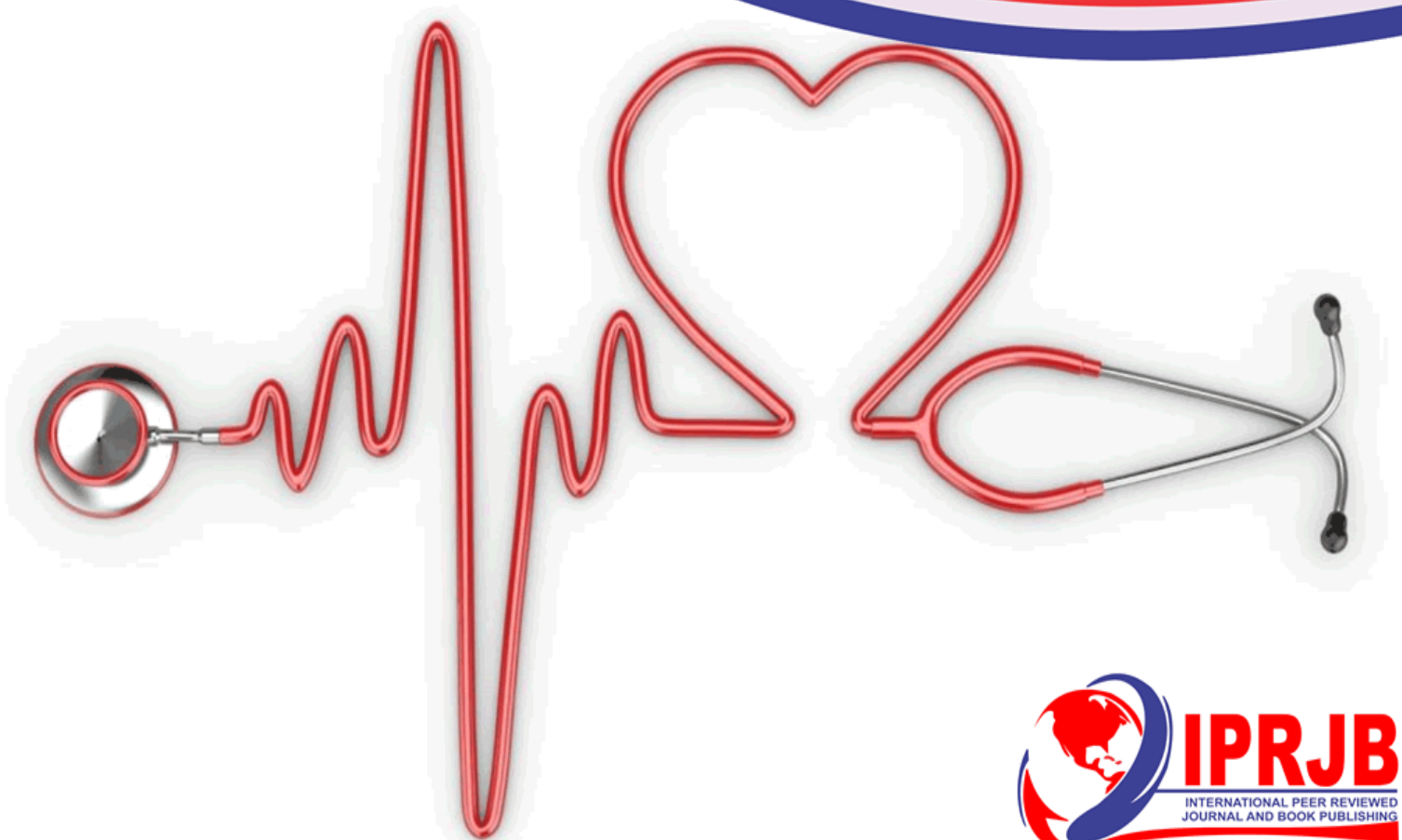


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FOOD HYGIENE PRACTICES AMONG FOOD HANDLERS IN SELECTED RESTAURANTS HAWLE WADAG DISTRICT IN BANADIR REGION MOGADISHU-SOMALIA

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Abstract

Purpose: The aim of the study was to assess food hygiene practices among food handlers in restaurants located Hawle Wadag District in Banadir region Mogadishu-Somalia.

