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Food safety knowledge and hygiene practices of foodservice entrepreneurs in Ilaro, Ogun State, Nigeria: A cross-sectional study

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ABSTRACT: Foodborne disease remains a major public health concern globally, particularly in low- and middle-income countries where informal food service operations are widespread. This study assessed the food safety knowledge and hygiene practices of foodservice entrepreneurs in Ilaro, Ogun State, Nigeria. A cross-sectional descriptive design was adopted, involving 200 food service entrepreneurs selected from the town using a multistage sampling technique. Data were collected using a semi-structured questionnaire and an observational checklist. Descriptive and inferential analyses were performed with significance set at $p<0.05$. The results showed that while a high proportion of respondents had heard of food hygiene (91.5%) and understood its link to disease (90.5%), important knowledge gaps existed, particularly regarding food storage and cross-contamination. Overall, 38.5% of respondents had good knowledge of food hygiene, compared to 69.5% with good knowledge of food safety. In terms of practices, 64.5% demonstrated good hygiene practices; deficiencies were observed in glove use (54%), proper utensil separation (66.5%) and disinfection of cutting boards (65.5%). Observational findings further revealed environmental sanitation concerns, including inadequate hand washing facilities (68%) and the presence of disease vectors (42.5%). A statistically significant association was found between food safety knowledge and hygiene practices ($\chi^2 = 14.85$, $p = 0.01$), whereas no significant relationship was observed between food hygiene knowledge and practices ($\chi^2 = 2.17$, $p = 0.71$). In conclusion, although food service entrepreneurs in the study area demonstrated relatively good knowledge and practices, critical gaps persist that may increase the risk of foodborne diseases. Targeted interventions focusing on practical training, behaviour change and improved sanitation infrastructure are recommended to enhance food safety compliance.

Keywords: Food handlers, food hygiene, foodborne disease prevention, cross-contamination, public health nutrition.

INTRODUCTION

The World Health Organisation (WHO) reports that unsafe food remains a significant global health concern, with millions of recorded cases of foodborne diseases annually (WHO, 2020). Food safety refers to the conditions and practices that preserve the quality of food to prevent contamination and foodborne illnesses (WHO, 2024). These issues are more pronounced in developing countries, such as Nigeria, where enforcement of regulations, food safety education and awareness and infrastructure advancement are inadequate. According to Codex Alimentarius (2020), food hygiene encompasses practices that maintain cleanliness and prevent contamination during food preparation, handling and storage to prevent foodborne illnesses. Food entrepreneurs include street vendors, caterers, small-scale restaurant operators, bakeries, and food service outlets such as schools and food trucks. According to the WHO and FAO, Food entrepreneurs are considered crucial, frontline participants in the food supply chain who must adopt good practices to prevent the contamination of foodborne diseases by consumers (WHO/FAO, 2019; FAO/WHO, 2009).

Food safety remains a major public health concern in Nigeria despite government efforts through agencies such as the National Agency for Food and Drug Administration and Control (NAFDAC, 2021) to improve the safety of the food supply (Iwu *et al*., 2017). Foods that are improperly prepared or mishandled, either at home or in foodservice establishments, can result in foodborne diseases. Globally, foodborne illnesses affect over 600 million people and cause approximately 420,000 deaths annually, prompting intensified efforts to improve food safety across the agricultural value chain (FAO/WHO, 2019). Food safety ensures that food is free from hazards that may pose risks to human health (Onyeaka *et al*., 2023), while food hygiene encompasses practices that maintain cleanliness and prevent contamination during food preparation, handling, and storage.

Food entrepreneurship is a rapidly growing sector driven by urbanisation, population growth, changing consumer habits, and increasing demand for ready-to-eat meals in developing countries. While this growth contributes to economic development and employment opportunities, it also raises concerns regarding compliance with food safety and hygiene standards, particularly among small-scale and informal food vendors. These vendors often provide affordable meals to low-income populations, including students, but may operate under substandard sanitary conditions, such as inadequate handwashing facilities and reuse of contaminated water (Kanu and Turay, 2024). Given their direct contact with food and consumers, food handlers play a critical role in the transmission or prevention of foodborne diseases. Consequently, the risk of contamination and foodborne disease outbreaks remains a pressing issue. The result of a previous study within the state (Ogun State) reported that only 75.3% of vendors received hygiene training (Adebayo *et al*., 2023).

