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Assessment of Hygiene Practices Among Food Vendors in Ikwo L.G.A of Ebonyi State

¹ Chinyere Ada Alo, ² Moses Alo, ³ Oruna Henrietta Chimmazor

¹ Department of Physical and Health Education, Alex Ekwueme Federal University, Ndufu-Alike, Nigeria

² Department of Microbiology, Alex Ekwueme Federal University, Ndufu-Alike, Nigeria

³ Department of Microbiology, David Umahi University of Health Science, Nigeria

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Corresponding Author: Chinyere Ada Alo

Abstract

This study centered on assessment of Food hygiene practices among food vendors in Ikwo L.G.A. To guide the study, three research questions were posed. The Literature review in this study was organized under conceptual framework, theoretical framework, review of related empirical studies and summary of literature review. A quantitative, cross-sectional descriptive study which took the form of an observation survey was adopted. The study was conducted within the vending sites in ikwo L.G.A. of Ebonyi state with a sample size of 60 Vendors purposefully sampled. The instrument was validated and the reliability of the instrument was 0.85. A structured questionnaire and observation checklist were used as the instrument for the collection of data and the research were analyzed descriptively using mean and standard deviation. The result

of the study revealed that mosly2vended foods in ikwo are rich in carbohydrates but deficient in proteins, poor environmental sanitation and waste handling practices, moderate adherence to food handling pract practices as foods are always covered to avoid contamination but the compliance to the standard hygiene practice is rarely upheld especially in handling food and money simultaneously by the same vendor. In line with the findings of the study, the recommendations were proffered among others that compliance to the standard hygiene practice as outline by WHO should be enforced and regularly upheld. Vendors should be encouraged to maintain high level of personal hygiene and cleanliness around the vending slights. The limitations of the study and suggestions for further studies were equally made.

Keywords: Food Vendors, Hygiene Practices, Assessment

Introduction

Food hygiene is concerned with food safety and its practices. World Health Organization (WHO, 2014) defines food hygiene and safety as the conditions and measures that are necessary during production, processing, storage, distribution and preparation of food to ensure that it is safe, sound, and wholesome and fit for human consumption (WHO, 2014). The risk of food getting contaminated depends largely on the health status of the food handlers, their personal hygiene, knowledge and practice of food hygiene (Murwira, *et al* 2015) ^[1] and regular sanitary inspection can improve adherence of food handlers to personal hygiene and food safety practices. Food vendors, also known as Food handlers play a very important role in ensuring food safety and hygiene (Emmanuel, *et al.* 2015) ^[5]. They as well play a major role in ensuring food safety throughout the chain of producing, processing, storage, and preparation of food, while mishandling and disregard for good hygiene measures on their part may result in food contamination and its attendant consequences (Williams, 2001) ^[15].

Foods are therefore prepared at informal setting and street food vendors are classified as informal. Street food vendors are thus exposed to climate and temperature, unsafe water supplies, sanitation and pests. The foods are often prepared under unsanitary conditions and stored for long periods in unsuitable conditions before selling (Mathee, *et al.* 2018).

Food poisoning and other food related diseases like typhoid and cholera could result if food is not properly handled and prepared. For example, during the worst outbreak of cholera in Nigeria, since 1991, when 7,654 people died, street food and water were reported as a possible avenue for its spread.

Food borne diseases are important public health issues in the globe and the problem is more noticeable in developing countries due to prevailing poor food handling and sanitation practices, inadequate food safety laws, weak regulatory system, lack of

financial resources to invest on safer equipment and lack of education for food handlers (Tessama, *et al.* 2014) ^[13].

In 2014, WHO recommended that member countries should ensure that street food vending is regulated and that measures are taken to ensure the education of street food vendors in hygienic food preparation principles (WHO, 2014). There is an assumption that by their nature, street food contamination is inevitable, yet millions of people depend on this source of nutrition. Education of food industry personnel in hygiene matters has been recommended as a means of improving food handling practices and thus the safety of food and hygiene by food vendors. These foods by vendors are also known as street food.

Street foods are defined by the Food and Agricultural Organisation (FAO) as ready-to-eat foods and beverages, prepared and sold by vendors and hawkers in streets and other similar public places (FAO, 2017). It is recognised internationally that these informal food supply systems, which provide low-cost nutrition, should be managed and encouraged to develop, but with the emphasis on food safety and hygiene (Consumers International, 2005) ^[4]. Due to socioeconomic changes in many countries, the street food sector has experienced phenomenal growth in the past few decades. Urbanization and population growth are expected to continue and street vended foods, which are largely but not exclusively an urban phenomenon, will expand accordingly (Atkinson 2019). Meanwhile, street food trade has emerged as an economic activity and a source of income for the poor in many developing countries.