Methods: This study was community based cross-sectional study and the data were collected from 30 cookers from 30 restaurants in Howlwadag District using 36 closed ended, administrated questionnaire between November and December 2019. Data were analyzed by using Statistical Package for Social Science (SPSS) version 20.

Results: The findings indicated that two third of the respondents 20(66%) were illiterate and all the respondents of the study did not attend training course of food hygiene before they started work, they were not aware that the diseases could be transmitted through contaminated food. The study also indicated that the majority of the respondents 23(76%) reported they washed their hands only at the beginning of the day, which means more than two-third of the respondents reported that they only make hand washing when they start at the work. Food handlers in restaurants often use aprons to keep their clothes clean, but the study participants did not always use them even when aprons were available. The study also indicated that 25(83%) of the respondents had no medical fitness card and the owners of the restaurant didn't care about the health of food handlers whether they were ill-health or not which made it possible of food handlers to be carriers of communicable disease and the disease could be transmitted to other people,

Unique Contribution to Theory, Practice and Policy: Public Health authorities need to ensure that food handlers receive medical screening on regular bases, and they should establish and enforces rules and regulations dealing with hygienic practices in the handling of food. Food handlers need basic training in cooking and food hygiene. Restaurant managers will constantly monitor the hygienic condition. Food handlers give personal protective equipment to prevent any problems of food handlers themselves and the community such as diseases transmission such Hepatitis B virus, typhoid and etc. Requirements for recruiting food handlers should add medical examination prove or health ID in the last six months.

Keywords: *Food Hygiene, Food Handlers, Practices*

1.0 INTRODUCTION

Improper handling of food by handlers was responsible for foodborne outbreaks around the world and is commonly reported as a factor contributing to foodborne outbreaks. For controlling the production process and providing safe food, enforcing effective strategies for evaluating food production and preventing contamination is essential. From this viewpoint, developing and creating a food safety culture in which food handlers produce and provide food safely, as well as understanding and managing the associated risks associated with food handling, is important (Aquad et al., 2019)

Food handlers have an important role to play in preventing outbreaks of foodborne disease. Food handlers' education and training is seen as one of the key strategies for increasing awareness and food safety practices (Zulkifly, Salleh, Hanafiah, & Jamaluddin, 2013). It is very clear that to avoid any negative effects on foodborne disease, it is important to have a good knowledge of food safety. There have been mistakes in human handling. Responsible, for example, for most outbreaks of food poisoning; hepatitis A virus can be transmitted by unwashed hands of food handlers who are themselves infected. Education is important for improving food handlers' awareness; however, increased knowledge of food safety does not always result in positive changes in food handling attitudes (Zulkifly, Salleh, Hanafiah, & Jamaluddin, 2013). The managers of the food. Therefore, if basic food safety information is to be at least clearly established, it must be assured that it can recognize relative risks and make informed decisions on food handling practices. Identifying food service employees' skills, attitudes and practices is important to ensure food safety in retail food service operations and to prevent foodborne illnesses that are public health issues. Furthermore, due to their lack of information on microbiological food hazards, refrigerator temperature ranges, cross-contamination and personal hygiene, several studies have established the need for training and training of food handlers in public hygiene (Zulkifly, Salleh, Hanafiah, & Jamaluddin, 2013).

Food safety issues are as old as human beings, and since time immemorial people, have established methods to ensure that the food they eat does not affect them, so contaminated food has been a concern for human health since history was first documented, and many of today's food safety concerns are not fresh. Food-borne diseases include a variety of diseases, and every year, 2.1 million people died from diarrheal diseases and contaminated food led to 1.5 billion cases of childhood diarrhea, leading to more than three million premature deaths. Ingestion of diarrheal diseases in developing countries is associated with up to an estimated 70 percent of cases. Food poisoning caused contaminated food to destroy \$152 billion.