Existing studies have examined food safety knowledge and hygiene practices among food vendors in Ogun State and Southwestern Nigeria. For instance, a study in Abeokuta reported gaps between food safety knowledge and actual practices among street food vendors, largely due to poor access to basic sanitary facilities (Omemu and Aderoju, 2008). Similarly, studies conducted in Odeda and Ado-Odo/Ota Local Government Areas showed varying levels of compliance with food hygiene standards among food vendors (Adebayo *et al*., 2023; Oke *et al*., 2024). Other studies in Ogun State have also explored food safety knowledge among households and consumers, emphasising its role in preventing foodborne illnesses (Adebowale and Kassim, 2017).

However, despite these studies, there is a paucity of data specifically focusing on foodservice entrepreneurs in Ilaro, Ogun State. Existing studies are largely concentrated in urban centres such as Abeokuta or focus on specific groups like street vendors or households, thereby limiting generalizability to semi-urban settings like Ilaro. Therefore, this study seeks to fill this gap by providing context-specific evidence on food safety knowledge and hygiene practices among foodservice entrepreneurs in Ilaro. This study assessed food hygiene knowledge, food safety knowledge, and hygiene practices among food service entrepreneurs in Ilaro, Ogun State, Nigeria.

MATERIALS AND METHODS

Area of study

This study was carried out in selected areas of Ilaro, Ogun State, to assess the food safety and hygiene practices of food service entrepreneurs. Ilaro, the headquarters of Yewa South Local Government Area, is located approximately 50 kilometres from Abeokuta, the state capital, and about 100 kilometres from Ikeja, the capital city of Lagos State. The Yewa South LGA had a population of 168, 336 in the 2006 census, with a projection of 286, 300 as of 2022 (NPC and NBS, 2022). The inhabitants are predominantly Yoruba, speaking various dialects such as Yewa, Anago, and Egun. The major religions practised in the area include Christianity, Islam, and traditional beliefs. The local economy is supported by the cultivation of crops such as cocoa, coffee, kolanut, oranges, and pineapples.

Study design

A descriptive cross-sectional study design was used. It comprised food service entrepreneurs operating at their respective food service outlets within Ilaro, Ogun State, where data on their food safety and hygiene practices were collected at a single point in time.

Study population

The population for the study consisted of food service entrepreneurs in Ilaro, Ogun State. For this study, food service entrepreneurs were operationally defined as individuals directly involved in the preparation, handling, and sale of ready-to-eat foods. This included street food vendors, restaurant operators, canteen operators, caterers, and food sellers in bars and similar outlets.

Eligibility criteria

Inclusion criteria: All stationary foodservice entrepreneurs operating from fixed locations in Ilaro, Ogun State, such as restaurants, canteens, cafeterias, bukas and bars were included in the study.

Exclusion criteria: Only stationary foodservice entrepreneurs were considered because they operate

from permanent locations, which makes them easier to locate, observe and monitor. Mobile food vendors were excluded from the study since they move from place to place while selling, making their food safety and hygiene practices difficult.

Sample size determination

The sample size was determined using Cochran's (1977) formula:

$$n_0 = \frac{Z^2 pq}{d^2}$$

$$q = 1-p$$

Where: n_0 = desired sample size, Z = standard normal deviation at 95% confidence interval (1.96), p = Prevalence of good knowledge of food safety (84.4%) in Ogun State reported by Oke *et al*. (2024), d = margin of error (0.05).

$$n_0 = \frac{(1.96)^2 (0.844) (1 - 0.844)}{(0.05)^2}$$

$$n_0 = \frac{3.8416 \times 0.844 \times 0.156}{0.0025}$$

$$n_0 = \frac{0.5058004224}{0.0025}$$

$n_0 \sim 202$

However, due to the absence of a complete sampling frame and the relatively small number of eligible food service entrepreneurs within the selected clusters, a complete enumeration approach was adopted. All eligible and consenting participants identified during field mapping were included in the study, resulting in a final sample size of 200 respondents.

Sampling technique

A multistage cluster sampling technique was adopted to select participants for the study. Ilaro town is divided into three (3) wards: Ilaro I, Ilaro II and Ilaro III, each comprising several areas and quarters.

Stage 1 involved area selection. From each ward, four areas were selected using simple random sampling, giving a total of 12 areas across the town. The selected areas were Poly Area, Orita, Oke-Ola, Pahayi, Lieslie, Upper Mission Area, Oke-Ella, Udoji Area, Gbogidi, Kumoye Street, Oronna Town Hall Area and Olorunsogo.