Street foods are also considered essential for maintaining the nutritional status of the population (Maxwell, 2000) ^[10]. Various projects have shown that street food trade generates a large volume of business, involving large amounts of money and provides a competitive source of employment and income to millions of people. It is also postulated that street-food vendors, owing to their lack of or no education as well as being poor, lack an appreciation for hygienic practices of safe food handling. Consequently, this together with the surroundings that they are prepared and sold in, street food is perceived to be a major public health risk (WHO, 1996; Leus *et al.* 2006) ^[16, 8]. The main health hazard associated with street food is microbial contamination, although pesticide residues, transmission of parasites, the use of un-permitted chemical additives, environmental contamination and limited access to safe water have also been identified as possible hazards (Abdussallam & Kaferstein 2019, Arambulo, 2013). The potential for the contamination of street foods with pathogenic micro-organisms has been well documented and several disease outbreaks have been traced to consumption of contaminated street foods (Abdussallam & Kaferstein 1993) ^[1], the risk of microbial contamination is dependent on the type of street food and how the food is prepared. Food risk is influenced by food type, pH, and method of preparation, water availability, handling, exposure temperature, and holding time (Mathee, *et al.* 1996) ^[9]. Other factors implicated in causing microbial contamination include poor food preparation and handling practices, inadequate storage facilities, the personal hygiene of vendors, and a lack of adequate sanitation and refuse disposal facilities (Abdussallam & Kaferstein 2019).

This implies the importance of street vended foods hygiene and safety to the wellbeing of consumers and the

responsibility of food handlers in ensuring safety; however, there is limited information on the hygienic situation of street food vending sites and vendors compliance to food hygiene and safety measures. It is therefore hardly possible to establish the truth about the prevalence of food poisoning in the Isles in relation to street food vending practices. This can however be well evaluated by having concrete information on the vendors' hygiene practices, food handling practices and sanitary and hygiene of the food vending premises, nonetheless, the sector has acquired tiny attention. Even though prior researches (Tiisekwa, 2013) ^[14] have indicated major food safety concerns with street vended foods, it is nevertheless worth appreciating the impartial examination of the state of affairs based on the obtainable evidence. This study therefore assesses food vendors' compliance with hygiene in Ikwo L.G.A of Ebonyi State.

Statement of the Problem

According to Onyeneho (2013), Street-vended foods might cause major civic health problems due to absence of basic facilities and services, such as safe water provisions, their short duration nature, and insufficient knowledge of basic food safety protections. Nyaruhucha (2007) showed that the majority school children considered street vended foods to be unsafe to eat, which they associated with unhygienic preparation environment and keeping it uncovered. The hygiene and safety of vended food is of national and international concern. Therefore, are the food vendors in ikwo complying with the necessary hygienic practices required?

Purpose of the Study

The main purpose of this study was to assess food vendors' compliance with hygiene practices in Ikwo L.G.A of Ebonyi State. Specifically, the study determines;

- The nature of vended food in Ikwo.
- The hygienic nature of the environment used by food vendors in ikwo.
- The extent of compliance with personal hygiene among food vendors in ikwo.

Research Questions

The following research questions guided the study:

- What is the nature of vended food in ikwo?
- What is the hygienic nature of the environment used by food vendors in ikwo?
- What is the extent of compliance with personal hygiene among food vendors in ikwo?

Significance of the Study

This study on Assessing food vendors' compliance with hygiene in Ikwo L.G.A of Ebonyi State is of both theoretical and practical significance.

Theoretically, the study is of significance to Albert Bandura's social cognitive theory which illustrates the importance of our behaviour towards ensuring a better life. Also, it is of significance to the germ theory of disease which illustrates how diseases occur and transmitted which include unhygienic processes for food, so that background knowledge about such practices is gained. This background knowledge further provides first hand predictions and suggestions on how the unhygienic process will be tackled if found to exist.

Scope of the Study

This study is delimited to Assessing food vendors' compliance with hygiene practices in Ikwo L.G.A of Ebonyi State. It will examine the nature (protein, carbohydrate, etc) of vended food, the hygienic nature of the environment and the food hygienic compliance practiced by vendor. The study does not include food vendors of items that are not readily consumed, otherwise known as finger foods or hand-to-mouth foods.

Assessing food vendors' compliance with hygiene cannot be taken lightly because food safety and hygiene is becoming a key public health priority because a large number of people consume their meals outside their homes. As a result, they are exposed to food borne illnesses that originate from food stalls, restaurants and other food outlets.

Methodology

A quantitative, cross-sectional descriptive study which took the form of an observation survey was adopted to assess the adherence of street cooked food vendors to personal hygiene practice in vending sites in ikwo. Descriptive survey research uses surveys to gather data about varying subjects (Mbah & Udegbe, 2014). This method was selected so that the researcher can better define the opinion held by the respondents and so that information collected can be statistically inferred on the entire population.