Every year, 5,000 people sent 325,000 to the hospital. Roughly 600 million or roughly 1 in 10 people are ill in the world-fall after eating contaminated food (Kordofan-sudan-, 2017). According to the WHO report (2018), 420,000 people are killed, including 125,000 children under the age of 5 years. Burden of the diseases caused by food (Kordofan-sudan-, 2017). Approximately 10 to 20 percent of food-borne disease cases are caused by contact with food handlers. Over 200 food-borne diseases can be transmitted by berries. Microorganisms are the root cause of quality and safety issues. All those who handle food, including farmers, food

producers, consumer and food workers, It is the responsibility of service establishments and other food preparations to keep food as safe as possible (Kordofan-sudan-, 2017)

About 1 in 10 people fall ill after consuming contaminated food and 420,000 die every year in an estimated 600 million world population (World Health Organization, 2018). The World Health Organization has estimated that children under 5 years of age are responsible for 40% of the burden of foodborne disease, with 125,000 deaths annually. The implication could be. There are Food Managers who lack adequate food hygiene knowledge and are therefore unable to practice what they do not understand. Food hygiene is one of three forms of hygiene, whereas environmental and personal hygiene are the other. Food hygiene is a deliberate effort to protect food from contamination of the atmosphere and the safety of the public. Nutrition hygiene described as Food handlers play a major role in the passive transfer of pathogens from infected sources, such as the transmission of pathogens from raw meat to ready-to-eat food, through all the practical steps involved in keeping food safe and healthy throughout all stages of production. Food handlers can bear other human-specific food-borne pathogens including Hepatitis A species, typhoidal salmonella, Staphylococcus aureus and Shigella in hands, mouth, skin and hair(Odo & Onoh, 2018)

Based on epidemiological data from recent foodborne disease outbreaks, these risk factors provide evidence to support the Food Code's enforceable standards for inspection of food service operations. The prevalence of foodborne pathogens in Somalia has been shown in numerous studies. 11% of urban children with diarrhea in Somalia, for example, have screened positively. Over the past two decades, the World Health Organization (WHO) has published several press releases of cholera outbreaks in many parts of Somalia. Cholera has been reported to be endemic in Somalia, posing threats to annual outbreaks between December and May (Somalia's dry season). Most of these outbreaks arise from lack of access to water, poor food quality and home hygiene(DIRSECIU, 2017)

Five factors related to the outbreak of these diseases were also reported by the World Health Organization (WHO, 2011), including unhygienic practices and insufficient hygiene by food handlers, inadequate cooking methods, and improper storage without taking into account temperature specifications, cross-contamination, and food supply from unsafe places(WHO, 2011). It is the responsibility of food handlers involved in the production and preparation of food. Food handling includes all steps of food storage, preparation and preservation until final consumption has been achieved. In addition, studies have confirmed the existence of pathogenic microbes in the hands of food handlers and are therefore considered to be an inevitable source of diseases borne by food.In addition, previous studies have shown the essential role of insufficient awareness, disposition, and experience of food handling in the incidence of food poisoning (Dhakal, Lee, & Nam, 2017). Therefore, behaviors of food handlers have a critical effect on their activities. Healthy food is described as not causing the consumer any harm or illness. Changing lifestyles and living and working conditions have resulted in increased numbers of foodborne diseases. Number of working women dependent on convenience foods (fast foods) and greater food safety and hygiene neglect, leading to an increase in foodborne diseases and they're one of the world's major public health issues. Such diseases are transmitted mainly in sufficient quantities by ingestion of viable pathogens or their toxins to cause disease. Low and middle income countries are much more affected by foodborne diseases due to a lack of training

in food safety, non-compliance with sanitation standards, insufficient drinking water and unhygienic conditions (Dhakal, Lee, & Nam, 2017)

In Somalia generally and Banadir region specially; there is no food safety and hygiene rules and regulations and food inspections staff, therefore the possibility of foodborne illness. Outbreaks of foodborne illness have periodically been observed in and outside Muqdisho residents. Food preparation and handling are the major determinants of food borne illness and the main purpose of the study was to assess food hygiene practices among food handlers in restaurants located Holwadag district, Mogadishu-Somalia.