In the second stage, all eligible food service entrepreneurs within each selected cluster were approached for participation. Due to the absence of a sampling frame and the relatively small number of eligible respondents within each cluster, a complete enumeration (census) approach was adopted. All eligible and consenting participants present during data collection were included in the study, resulting in a total of 200 respondents.

Data collection

A semi-structured, self-administered questionnaire was used to collect data from the food service entrepreneurs. The questionnaire was divided into four sections:

1. Socio-demographic characteristics such as age, sex, educational level, ethnic group and year of experience.
2. Knowledge of food hygiene assessed understanding of personal hygiene, handwashing, safe food handling practices, among others.
3. Knowledge of food safety – assessing awareness of food contamination risks, storage practices, and regulatory compliance.
4. Observational checklist of personal and environmental hygiene – based on direct observation of food handlers' practices and the hygiene of their business environment, including preparation areas, equipment and waste disposal practices.

The questionnaire used in this study was developed based on relevant literature and adapted from previously published studies on food safety knowledge and hygiene practices among food handlers in low- and middle-income countries. Items assessing food hygiene and safety knowledge and practices were adapted from studies conducted among food vendors in Nigeria and other countries, where comparable constructs were assessed (Adebayo *et al*., 2023; Oke *et al*., 2024; Omemu and Aderoju, 2008; Adegunwa *et al*., 2016; Islam *et al*., 2022; Nkosi *et al*., 2021).

The observation checklist was developed in line with the World Health Organisation principles of food hygiene and safe handling practices, which include personal hygiene, environmental sanitation, food storage, and prevention of cross-contamination (WHO, 1989).

The instrument was reviewed by two experts from the Department of Nutrition and Dietetics, and an expert from the Microbiology unit of the Department of Science Laboratory Technology of The Federal Polytechnic, Ilaro, Ogun State, to ensure content validity, relevance and clarity of items. Modifications were made based on expert suggestions prior to data collection.

Knowledge of food hygiene, food safety, and food handlers' safety practices was evaluated using a questionnaire containing 8, 10, and 10 questions, respectively, with each correct response assigned a score of 1 and incorrect responses scored as 0. For descriptive analysis, the knowledge and practice level were categorised based on the total score: Poor for a total score less than < 50%, Average for a score between 50-69%,

and Good for a score greater than ≥70% (Iwu *et al*., 2017).

Prior to data collection, informed consent was obtained from all respondents. Participation was voluntary, and respondents were assured of absolute confidentiality and anonymity. Permission to conduct the study was obtained from the relevant local government authority. The observational component was conducted discretely to minimise any influence on participants' normal food handling behaviours.

Data analysis

The data obtained from this study were subjected to both descriptive and inferential statistics using statistical products and service solutions (SPSS) Version 27.0. Descriptive statistics, such as frequencies and percentages, were used to summarise the data. The chi-square test was employed to determine associations between categorical variables. Statistical significance was set at $p < 0.05$ with a 95% confidence level. Data were presented using tables and charts.

RESULTS

The majority of respondents were female (81%), with most falling within the age of 31-40 years (42.5%). The respondents were largely Yoruba (76.5%), predominantly married (69%), and had secondary education as their highest qualification (31%). Most had 4-7 years of experience in food service (Table 1).

Table 2 shows a high level of awareness of food hygiene among respondents, with 91.5% reporting prior knowledge. The mass media (46.8%) and health workers (39.2%) were the main sources of information. Most respondents also recognised the health implications of poor food hygiene (90.5%) and the importance of hand washing in preventing contamination (83%). However, gaps in specific knowledge were observed. Only slightly above half of the respondents (55%) understood the importance of proper cleaning and sanitisation of utensils. Misconceptions were also evident, particularly about food storage and preparation, where a notable number believed that food prepared in advance reduces contamination risk (56.5%) and that raw and cooked foods can be stored together (45.5%). Quality (50.5%) was the most important factor considered during food preparation.

Most respondents demonstrated good knowledge of food safety, particularly in relation to contamination risks and proper handling. Notably, 81.5% correctly identified that proper cooking of eggs eliminates harmful microorganisms, and 88% recognized the importance of handwashing after handling money (Table 3).

Table 4 shows that most of the respondents washed their hands before handling raw food (81%) and after handling cooked food (82%). However, only 54% used gloves when serving food. Use of separate utensils

Table 1. Socio-demographic characteristics of the respondents.