Area of the Study

The study was conducted in Ebonyi state, Nigeria; particularly the vending sites in Ikwo L.G.A. Ebonyi state is one of Nigeria's 36 states, located in the south east geopolitical zone.

Population of the Study

The population of the study consists of all street food vendors selling cooked food, male and female alike, in Ikwo local government area of Ebonyi state, Nigeria.

Sample and Sampling Technique

To determine the sample size, purposive sampling was used to select street food vendors with static food vending places (since they can be located and have operated for at least 6 months) and a total of 60 food vendors were recruited for the study.

Instrument of Data Collection

In this study, questionnaire and observation checklist were the research instruments used to collect data from the sampled respondents and vending sites respectively. The questionnaire was structured in such a way that it provides answers to the research questions. The questionnaire was used as an interview guide for respondents who cannot read and write. Assessment of personal hygiene was done using an observation checklist. Confidentiality, anonymity and privacy were assured to the respondents to maintain secrecy on names and personal information.

Validation of the Instrument

The instrument was validated by three specialists, two from the department of physical and health education and one from Education Foundation (Measurement and Evaluation),

all in the faculty of education, AE-FUNAI. To ascertain the validity of the instrument, content validity was done and also face validity by the experts, who examined the items to ensure they were in line with the purpose of the study. The questionnaire was modified in line with their corrections; errors like ambiguity were minimized before using the instrument to collect data from the respondents. (See appendix for validators' comments).

Reliability of the Instrument

The reliability of the instrument was obtained by administering it to 15 street food vendors selling cooked food in Abakaliki. The reliability of the test instrument was determined using Cronbach's Alpha formula. The test yielded a reliability coefficient of 0.85.

Method of Data Collection

The researcher administered the questionnaire by direct delivery technique with the help of five colleagues as research assistant who helped to approach the respondents for the exercise; to ensure maximum return of the questionnaire. The questionnaire were administered personally and collected instantly by the assistants and delivered to the researcher.

Method of Data Analysis

The responses gotten from the respondents were analyzed using descriptive statistics of frequency and percentages represented in tables and figures.

This chapter presents the result of data analysis in line with the research questions that guided the study.

Answer to Research Questions

Table 1: Responses on the nature of vended food in Ikwo

S. No	Item	Mean	Std Dev	Rmk
1	Cooked rice is vended in ikwo	3.92	.279	AA
2	Soup and akpu is vended in ikwo	3.62	.490	AA
3	Beans and plantain is vended in ikwo	2.17	.847	BA
4	Africa salad (abacha) is vended in ikwo	2.23	.593	BA
5	Agidi and pepper soup is vended in ikwo	1.15	.360	BA
6	Okpa is vended in ikwo	2.82	.725	AA
7	Fried akara is vended in ikwo	2.12	.783	BA
8	Fried yam is vended in ikwo	3.32	.596	AA
9	Cooked yam and fiofio is vended in ikwo	1.90	.681	BA
10	Other foods are vended in ikwo	1.33	.542	BA

$N = 60$, Average = 2.5, AA = Above Average & BA = Below Average

From the table 1, the researcher found out that to a great extent, the mostly vended food in ikwo include cooked rice ($\bar{x} = 3.92$), Soup & akpu ($\bar{x} = 3.62$), okpa ($\bar{x} = 2.28$) and fried yam because they have mean values greater than the average mean value of 2.5. While beans & plantain ($\bar{x} = 2.17$), abacha ($\bar{x} = 2.23$), Agidi and pepper soup ($\bar{x} = 1.15$), Fried akara ($\bar{x} = 2.12$), Cooked yam and fiofio ($\bar{x} = 1.90$) and other foods ($\bar{x} = 1.33$) are vended to a low extent as revealed in their values which were below average of 2.5. These mostly vended foods are high in carbohydrate and low in protein on general rating.

Table 2: Responses on the hygienic nature of the environment used by food vendors in ikwo

S. No	Item	Mean	Std Dev	Rmk
1	Waste bins are made available and properly disposed in good time	2.28	.940	BA
2	Fumigation and disinfection are always carried out to eradicate vectors and its carriers	2.25	.836	BA
3	Urinary corners/ rest rooms are sited far away from eating places	3.38	.666	AA
4	There is wash hand outlet for users of the rest room	2.12	.825	BA
5	The food vending environments are kept clean from filth	2.72	1.075	AA
6	Hand washing basins are made available for regular washing of hands	2.55	.811	AA
7	The sweeping of the vending sites are done daily	3.77	.427	AA
8	Washing / mopping of the vending site floors are done daily	2.47	.700	BA
9	Cleaning of the toilet is done regularly	3.22	.585	AA
10	Washing dishes and cooking utensils are done immediately after meals.	3.25	.437	AA

N = 60, Average = 2.5, AA = Above Average & BA = Below Average

From table 2, it was revealed that the hygienic practice of the vendors are low on waste bins availability (2.28), fumigation and disinfection (2.25), wash hand outlet for users of the rest room (2.12) and washing / mopping of the vending site floors daily (2.47). Urinary corners/ rest rooms are sited far away from eating places (3.38), The food vending environments are kept clean from filth (2.72), Hand

washing basins are made available for regular washing of hands (2.55), sweeping of the vending sites are done daily (3.77), Cleaning of the toilet is done regularly (3.22) and washing of dishes and cooking utensils are done immediately after meals (3.25). These were made evident in their values which were above average of 2.5.

