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Knowledge of Environmental Hygiene and Food Safety Practices among Food Handlers in Selected Hotels in Ikom Local Government Area, Cross River State, Nigeria

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Abstract

The study examined the knowledge of environmental hygiene and food safety practices among food handlers in selected hotels in Ikom Local Government Area (LGA), Cross River State, Nigeria. A descriptive cross-sectional design was adopted, incorporating both surveys and direct observation of food handlers' practices. The study population comprised 63 registered hotels in the LGA, from which 6 hotels (10%) that had been in operation for at least five years were purposively selected. Respondents included food handlers with minimum of two years work experience. Data was analyzed using Pearson Product Moment Correlation (PPMC) to test the relationship between food safety training and food safety practices among the respondents. The findings revealed statistically significant relationship ($r = 0.66$, $n=8$, $p < 0.05$) between food safety and improved food safety practices, particularly in areas such as hand washing and the use of Personal Protective Equipment (PPE). However, the overall knowledge of environmental hygiene and food safety was found to be inadequate, with noticeable gaps in critical aspects of food safety. The study concludes that continuous and structured training programs are necessary to enhance knowledge, reinforce safe practices and improve overall food safety compliance among food handlers in the study area.

Keywords: Food safety practices, Environmental hygiene, Food handlers, Food -borne diseases, Hotels and Ikom LGA

Introduction

Food as an indispensable basic necessity of life must be safe for consumption to promote healthy living and prevent disease. Individuals are more active and productive when they consume safe food and maintain good health. However, when food is contaminated with pathogenic micro-organisms such as *Escherichia coli*, *Salmonella* Spp, *Staphylococcus Aureus* (toxin producing strains), *Shigella* Spp, *Clostridium* Spp, and *Campylobacter* Spp, it can lead to severe illnesses and death. This underscores the importance of maintaining hygienic practices throughout all stages of food preparation to prevent contamination. At every stage of the food processing, food handlers including chefs, cooks, kitchen assistants, bakers, pastry chefs, butchers, caterers, room service staff, buffet attendants,

dishwashers, bartenders, food and beverage managers in hotels and other food establishment plays a pivotal role in maintaining food safety. However, this can only be achieved when food handlers possess adequate knowledge of food safety and environmental hygiene and consistently apply this knowledge in their practices while handling food.

The importance of safe food cannot be overemphasized. Thus, the World Health Organization marked World Health Day 2015 with the theme “Food Safety” and the slogan “From Farm to Plate, Make Food Safe” (World Health Organization, 2015). This highlights the importance that WHO places on addressing, in a coordinated global manner, the potential threats posed by unsafe food. The breakdown of food hygiene practices can lead to outbreaks of food borne illnesses or food poisoning, which are often linked to the food supply chain, where the food handlers play a critical role (Iwu, Uwakwe, Duru, Dine, Chineke, Merenu, Oluoha, Madubueze, Ndukwa & Ohale, 2017). Food borne diseases also known as food infections, refer to a broad category of illnesses such as cholera, dysentery and typhoid fever resulting from the consumption of food contaminated with physical (e.g., sand), biological (e.g., bacteria) or chemical contaminants (e.g., pesticides). In contrast, food poisoning (food intoxication) refers to the ingestion of toxins already present in contaminated food. These toxins may be produced by bacteria such as *Staphylococcus Aureus* or may occur naturally in certain foods, such as poisonous mushrooms (WHO, 2020). Food safety is a scientific discipline that encompasses the handling, preparation and storage of food in ways that prevent food borne illnesses and food poisoning (WHO, 2011).

Globally, food borne illnesses have increased over the years and continue to negatively affect the health and economic well being of both developed and developing countries (Admasu & Kelbessa, 2018). It is estimated that about 600 million people fall ill and approximately 549,000 die each year after consuming contaminated food (Kirk, 2015). A report by World Health Organisation (WHO, 2015) reveals that up to 30 per cent of the population in developed countries suffers from food borne diseases annually. In addition, about 2 million cases of food poisoning occur annually in industrialized nations, largely attributed to meat related vulnerabilities (Navarro-Garcia, 2015). In Africa, food borne diseases are significant contributors to gastrointestinal illnesses and poor hygiene practices during food preparation, handling and storage are among the major causes of morbidity (Admasu, 2018). In Malaysia, more than 50 per cent of reported food poisoning cases are attributed to improper food handling by food handlers (Lee, Abdul, Thong & Chai, 2017). Similarly, in Ethiopia around 70 per cent of diarrheal diseases are associated with consumption of contaminated food (Jegegne & Phyno, 2017). In Nigeria, there have been numerous reported cases of food safety related deaths in recent years (Onyeaka, Ekwebelem, Eze, Onwika, Aleke, Nwalwu & Chionuma, 2021). It is estimated that over 200,000 people die annually from food borne illnesses in Nigeria, with an associated economic burden of about US\$3.6 billion per annum (Ezirigwe, 2018). Similarly, Cross River State has faced several challenges due to poor food handling practices, which negatively impact public health and economic stability.