Variables	Frequency	Percentage (%)
Sex		
Male	38	19
Female	162	81
Total	200	100
Age (Years)		
18-20	2	1
21-30	40	20
31-40	85	42.5
41-50	52	26
> 50	20	10
No response	1	0.5
Total	200	100
Ethnic group		
Yoruba	153	76.5
Igbo	31	15.5
Hausa	15	7.5
Igala	1	0.5
Total	200	100
Religion		
Christianity	109	54.5
Islam	87	43.5
Traditional	4	2.0
Total	200	100
Educational level		
No formal education	34	17
Primary Education	43	21.5
Secondary Education	62	31
NCE/OND	46	23
HND/B.Sc	15	7.5
Total	200	100
Marital status		
Single	44	22
Married	138	69
Divorced	18	9
Total	200	100
Years of experience		
< 3years	40	20
4-7 years	73	36.5
8 -11 years	39	19.5
12 - 15 years	43	21.5
Above 16 years	5	2.5
Total	200	100

Table 2. Knowledge of respondents on food hygiene.

Variables	Frequency	Percentage (%)
Heard of food hygiene		
Yes	183	91.5
No	17	8.5
*Source(s) of information on food hygiene		
Mass media (TV, radio, newspaper, etc.)	104	46.8
Health workers	87	39.2
Others	14	6.3
NA	17	7.7
Lack of food hygiene can cause diseases		
Yes	187	90.5
No	19	9.5
Washing of hands before cooking reduces the risk of food contamination		
Yes	166	83
No	34	7
Proper cleaning and sanitization of utensils reduces the risk food contamination		
Yes	110	55
No	90	45
Food prepared in advance reduces risk of food contamination		
Yes	113	56.5
No	87	43.5
Raw and cooked foods should be stored together to reduce the risk of food contamination		
Yes	91	45.5
No	104	52
No response	5	2.5
Most important consideration during food preparation		
Price	49	24.5
Quality	101	50.5
Availability	46	23
Accessibility	4	2

*****Multiple responses, NA = Not applicable.

(66.5%) and disinfection of cutting boards (65.5%) were moderate. The majority wore aprons (76.5%) and head coverings (73.5%), and 83% checked expiry dates of products.

Observation revealed generally good personal hygiene, with over 80% of food handlers appearing neatly dressed and having well-kept fingernails. However, only 67% covered their hair, while environmental assessment revealed critical gaps such as inadequate sanitation facilities (28%), presence of disease vectors (42.5%), and suboptimal utensil cleaning practices (49.5%) (Table 5).

Figure 1 shows the distribution of respondents' overall food hygiene and safety practice levels, categorised based on composite practice scores. Respondents were grouped into three categories: good practice (≥70%), average practice (50–69%), and poor practice (<50%), based on

Table 3. Knowledge of respondents on food safety.

Variables	Frequency	Percentage (%)
Raw vegetables are at higher risk of contamination than undercooked beef.		
Yes	138	69
No	62	31
Wiping hands on cloth is the best way to clean hands before food preparation		
Yes	92	46
No	108	54
Cooking eggs until both yolk and white are firm kills harmful germs		
Yes	163	81.5
No	37	18.5
Refreezing defrosted food causes food borne illness		
Yes	149	74.5
No	51	25.5
Hand washing is necessary after handling money		
Yes	176	88
No	24	12
Hand and arm jewelry are sources of food contamination		
Yes	178	89
No	22	11
Food handlers cannot safely handle food when sick with diarrhoea		
Yes	170	85
No	30	15
Food handlers cannot safely handle foods when they have cold, cough and catarrh		
Yes	170	85
No	30	15
Food handlers should bath regularly		
Yes	178	89
No	22	11
Food handlers should wear hair restraints and aprons when handling foods		
Yes	170	85
No	30	15

their total practice scores derived from the structured checklist. Results showed variation in the knowledge and practices among respondents. For food hygiene knowledge, 38.5% demonstrated good knowledge, 36.0% had average knowledge, and 25.5% had poor knowledge. In contrast, knowledge of food safety was higher, with 69.5% demonstrating good knowledge (Figure 1).

Regarding overall practices, 64.5% of respondents demonstrated good food hygiene practices, while 18% and 17.5% had average and poor practices, respectively (Figure 1).