1.1 Problem Statement

Improper handling of food by handlers was responsible for foodborne outbreaks around the world and is commonly reported as a factor contributing to foodborne outbreaks. Approximately 10 to 20 percent of food-borne disease cases are caused by contact with food handlers. Food handlers play a major role in the passive transfer of pathogens from infected sources, such as the transmission of pathogens from raw meat to ready-to-eat food

2.0 METHODOLOGY

This study was community based cross-sectional, the quantitative approach was selected through the use of the descriptive research method known as a fact-finding study involving a clear and reliable description of the results. Consequently, assumptions, debate and exploration are more realistic in the process this study was conducted in the Hawle Wadag District Mogadishu-Somalia, and also data were collected from 30 cookers from 30 restaurants by administrated questionnaire. The sampling procedure was non-probability convenient sampling during the data collection. The data were collected in November and December 2019 by using standardized administrated questionnaire composed of 36 close-ended questions. Data were analyzed by using Statistical Package for Social Science (SPSS) version 20.

3.0 RESULTS AND DISCUSSION

The study show that the majority of the respondents 13(43%) were aged between 31-35years old, 11(36%) were aged between 26-30years old, 3(10%) were aged between 36-40 yearsold, while the only 3(10%) were aged between 20-25years old, this is the evidence of all respondents are mature people. The study show 30(100%) of the respondents were male, who are cookers in the restaurants. The study show that the majority of the respondents 24(80%) were married, 5(16%) were divorced while the only 1(3%) were single, so that, mostly of the respondents are people that they want facilities of their families and them selves, while small number of the respondents are single means they are not married people. Two third of the respondents 20(66%) were illiterate people and all the respondents of the study did not attend training course of food hygiene before, they only work for experience that results many health problems in the society, because they don't ways to transmit different contaminations in the food.

Table 1: background information of the study participants

| Age of the respondents in year | Frequency | Percent% |
|--|------------------|-----------------|
| 20-25 | 3 | 10% |
| 26-30 | 11 | 36% |
| 31-35 | 13 | 43% |
| 36-40 | 3 | 10% |
| Total | 30 | 100% |
| Gander of the respondents | Frequency | Percent% |
| Male | 30 | 100% |
| Marital status | Frequency | Percent% |
| Single | 1 | 3% |
| Married | 24 | 80% |
| Divorced | 5 | 16% |
| Total | 30 | 100% |
| What is the highest level of education you have attained? | Frequency | Percent% |
| Illiterate | 20 | 66% |
| No formal education | 6 | 20% |
| Primary education | 3 | 10% |
| secondary/high school | 1 | 3% |
| Total | 30 | 100% |

The study show 11(36%) of the respondents reported that they are smokers, while the 19(63%) reported that they are not smokers, food handlers who are smoke in the food can cause food poison because small particles of the cigarette may enter cooked food, the people eat contaminated food and people become ill. This study show 30(100%) of the respondents reported that they are washing their hands in the restaurant, but contamination is not always feasible, so that , mostly food handlers attitude is only they wash their hands when they saw something their hands, facts there are many contaminants not seen only eye.

Table 2: Tobacco consuming and what do you wash your hands

| Do you consume tobacco? | Frequency | Percent% |
|--|------------------|-----------------|
| Yes | 11 | 36% |
| No | 19 | 63% |
| Total | 30 | 100% |
| Fore hand washing what are you using? | Frequency | Percent% |
| only water | 16 | 53% |
| water with soap | 14 | 46% |
| Total | 30 | 100% |

The study showed that the majority of the respondents 23(76%) reported that at the beginning of the day, 4(13%) reported that every time of nose flow, 2(6%) reported that after hand raw food, while the only 1(3%) reported that after every visit to a latrine or urinal, which means more than two-third of the respondents reported that they only make hand washing when they start of the work or the beginning of the day. The study show that the majority of the respondents 16(53%) reported that only water while the 14(46%) reported that water with soap, more than 50% when they making hand washing they use only water, no detergent substances, water only is not making cleaning.

Similar results have been recorded in the municipality of Sunyani that authorities have policies that it is actively not in favor of selling food on its market under the age group, as the authority may find such a form of child abuse. 70% of the study's participants were males, suggesting that food trade is primarily a male work. It contradicts the findings of other research in which 86% of the food handlers were women. More than 50% of the total Food handlers interviewed reached the level of primary education, while 17.5% had no formal education. This may reflect that if they are trained, participants may be able to understand the basics of food safety. The result is almost similar to the results reported in Malaysia among food handlers in residential colleges and cantinas on food safety, where there is more than that half of the respondents were high school educated (66.2%). Study showed that the highest proportion of 55% of participants who attended primary school wash their hands with water only, the level of training of food handlers on cross tabulation with tools used to wash hands resulted in statistically significant difference, this may mean the citizens had a high educational standard showing better personal hygiene habits, the result is tallying with the study results conducted in Dubai found stated that hygiene practices created significant differences observed by sex, age, occupation, monthly income, and training hygiene in washing hand with water, this ensures that the educational level of food handlers will significantly improve the personal skill of food handlers (Kordofan-sudan-, 2017)