There have been notable outbreaks of food and water borne diseases in Cross River State, largely attributable to poor food handling practices and inadequate environmental sanitation. This remains a persistent public health problem, particularly during the rainy season when flooding increases the risk of water contamination used in food preparation. Reported cases in the state, especially within the Local Government Areas in the Central Geographical Region where Ikom is located highlight this concern. For instance, in Abi LGA (Ekureku), a cholera outbreak in 2022 affected 30 persons (Vanguard Newspaper, 2022). Similarly, in 2023, a cholera outbreak in Obubra LGA claimed 60 (Federal Radio Corporation of Nigeria, 2023). The safety and quality of food served in hotels are critical public health concerns, as these establishments cater to a diverse population, including tourists and local residents. Recent cases of food borne diseases in Cross River State, including Ikom LGA raise serious concerns regarding the sources of the food, the quality of water used in preparation and the hygiene practices observed throughout the food preparation and service processes.

However, there is limited empirical evidence regarding the level of knowledge of food safety practices and environmental hygiene among food handlers’ working in hotels in Ikom LGA of Cross River State. It remains unclear whether the food safety practices adopted by these food handlers meet established food safety standards. Furthermore, existing studies on food safety practices in this area is scare, particularly those focusing on hotel settings. This lack of context specific data represents a significant gap in knowledge, which this study seeks to address by systematically assessing food safety

practices and knowledge of environmental hygiene among food handlers in Ikom LGA of Cross River State. Therefore, this study aims to examine environmental hygiene practices and assess the level of knowledge of environmental hygiene among food handlers in hotels within the study area. It also, seeks to evaluate food handlers' awareness of food contaminants and food borne diseases common in the area.

The role of the physical environment in the food vending business particularly in hotels cannot be overemphasized. The cleanliness of the environment can evoke feelings of comfort, pleasure and relaxation, thereby enhancing guest patronage (Kotler & Armstrong, 2012). Conversely, poor environmental sanitation has adverse implications for the health of consumers. As a result, guests who are health conscious are more likely to consider good environmental sanitation as an important factor when choosing where to consume food (Chijioke, Enemu, Onyeonoro & Omolaja, 2024). Environmental sanitation and environmental hygiene are closely related concepts in environmental and public health practice. Environmental sanitation refers to the control of environmental factors that may adversely affect human health, including proper waste disposal, safe water supply, vector control, food safety and pollution prevention. Slustri, Raval and Mapuskar (2010) further noted that sanitation involves the adoption of measures aimed at eliminating unhealthy conditions particularly those related to dirt and infectious agents.

Environmental hygiene, on the other hand, focuses on practical measures aimed at maintaining cleanliness and preventing contamination within the human environment. These measures include regular hand washing, proper washing of food items before preparation, appropriate waste disposal, effective cleaning and sanitation of food preparation surfaces, as well as proper washing and sanitizing of utensils and equipment used for cooking and serving. Environmental hygiene therefore functions as a key component of environmental sanitation as hygienic practices support sanitation systems designed to protect public health (Nwankwo, Ezeonuegbu & Owei, 2004). However, the current situation regarding sanitation, even within the hospitality industry remains a concern. This challenge is pronounced in developing countries, where inadequate sanitation facilities have become a major cause of widespread and serious health problems (Masangwi, Ferguson, Grimason, Morse, Zawdie & Kazember, 2010). This is largely due to poor compliance with established safety standards in many food establishments as noted by Chijoke, Enemu, Onyenoro and Omolaja (2024). The operational standards adopted by hotels in Cross River State for food safety are outlined by regulatory agencies at both the global and national levels. At the global level, organizations such as World Health Organization and the Food and Agriculture Organization provide guidelines, while at the national level, bodies such as the Nigerian Tourism Development Corporation and the Cross River State Tourism Bureau as well as the Department of Food Safety and Nutrition of the Cross River State Ministry of Health play key regulatory roles.