There was no significant association between knowledge of food hygiene and hygiene practices ($\chi^2 = 2.17$, $p = 0.71$). However, a statistically significant association

Table 4. Food handler's responses on hygiene and safety practices

Variable	Frequency	Percentage (%)
Wash hands before touching unwrapped raw food		
Yes	162	81
No	38	19
Use separate utensils for raw and cooked foods		
Yes	133	66.5
No	67	33.5
Use gloves when serving unwrapped food		
Yes	108	54
No	92	46
Wear apron or uniform when serving food		
Yes	153	76.5
No	47	23.5
Use handkerchief when suffering from cold		
Yes	175	87.5
No	25	12.5
Use kitchen towels to dry utensils		
Yes	135	67.5
No	65	32.5
Wear hat or head covering when serving food		
Yes	147	73.5
No	53	26.5
Disinfect cutting boards after each use		
Yes	131	65.5
No	69	34.5
Check expiry dates of all products		
Yes	166	83
No	34	17
Wash hands after touching cooked food		
Yes	164	82
No	36	18

was observed between knowledge of food safety and hygiene practices ($\chi^2 = 14.85$, $p = 0.01$) (Table 6).

DISCUSSION

The study assessed the food safety knowledge and hygiene practices of service entrepreneurs in Ilaro, Ogun State. The result of the socio-demographic profile revealed that the majority of respondents were females (81%) within the age range of 31-40 years (42.5%), with at least secondary education (31%) or post-secondary training (23%). This pattern aligns with recent findings in sub-Saharan Africa, where women dominate the informal sector due to its flexibility and relatively low entry barriers (Adeosun *et al*., 2022; Mahopo *et al*., 2022; FAO, 2025; Iwu *et al*., 2017; Mendagudali *et al*., 2015). However, studies in parts of East Africa have reported higher male participation, which suggests that gender distribution in the food service industry may be influenced by local socio-

Table 5. Observational check list of personal/environmental hygiene of respondents.

Personal/environmental hygiene	Frequency	Percentage (%)
Personal hygiene		
Canteen staff are neatly dressed		
Yes	168	84
No	32	16
All canteen staff covered their hair		
Yes	134	67
No	66	33
All canteen staff use apron		
Yes	141	70.5
No	59	29.5
All canteen staff are with well- kept finger nails		
Yes	168	84.5
No	31	15.5
Environmental hygiene		
Cooked food is protected and free from flies and rodents		
Yes	158	79.5
No	41	20.5
Presence of clean wash hand basin, soap and towel		
Yes	136	68
No	64	32
Clean and well-arranged serving table and surrounding		
Yes	172	86
No	28	14
Adequate sanitary conditions		
Yes	144	72
No	56	28
Improper monitoring and cleaning of used plate and cutleries		
Yes	99	49.5
No	101	50.5
Evidence of diseases vectors in premises		
Yes	85	42.5
No	115	57.5
Uncooked food placed on bare floor		
Yes	73	36.5
No	127	63.5
Adequate supply of water		
Yes	164	82
No	36	18