The study show that the majority of the respondents 16(53%) reported that they are using to dry their hands clothes while the 14(46%) reported that Bandanna (piece of cloth using to dry hands and instruments) meaning that large number of the respondents use their cloths to dry hands, there is cross-contamination in food, clothes and food handlers hand, most of the food handlers are use dirty clothes. The study show 30(100%) of the respondents do not use personal protective equipment to prevent risks for the work means to establish occupational safety. The study show that the majority of the respondents 21(70%) reported that there is no gloves using in food handle, therefore, may occur injuries in food preparation such as to cut knives, so that, there are susceptibility transmission of the diseases and challenges of community health, although, food handlers of the restaurant have not medical card and not using personal protective equipment food may be source of contamination and most of the community have many food borne diseases and outbreaks, in the world most diarrheal diseases caused by food contamination, using gloves in food preparation can prevent contamination of food, while the only 9(30%) reported that they are use gloves during food preparation in restaurant asking by are you currently using gloves during work in restaurant.

Table 3: wearing protective personal cloth, using gloves during work and things to dry hands after hand washing.

| What are you using to dry your hand after washing? | Frequency | Percent% |
|--|------------------|-----------------|
| Bandanna | 14 | 46% |
| Apron/clothes | 16 | 53% |
| Total | 30 | 100% |
| Have you currently protective personal clothing for work? | Frequency | Percent% |
| No | 30 | 100% |
| Are you currently using gloves during work in restaurant? | Frequency | Percent% |
| Yes | 9 | 30% |
| No | 21 | 70% |
| Total | 30 | 100% |

About 60% of the study participants, the availability of personal protective clothes was found with 10 percent having Hairnet / hat and 50% having apron. However, only male participants had personal protective clothing (57%) with statistically significant gender difference and personal protective clothing. Restaurant owners and food handlers the value of wearing work may not be understood, and owners may be inclined to avoid the cost of providing such clothes. Food handlers in restaurants often use aprons to keep their clothes clean, but food handlers did not always use them even when aprons were available. Proper work wear is also an important factor in the prevention and control of disease exposure giving a sense of security and satisfaction to customers. Results of the study showed that 22.6% of participants consuming tobacco were males with a statistically significant gender difference. Smoking moves toxins and smoke from the mouth to the hands(Kordofan-sudan-, 2017)

18.6% reported in the present study that they always wear gloves when handling cooked food and 17.8% always wash their hands before processing food, which is much lower than findings. Where 92.2% of food handlers have reported using gloves and 90.1% have always washed their hands before and during the preparation of food in restaurant. Statistics showed that 44.4% of participants were wearing gloves and 86.4% were washing their hands before preparing food (Oliver, 2013)

More than 60% of the respondents reported that making cough or sneeze over the food, remember food is not cover always which may result to contaminate food particles, people who are eating food may be sick because food particles contain small droplets which carry microorganisms that can cause health related illness. The study describes that 25(83%) of the respondents don't have medical fitness card and the owners of the restaurant don't aware and care about the health of food handlers whether they are ill-healthy or not, the owners of the restaurant not now level health of food handlers and it is possible food handlers have diseases that are dangerous for human life and their health such as viral diseases (HIV and Hepatitis B virus). The study show only 5(16%) reported that they make medical examination to get ID card that identify health status of the person who want to work restaurant as cooker. The study show that the majority of the respondents 25(83%) reported that get sick leave which means when the worker feel sick or unwell he has opportunities to go his house to feel relax, while the small

number of the respondents 4(13%) reported that any feeling they have they must work no opportunity to go when they ill, but, this is a problem faced this part of the respondents they feel dismore while the only 1(3%) reported that medical examination and get sick leave. The study show that the majority of the respondents 22(73%) reported they are making reheating, while the only 8(26%) of the respondents reported they are making reheating process in sometimes.