One of the key requirements for preparing and storing safe food is to have procedures based on the principles of Good Hygiene Practices (GHP) and Hazard Analysis and Critical Control Point (HACCP) as outlined by Food and Agriculture Organization (2022). Food safety practices refer to all activities carried out by food handlers during the preparation, transportation, storage, wrapping, packaging and safe delivery of food to consumers (Luo & Wu, 2017). Food handlers therefore play a crucial role in preventing food contamination that may lead to food borne diseases. This can be achieved through adequate knowledge of food safety, a positive attitude and consistent practice of proper hygiene in food handling (Mathews, Kniel & Montville, 2010). However, food handlers who fail to maintain personal hygiene such washing of hands at the appropriate times and using correct hand washing techniques can easily contaminate food. The impact of food safety knowledge among food handlers in minimizing the risk of food borne diseases has been evaluated in some studies. For instance, in South Africa, attendance at food safety training courses was found to have a significant effect on practices such as glove use and hand washing (Nkhebenyane & Lues, 2020).

Similarly, other studies have shown that a lack of food safety training is strongly associated with poor food safety practices (Tuncer & Akoglu, 2020). Food safety training has also been found to promote positive behavior such as proper hand washing and the use of hair coverings (McFarland, Checinska, Sielaff, Rasco & Smith, 2019). Food contamination can result from inadequate protective measures, poor personal hygiene and cross contamination between food processing surfaces and utensils (Bari & Yeasmin, 2018). Such contamination leads to deterioration in food quality and raises concerns related to food safety, economic losses and public health (Fung, Wang & Menon, 2018). A study by Mathew (2021) provided four main types of contamination, such as chemical,

microbial/biological, physical and allergenic contamination, indicating that all food is at risk if proper control measures are not implemented. This underscores the responsibility of the food handlers to ensure that the food they prepare is free from contaminants and safe to consume. However, the transfer of food safety knowledge to employees may sometimes be inadequate, thereby limiting its practical application. Therefore, periodic food safety training is essential to reinforce knowledge and ensure that food handlers effectively apply what they have learned in practice. This is important because knowledge gained through training can be translated into positive attitudinal and behavioural changes (Muharnis & Dewi, 2021).

The study adopted the Theory of Planned Behaviour developed by Ajzen (1991). The theory of planned behavior (TPB) grew out of theory of reasoned action by Martin Fishbein and Ajzen. It is a theoretical framework that has been applied to several researches that deals with human behaviour (Sok, Borges, Schmidt & Ajzen, 2020). The theory of planned behaviour is one of the important theories that critically explain intention and behaviour. The theory helps to identify the components that associate work safety and health practices to safety behaviour (Watsi & Tarkang, 2021). The theory presumes that behavioural intentions predict behaviour. It suggests that three factors predict individual intentions.

These include attitude, subjective norms and perceived behavioural control (La Barbera & Ajzen, 2021). Attitude is an individual characteristic which portrays either positive or negative behaviour or reflection of feeling and knowledge of safety practices in the workplace (Hussein, 2017). Subjective norm is the expectation that people will accept and support work safety and health practices. Subjective norm is influenced by societal pressure from important people like the supervisors and co-workers who obey work ethics, safety and health practices in the workplace and their motivation to adhere to workplace safety rules and regulations (Ham, Jeger & Ivkovic, 2015). Perceived behavioural control is the extent to which workers feel that it is their choice to perform certain safety behaviour. At this stage, the worker performs safety and health practices if he believes there are safety resources or equipment to perform safety behaviour but may not perform safety behaviour if there is no equipment despite formation of positive attitude towards it or believe that other important persons will approve it (Hamid, Iraj, Mohammad, Habibeh & Alireza, 2019).