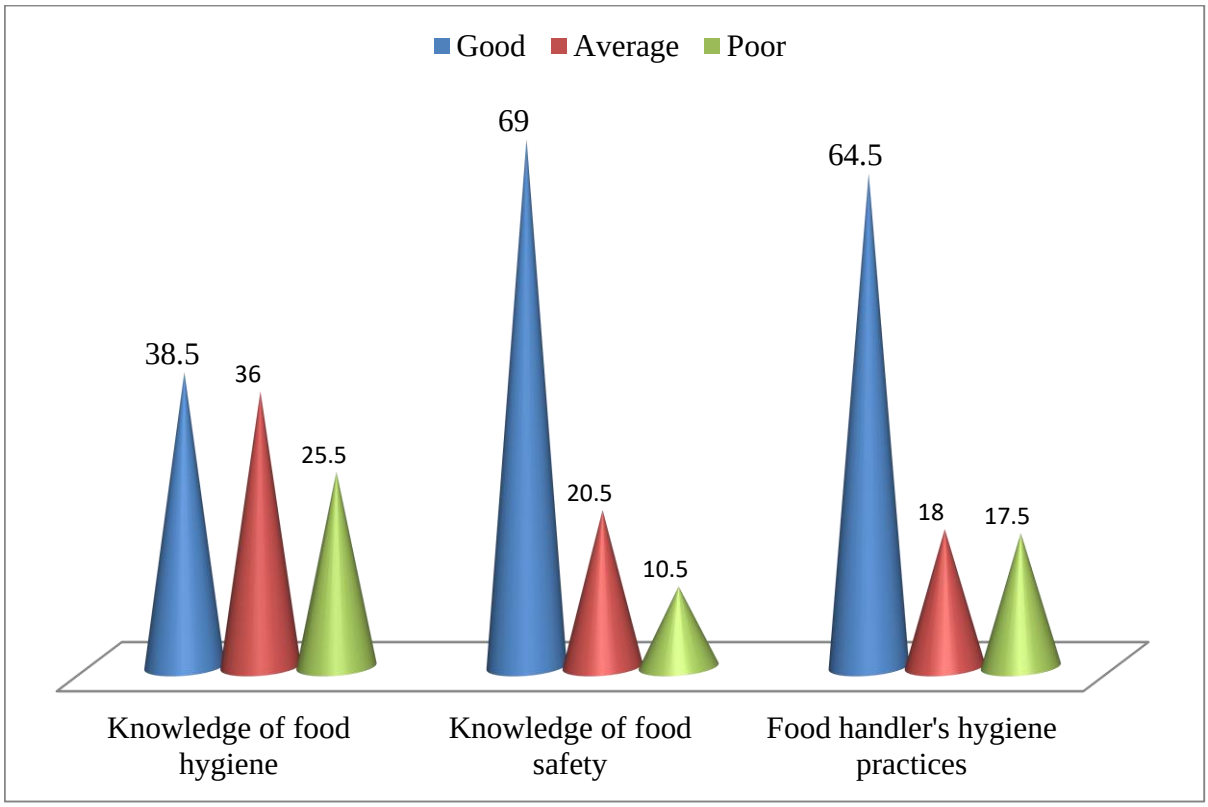

Figure 1. Levels of knowledge of food hygiene, food safety and hygiene practices.

Table 6. Association between knowledge of food hygiene, knowledge of food safety and food hygiene and safety practices among food service entrepreneurs.

Variables	Good- Hygiene Practice (%)	Average-Hygiene practice (%)	Poor-Hygiene Practice (%)	Total (%)	χ^2	Df	p- value
Knowledge of food hygiene							
Good	51(66.2)	13(16.9)	13(16.9)	77(100)			
Average	46(63.9)	11(15.3)	15(20.8)	72(100)	2.17	4	0.71
Poor	32(62.7)	12(23.5)	7(13.7)	51(100)			
Total	129(64.5)	36(18.0)	35(17.5)	200(100)			
Knowledge of food safety							
Good	96(70.5)	26(18.7)	15(10.8)	139(100)			
Average	22(53.7)	6(14.6)	13(31.7)	41(100)	14.848	4	0.01*
Poor	9(45.0)	4(20.0)	7(35.0)	20(100)			
Total	129(64.5)	36(18.0)	35(17.5)	200(100)			

Significantly different at $p<0.05$ based on chi-square.

cultural and economic structures (George, 2019; Manyanhaire *et al*., 2007; Muinde and Kuria, 2005; Duse and da Silva, 2003). Challenging economic conditions, particularly in developing countries, have contributed to the rapid growth of food vending activities in urban areas, where they serve as an accessible source of livelihood and complementary household income, especially for women (Iwu *et al*., 2017). In addition, the relatively higher educational attainment observed among food entrepreneurs may be linked to rising unemployment among skilled and educated individuals, which compels many to engage in informal entrepreneurial ventures such as food vending (Iwu *et al*., 2017). The relatively moderate level of education observed in this study is encouraging,

as education has been linked to improved food safety awareness. However, the persistence of unsafe practices despite this is suggestive that formal education alone may not translate into safe food handling practices (Sheehama and Singh, 2025).

Findings on food hygiene knowledge showed general awareness was high, and important gaps exist in specific technical areas such as utensil sanitation and safe food storage. This suggests that respondents may be familiar with basic hygiene concepts but lack a detailed understanding of critical control measures required to prevent contamination. Similar patterns have been reported in recent studies, where food handlers demonstrate broad awareness but limited depth in food safety knowledge (Ncube *et al*., 2020; Islam *et al*., 2022). The misconception regarding food storage is concerning, as improper separation of raw and cooked foods is a well-established risk factor for cross-contamination (Adeyanju and Ishola, 2014).