Table 4: bad actions during food preparation, availability of medical fitness card and what manager do when member of workers get sick

| During food preparation which practices are you doing? | Frequency | Percent% |
|---|------------------|-----------------|
| Cough or sneeze over the food | 19 | 63% |
| Both | 11 | 36% |
| Total | 30 | 100% |
| Have you currently medical fitness card? | Frequency | Percent% |
| Yes | 5 | 16% |
| No | 25 | 83% |
| Total | 30 | 100% |
| If you are or somebody in restaurant be ill what action does manager take? | Frequency | Percent% |
| Get sick leave | 25 | 83% |
| Medical examination and get sick leave | 1 | 3% |
| Nothing | 4 | 13% |
| Total | 30 | 100% |

Therefore, almost all handlers (95%) recognized that the use of adornments, shoes or jewelry can contaminate food and that wearing a cap can minimize contamination of food. However, 77.5% of handlers reported never using jewelry or accessories while handling food, and 82.5% claimed to keep their hair completely covered with a hat. Nevertheless, the findings showed that only 17.5% of the handlers adequately protected their hair with a cap and did not wear any decorations when conducting food handling activities(Auad et al., 2019)

There was actually only a medical fitness card for male participants (62%), there was a statistically significant difference in gender and currently having a medical fitness card. Only male participants were wearing personal protective clothing (57%). The disparity between gender and protective personal clothing was highly statistically significant, 62.5% of this report participants had a medical fitness card with a statistically significant gender difference and a medical fitness card currently available. This can be due to poor or ineffective implementation of the program of tracking, monitoring and reporting. Before they are hired, food managers should have a medical examination(Kordofan-sudan-, 2017)

Just 10.2% of participants said they never function when they have diarrhea, observed a similar proportion (11.9%). Food handlers who indicated that they did not work when they had hand lesions or common colds were 12.1% and 14.6% respectively, where 64.4% said they did not handle food when they had cuts or wounds and 65.5% said they did not handle food when they had cuts or wounds nutrition during illness. More than one-fifth (20%) of respondents explained that after using the toilet, they always wash their hands with soap and water, where 71.7% and 88.5% of food handlers respectively reported compliance with this custom. The present study showed that only 36% of participants correctly found that healthy food handlers should carry foodborne pathogens that are lower than the findings of Akabanda et al.(2013) where 71.5%

replied correctly and 56.7% did not know that insects could transmit food poisoning pathogens, in comparison to Afifi and Abushelaibi who suggested that 97% recognized the relationship between insects and foodborne diseases (Oliver, 2013).

4.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Two third of the respondents 20(66%) were illiterate and all the respondents of the study did not attend training course of food hygiene before they start work, they don't know the diseases that can be transmitted through contaminated food. The study also show that the majority of the respondents 23(76%) reported they wash their hands only at the beginning of the day, which means more than two-third of the respondents reported that they only make hand washing when they start at the work. Food handlers in restaurants often use aprons to keep their clothes clean, but the study participants did not always use them even when aprons were available.

The study describes 25(83%) of the respondents don't have medical fitness card and the owners of the restaurant don't care about the health of food handlers whether they are ill-health or not which makes possible if food handlers are carrier of communicable disease and do not take preventive measures can simple distribute diseases to the clients. Previous Studies have confirmed the existence of pathogenic microbes in the hands of food handlers and are therefore considered to be an inevitable source of diseases borne by food and have shown the essential role of insufficient awareness, disposition, and experience of food handling in the incidence of food poisoning. Therefore, behaviors of food handlers have a critical effect on their activities. Healthy food is described as not causing the consumer any harm or illness.

Recommendations

The following recommendations have been made from the findings of this study; All the food handlers should give preliminary training about food safety and hygiene. Food business managers will constantly monitor the hygienic condition of the restaurants, As well as encouraging food staff strict adherence to the standards of food hygiene. A bill should be passed that only food handlers who have been adequately trained in food hygiene and licensed should be allowed to work as food vendors or food handlers. Food handlers give personal protective to prevent any problems of food handlers themselves and the community such as diseases transmitted through food. Requirements for recruiting food handlers should add medical examination prove or health ID in the last six months. Minister of Health and social welfare and Banadir regional office for health could make food safety and hygiene rules and regulations and then perform food inspections.

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