The theory of planned behaviour has been applied in many researches such as in work safety and healthy behaviour in the workplace (Hatami & Kakavand, 2022), safety climate and safety behaviour (Baby, Madhu & Renji, 2021), assessing knowledge and usage of personal protective equipment among hotel employees in Calabar Municipality, Nigeria (Eyo, Omubo, Joshua, Ekpe, Oboma, Basse & Ndiyo, 2025). However, most of these researches that applied theory of planned behaviour were carried out in developed countries where safety practices and procedure are handled at optimum. In developing countries such as Nigeria few of these researches have been done, but based on the predictive validity of the theory of planned behaviour, it is used as the conceptual framework in this study to explain the attitude of the hotel workers in Ikom LGA towards compliance with food safety standards. The theory of planned behaviour was also applied in collecting data on the attitude of workers towards environmental hygiene practices in the food area.

Study area

Location and size

The study area is Ikom Local Government Area (LGA) of Cross River State, located within the Central Geographical Region of the State. It lies approximately between latitude 5°57'40" North and longitudes 8°42'39" East. Ikom LGA is bounded to the North-West by Ogoja LGA, to the East by Etung LGA and to the South by Obubra LGA (FIG.I). The area covers a landmass of approximately 1,881,926 sqkm (Eja, Edu, Atu & Inyang, 2011).

Climate and vegetation

Ikom falls within the tropical rainforest belt, where rainfall is seasonal and often heavy. The temperature is relatively constant throughout the year, with average values typically ranging from 25 °C to 30 °C, while annual precipitation ranges between 1300mm and 3000 mm. The vegetation is predominantly tropical rainforest, characterized by dense forests and a wide variety of plant and animal

species (Offiong, Bassey, Agbor & Uzoezie, 2018). The prevailing climate and vegetation support a rich diversity of flora and fauna, making the area ecologically significant. These natural features also serve as important resources for tourism,

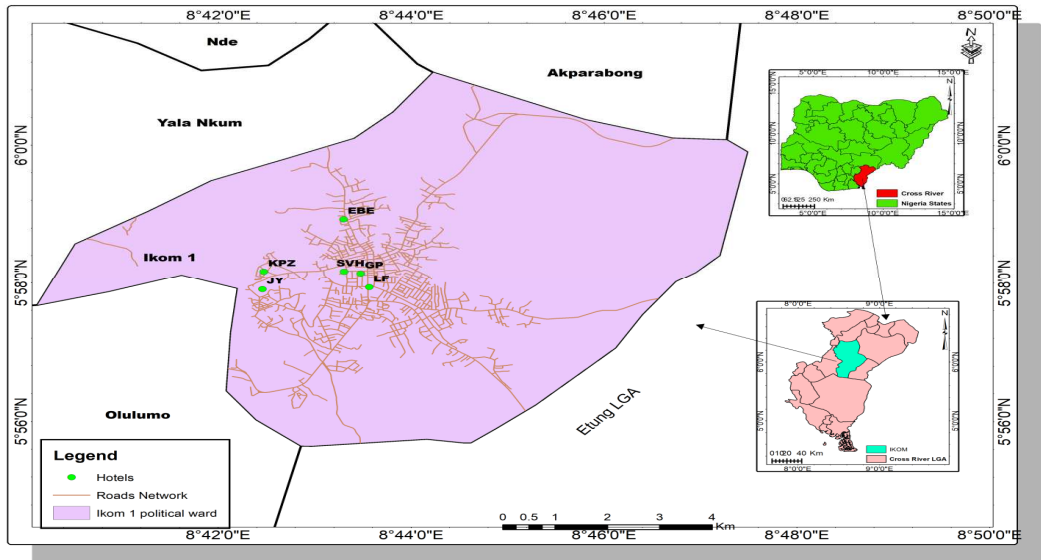


FIG. 1: Location of the sampled hotels in Ikom Local Government Area

Source: Fieldwork, 2025.

as climate and vegetation are key determinants of tourism attractiveness. They contribute to tourism development by encouraging the establishment of facilities such as hotels and restaurants, which provide accommodation and food services for visitors (Eyo, et al., 2025).