Table 3: Responses on the extent of compliance with personal hygiene among food vendors in ikwo

S. No	Item	Mean	Std Dev	Rmk
1	I wash my hands often with soap and water or alcohol-based hand sanitizers	5.00	.000	AA
2	I wear my apron always when handling food	4.12	.715	AA
3	My apron is clean and in neat condition during the handling of food	3.55	.699	AA
4	My apron is designed not to come into direct contact with any part of the food to contaminate the food	4.27	.756	AA
5	My Clothes are clean and in neat condition during the handling of food	4.12	.761	AA
6	My Shoes are clean and in neat condition during the handling of food	3.80	.917	AA
7	My Mouth and nose are well covered with mask during the handling of food	2.22	1.010	BA
8	My Nails are well cut during the handling of food	4.82	.431	AA
9	My hair and scalp are well cut/packed/covered during the handling of food	4.07	.821	AA
10	I do not touch ready-to-eat non-pre-packed food with bare hands	2.85	1.840	BA
11	Hands should be washed, immediately prior to the commencement of each work shift.	4.67	.542	AA
12	I wash my hands at the beginning of the day's work	4.75	.437	AA
13	I wash my hands after a rest period;	3.73	.972	AA
14	I wash my hands after every visit to a latrine or urinal	4.38	.783	AA
15	I wash my hands every time I blow my nose or sneezing	3.20	.860	BA
16	I wash my hands after I come in contact with perspiration	2.82	.651	BA
17	I wash my hands after handling a handkerchief	2.03	.956	BA
18	I wash my hands after handling money	1.73	.861	BA
19	I wash my hands after handling a refuse container or refuse	4.70	.462	AA
20	I wash my hands after handling raw vegetables, fruit or eggs	4.33	.601	AA
21	I wash my hands after handling meat or fish	4.88	.324	AA
22	I wash my hands before handling ready-to-use food.	4.28	.454	AA
23	I Clean and disinfect surfaces I use often such as bench tops, desks and doorknobs.	4.32	.725	AA
24	I strictly adhered to covering my food	5.00	.000	AA
25	I strictly adhere to protection of food from flies and dusts	5.00	.000	AA
26	I dish out food using spoon/ladle and not using bare hands.	4.60	.588	AA
27	I avoid food handling if I have jaundice	3.53	1.295	AA
28	I avoid food handling if I have diarrhea	3.85	.899	AA
29	I avoid food handling if I am vomiting	4.38	.761	AA
30	I avoid food handling if I have fever or sore throat with fever	3.80	1.190	AA
31	I avoid food handling if I have visibly infected skin lesions such as boils or cuts	3.28	1.059	BA
32	I avoid food handling if I have discharges from the ear, eye or nose	4.08	.926	AA

N = 60, Average = 3.0, AA = Above Average & BA = Below Average

From table 3, most of the hygiene practices were complied with on a regular basis which was revealed in their values above the average value of 3.0. Items like "I wash my hands after handling money" scored a very low value (1.73) which implies that it is a common practice among vendors to be handling money simultaneously and others which fell below average as shown in the table of result for compliance to hygienic practices. Covering of food and regular washing of

hands were the most common practices upheld as revealed in the result (5.00).

Conclusion

From the results obtained in the study on assessing food vendors' compliance with hygiene practices in Ikwo L.G.A of Ebonyi State, it was found that compliance to the standard hygiene practice as outline by WHO were not

being observed and should be enforced and regularly upheld. This is very important as food poisoning need to be avoided by all means. Vendors should be encouraged to maintain high level of personal hygiene and cleanliness around the vending sights as this will contribute to the safety of consumers. Meanwhile awareness should be created on the essence of maintaining a good and healthy lifestyle practice by consuming balanced diet by the populace.

Food safety and hygiene training should be a prior condition for starting a food-vending venture and be complemented with regular monitoring to ensure strict adherence to food handling practices.

Policy makers and regulatory bodies should be encouraged to monitor vending sites and ensure compliance to the standard hygiene practices.

High level of environmental sanitation and waste handling practices should be regularly enforced.

Education of the masses on the need to balance their food consumption with the necessary classes of food needed for healthy living.

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