Moreover, the respondents demonstrate relatively higher food safety knowledge, with 69.6% having good knowledge. A high proportion correctly identified key safety measures such as hand washing after handling money (88%), risks associated with handling food while ill (85%) and the importance of proper cooking of eggs (81.5%). However, 46% of respondents still believed that wiping hands on a cloth is an appropriate cleaning method, which is an unsafe traditional practice. This finding is consistent with recent literature indicating that while awareness of food safety principles is increasing, behavioural adherence remains inconsistent due to habit, convenience and lack of resources (Nkosi and Tabit, 2021).

The evaluation of hygiene and safety practices showed generally good compliance in key areas like hand washing before handling raw food (81%) and after handling cooked food (82%), as well as checking expiry dates (83%). Although critical gaps were observed in the use of gloves (54%), separation of utensils (66.5%) and disinfection of cutting boards (66.5%). These suggest that while basic hygiene practices are well adopted, more technical or resource-dependent practices are less consistently followed. Similar patterns have been reported in recent studies across Africa (Sheehama and Singh, 2025; Nkosi and Tabit, 2021). The low use of gloves, for instance, may be due to cost or perceived inconvenience. Yet, this poses significant risks for contamination, especially in high-volume food service settings.

The observational assessment provided further insight into actual practices, revealing discrepancies between reported and observed practices. While a large proportion of staff were neatly dressed (84%) and had well-kept fingernails (84.5%), only 67% covered their hair, and 42.5% of premises showed evidence of disease vectors. In addition, only 68% had adequate washing facilities, and improperly cleaned utensils were observed in nearly half (49.5%) of the establishments. These findings highlight acritical issue commonly reported in food safety research: the gap between self-reported practices and actual practices (Adebayo *et al*., 2023; Ifebajo and Eboh, 2021). Environmental factors such as inadequate infrastructure, poor waste management, and limited or no regulatory enforcement likely contribute to these gaps.

The overall categorisation showed that a majority of the respondents demonstrated good hygiene practices; however, a considerable proportion still exhibited average to poor practices. Interestingly, knowledge of food safety was significantly associated with hygiene practices, whereas general food hygiene knowledge was not. This finding suggests that practical and action-oriented knowledge may be more influential in shaping behaviour than general awareness.

The lack of food hygiene knowledge and practice highlights a common challenge in similar studies, where knowledge does not necessarily translate into practice (Ncube *et al*., 2020; Islam *et al*., 2022). The gap may be due to limited access to infrastructure, such as inadequate water supply and sanitation facilities, which restrict the ability of food handlers to implement recommended practices. The cost and availability of protective materials, such as gloves and disinfectants, may discourage consistent use, particularly in small-scale or informal food establishments. Also, weak regulatory enforcement and monitoring may reduce compliance with established food safety standards. These factors suggest that improving food safety practices requires not only knowledge-based interventions but also structural and regulatory support.

Limitation of the study

This study has some limitations. First, the use of a cross-sectional design limits the ability to establish causal relationships between knowledge and hygiene practices, as data were collected at a single point in time. Also, the reliance on self-reported data may introduce social desirability and recall bias.

In addition, observational assessment of hygiene practices may be subject to observer bias, and the presence of the researchers may have influenced respondents' behaviour (Hawthorne effect). Despite these limitations, the study provides valuable insights into the knowledge and practices of food service entrepreneurs and highlights important areas for intervention

Conclusion

The findings revealed that although a high proportion of respondents were aware of food hygiene and food safety, gaps persist in specific areas of knowledge, particularly regarding food storage, cross-contamination, and critical hygiene practices.

The respondents demonstrated relatively higher knowledge of food safety compared to food hygiene, and this was reflected in the generally good level of hygiene and

food safety practices observed. However, inconsistencies between knowledge and actual practices were evident, especially in areas such as the use of protective equipment, proper sanitisation procedures and environmental hygiene.

Observational findings revealed notable environmental hygiene concerns, including inadequate sanitation facilities, the presence of disease vectors, and improper cleaning of utensils. These conditions represent significant public health risks and highlight priority areas for intervention with the study area.

Overall, while the level of compliance with basic hygiene practices among food service entrepreneurs in the study area is encouraging, the persistence of unsafe practices and environmental lapses underscores the need for targeted interventions. These should include regular food safety training programmes for food handlers, improved access to sanitation and hygiene infrastructure, and strengthened regulatory monitoring and enforcement to ensure adherence to food safety standards.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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