Geology and accessibility to water supply in Ikom

Ikom is located within Cross River Basin, which is characterized by sedimentary rock formations. These formations often include permeable materials such as sandstone which has the capacity to store and transmit groundwater, thereby supporting the development of shallow aquifers. Rainfall in the area is relatively high and plays a significant role in recharging the aquifers. The abundant rainfall infiltrates the soil and percolates into the underlying rock layers replenishing ground water reserves. In addition, the generally gentle topography of the area enhances water infiltration, allowing rain water to seep into the ground rather than being lost as surface runoff. Furthermore, the soil characteristics in the area promote effective percolation of water, which contributes to groundwater recharge and improves access to water supply (Ndip, Agyingyi, Nton & Oladunjoye, 2018). However, Ikom sometimes experiences water supply challenges despite the natural availability of groundwater resources. Several boreholes in the area have been reported to yield low quantities of water or to fail completely, often due to poor random siting (Akpan, Ugbaja & George, 2013). In terms of water quality, studies have indicated that many sources in Ikom and its environs do not consistently meet the standards set by the World Health Organization for safe drinking water without treatment. For instance, elevated levels of minerals such as Calcium, Iron and Magnesium have been reported in some sources (Ofori & Ama, 2022). Additionally, faecal coliforms have been detected in certain water sources, raising concern about microbial contamination, despite Federal Government declaration of Ikom and Yala LGAs as open defecation free (Punch Newspaper, 2018). Water plays a critical role in food safety; therefore, ensuring its accessibility inadequate quantity and acceptable quality is essential.

Consequently, hotels in Ikom must implement appropriate water treatment and management practices to ensure safety of food served to guests.

Methods

A descriptive cross-sectional survey design was adopted for the study. This design is appropriate because it allows the researcher to collect data at a single point in time in order to assess the knowledge of environmental hygiene and food safety practices among food handlers working in hotels (Kesmodel, 2018). The study utilized a combination of quantitative surveys and direct observation to obtain data on environmental hygiene knowledge and food safety practices in hotels in Ikom. A structured questionnaire was administered to food handlers in the selected hotels to assess their knowledge of food safety and environmental hygiene practices. In addition, direct observation of the hotel premises was conducted using a checklist to evaluate food handlers' safety practices within the food preparation areas. The geographic locations of the sampled hotels were recorded using a Global Positioning System (GPS). Data obtained from the field were analyzed using Pearson's Product Moment Correlation (PPMC) to determine the relationship between food safety knowledge acquired through training and the food safety practices of food handlers.

Sampling technique and sampling size

The population of study comprised 63 registered hotels in Ikom, as documented by the Cross River State Tourism Bureau (CRSTB). A sample size of 10% of the total number of registered hotels was selected, resulting in six (6) hotels included in the study. The selected hotels were further stratified based on a minimum of five (5) years of operation to ensure that only well established hotels with structured food service systems were included. Within the sampled hotels, respondents (food handlers) were selected based on their years of service. Only those who worked for at least two (2) years in the food service section were included, to ensure participants possessed adequate experience and knowledge on food safety practices. This selection process resulted in a total of 101 food handlers who were surveyed across sampled hotels in Ikom (Table 1).

Hypothesis

H₀: There is no relationship between training on food safety practices and food safety practices among food handlers in the study area. This hypothesis was tested using Person's Product Moment Correlation (PPMC) Statistics. The formula is given as:

$$r = \frac{1/n \sum (X - \bar{x})(y - \bar{y})}{\delta_x \delta_y}$$

Where:

- r = Correlation coefficient
- I = constant
- N = Number of variables
- x = Independent variables (Training on Food Safety)
- y = Dependent variable (Food Safety Practices)
- δ_x, δ_y = Standard deviation of x and y

Results

Table 1, provides a list of hotels sampled in Ikom Local Government Area (LGA) and number of sampled respondents in each hotel. Table 2 shows that 36.63% of the food handlers practiced hand washing with water only. The use of aprons was reported by 53.46% of the food handlers. Water storage tanks were typically cleaned once year (52.47%) and filtration was the most commonly used method of water treatment in the hotels (45.54%). Additionally, food preparation areas such as kitchens and restaurants were swept daily (38.61%), while 41.58% of respondents reported that cooking utensils were washed without proper sanitization (41.58%). Table 2 further shows that solid waste is usually stored in covered bins (65.34%) and disposed of daily (48.51%), while liquid wastes are often disposed into drainages (52.47%).

Table 1: List of hotels visited in Ikom and sampled respondents in each hotel

	Hotels	Sampled respondents
	Side View Hotel	18
	Gold Palm	16
	Living Fine Hotel	11
	Jorany Hotel	22
	Kengto Plaza	9
	Ebenezer Beim Excellence	25
Total	6 hotels	101

Source: Field work, 2025.

Table 2: Environmental hygiene practices observed in the hotels in Ikom LGA

Environmental hygiene practices	Frequency	Per cent (%)
Hand washing		
Regular hand washing with water and soap	31	30.70
Hand washing with water only	37	36.63
Occasional hand washing	28	27.72
No hand washing practice at critical times (before food preparation, after toilet use, etc)	5	4.95
Total	101	100
Use of Personal Protective Equipment		
Aprons	54	53.46
Gloves	16	15.84
Face mask	8	7.92
Head net/ head cover	23	22.77
Total	101	100
Washing of water storage tanks		
Monthly	5	4.95
Bi-annually	26	25.74
Quarterly	10	9.90
Once a year	53	52.47
Never	7	6.93
Total	101	100
Treatment of water		

Filtration	46	45.54
Chlorine	3	2.97
Boiling	40	39.60
Never	12	11.88
Total	101	100
Cleaning/screening of food premises		
Clear surrounding weeds monthly	8	7.92
Sweep kitchen/restaurants daily	39	38.61
Mop kitchen/restaurants daily	11	10.89
Dispose refuse regularly	20	19.80
Fumigation at least twice a year	4	3.96
Netted doors/windows around kitchen and restaurant	17	16.83
Regular cleaning of drainages	2	1.98
Total	101	100
Cleaning/sanitization of cooking items		
Wash clean and sanitize cooking utensils like pot	34	33.66
Wash and sanitize cooking tops	25	24.75
Wash utensils clean without sanitizing	42	41.58
Total	101	100
Handling/storing of refuse		
In covered bin	66	65.34
In bags	21	20.79
In cartons	14	13.86
Total	101	100
Disposal of solid waste		
Dispose waste daily	49	48.51
Dispose weekly	37	36.63
Dispose monthly	15	14.85
Total	101	100
Disposal of liquid waste		
Dispose into septic tank	48	47.52
Dispose into drainages	53	52.47
Total	101	100

Source: Fieldwork, 2025

In Table 3, it is observed that 41.58% of the food handlers reported receiving training on personal hygiene and only 1% had received training on allergen management. The knowledge gained through training was translated into food safety practices, as 18.81% of the food handlers reported of regular hand washing and only 1.98% reported of cooking and serving food with respiratory illnesses (Table 4). However, knowledge gained through training did not appear to be adequate in terms of awareness of food contaminants (Table 5). Many of the respondents were aware of physical contaminants (62.37%), while a small proportion was aware of chemical contaminants (20.80%) and biological contaminants (16.83%).

Table 3: Training on food safety

Food safety trainings	F	Per cent (%)
Personal hygiene and health	42	41.58
Food handling and preparation	23	22.77
Temperature control	6	5.94
Cleaning and sanitation	18	17.82
Food storage and prevention	5	4.95
Allergen management	1	1.00
Legal and regulatory compliance (HACCP)	4	3.96
Emergency response	2	1.98
Total	101	100

Source: Fieldwork, 2025.

Table4: Food safety practices

Food safety practices	F	Per cent (%)
Regular hand washing	19	18.81
Use of PPE e.g Apron and head cover	23	22.77
Check shelf life of food	4	3.96
Use of saliva to open food bags	17	16.83
Proper refrigeration of food	9	8.91
Separate cooked food from raw food	14	13.86
Cook and serve food with respiratory illness	2	1.98
Serve food with polished nails	13	12.87
Total	101	100

Source: Fieldwork, 2025.

Regarding specific food borne diseases, Figure 2 shows that diarrhea was the most recognized condition (66%) among respondents in Ikom LGA. However, none of the respondents identified Hepatitis A as food borne disease in the study area. Finally, the relationship between food safety training and food safety practices was examined using Pearson Product Moment Correlation. Preliminary analyses were conducted to ensure normality, linearity and homoscedasticity were not violated. The results, revealed a strong positive correlation between the two variables ($r = 0.66$, $n=8$, $p < 0.05$). This indicates that increased training on food safety practices is associated with improved food safety practices among food handlers. In other words, as training increases, the level of compliance with food safety practices also tends to increase. Furthermore, training on personal hygiene and health was positively associated with specific food safety practices, such as regular hand washing and use of PPE among food handlers.

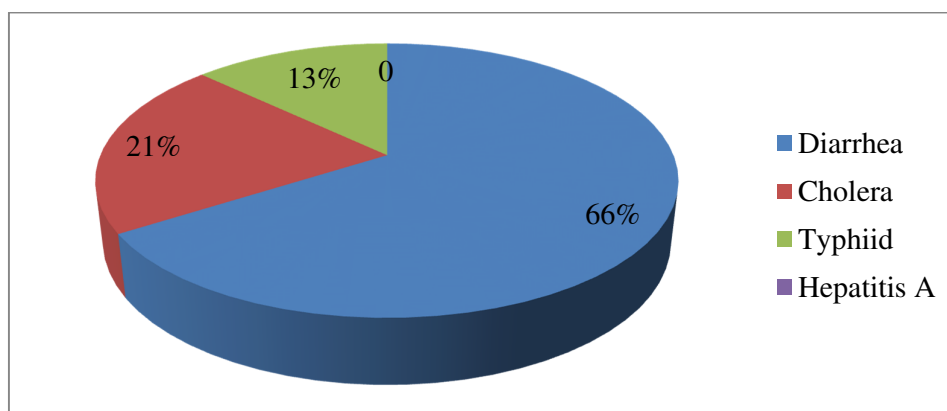


FIG. 2: Food handlers' awareness of food borne diseases in the area.

Source: Fieldwork, 2025.

Table 5: Food handlers' awareness of food contaminants

Physical Contaminants			Chemical Contaminants			Biological contaminants		
Types	F	%	Types	F	%	Types	F	%
Stone	16	15.84	Pesticides	7	6.93	Bacteria	1	0.99
Sand	19	18.81	Food additives	1	0.99	Fungi	0	0
Jewelry	4	3.96	Detergent	2	2.00	Virus	0	0
Human hair	5	4.95	Grease/oil residue	5	4.95	Parasite	0	0
Packaging Materials	7	6.93	Toxic plants	1	0.99	Rat	8	7.90
Cloth Fibre	9	8.91	Disinfectants	4	3.96	Fly	6	5.94
Finger nails	3	2.97	Allergens (Peanuts, milk,egg)	1	0.99	Cockroach	2	2.00
Total	63	62.37		21	20.80		17	16.83

Source: Fieldwork, 2025.

Discussion of findings

The findings from the study revealed a positive relationship between knowledge acquired through food safety training and food safety practices among food handlers in Ikom LGA. This suggests that training is an important determinant of safe food handling behavior, as individuals exposed to food safety education are more likely to adopt recommended practices. However, despite the positive association, the results indicate that knowledge gained may not be sufficiently comprehensive or effectively translated into practice. This may be due to factors such as inadequate provision of necessary facilities and materials, as well as weak enforcement of food safety regulations. Furthermore, some of environmental hygiene practices were found to be inadequate. For instance, although hand washing was reported to be regular, some respondents washed their hands without soap, while others failed to wash their hands at critical times such as before food preparation. Water treatment practices were limited mainly to filtration and waste water was commonly disposed of into open drainages.

Additionally, many respondents demonstrated limited knowledge of food contaminants. Although a considerable proportion of the food handlers recognized diarrhea as a common food borne diseases, their awareness of other prevalent food borne diseases in the area, such as cholera and typhoid fever, as well as their understanding of the causes and prevention of these diseases appeared limited. These gaps in knowledge and practice may increase the risk of food contamination and transmission of food borne diseases in hotels in Ikom LGA.

Conclusion

In conclusion, while food handlers in Ikom LGA demonstrate some level of awareness and adherence to food safety practices, significant gaps remain in both knowledge and implementation. These deficiencies highlight the need for more comprehensive and practical training programs that go beyond theoretical knowledge to emphasize behavior change and compliance. Strengthening food safety training, improving environmental hygiene practices and enhancing awareness of food contaminants are essential steps toward improving overall food safety standards. In addition, the provision of adequate facilities (such as hand washing stations with soap and proper waste disposal systems) and safety regulations are crucial to ensuring effective implementation of safe practices. Addressing these gaps will not only protect public health by reducing the risk of food borne diseases but also contribute to the achievement of key Sustainable Development Goals (SDGs), particularly Goal 3 (Good Health and Wellbeing) and Goal 12 (Responsible Consumption and Production). It is therefore recommended that regular refresher training programs be conducted for food handlers to reinforce knowledge and improve compliance with food safety practices. Furthermore, continuous monitoring, supervision and public health education should be prioritized in the study area to sustain improvements in food safety.

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