



Assessing the Effect of Food Poisoning In Catering Establishment on Ondo West Local Government Area of Ondo State

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ABSTRACT

The study assessed the effect of food poisoning in catering establishment. One hundred and eighty (180) respondents were selected across seven (7) wards in Ondo West Local Government Area of Ondo State for the study. The study employed descriptive survey design and 4-point Likert scale self structured questionnaire was used for data collection. The instrument was subjected to face validity by experts in the department of home economics and a reliability test was carried out and was correlated using Spearman Rank Order. Responses to the questionnaire were analyzed descriptively and inferentially using mean, standard deviation and t-test. The result of the findings revealed the causes of food poisoning, its effect on the populace and the catering establishment. Further findings revealed that there is no significant difference in the mean responses of male and female respondents on the causes and consequences of food poisoning on the consumers/customers in catering establishments ($p > 0.05$). It was recommended that catering establishment owners should be educated on the effect that unhygienic practices in food production may have on the economy, the consumers and the catering establishment. Raw fruits and vegetables should be thoroughly washed with portable water and caterers must always maintain and practice good hygiene.

KEYWORDS: Food poisoning, Catering establishments, Consumers, Environment, unhygienic practices, Good hygiene

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I. INTRODUCTION

Food is one of the essential needs of living organisms, most especially human beings. Humans depend on food for optimal growth and development. Lack or inadequate consumption of healthy and balanced food could lead to underlying diseases, which includes but not limited to malnutrition and related diseases, diarrhea, dysentery, and ultimately death. Food poisoning is one of the factors that limit quality, makes it unsafe for consumption and a curse rather than a blessing. Literarily, food poisoning is an **illness** caused by eating food or drinking water contaminated with viruses, bacteria, toxins, parasites, or chemicals. Iyadi (2015) explained that “food poisoning can be seen as a common, usually mild but sometimes deadly illness which occurs after consuming a contaminated food or drink. Depending on the contaminant, fever, chills, bloody stools, dehydration and sometimes damage to the nervous system may follow.” The symptoms include nausea, vomiting, abdominal cramping, and diarrhea that suddenly occur. These symptoms may affect one person or a group of people who ate the same food or drink. Food poisoning can also be seen as health problems arising from eating contaminated foods. The foods may be contaminated by bacteria, viruses, environmental toxins or toxins present within the food itself (Food and Agriculture Organisation (FAO), 2010).

Food borne diseases are common in developing countries including Nigeria because of the prevailing poor food handling and sanitation practices, inadequate food safety laws, weak regulatory systems, lack of financial resources to invest in safer equipment, and lack of education for food-handlers (World Health Organisation, WHO, 2004). World Health Organization of the United Nations (2015) highlighted in its report that food prepared in large quantities are liable to contamination. Food business establishments in Nigeria and Ondo West Local Government in particular are booming forcing service providers to prepare food in large

quantities. Though the establishments offer good economic opportunities, prepared foods should also get proper handling and preservation in order to safeguard public health.

Foods are likely to be poisoned when they are not cooked or reheated thoroughly, not stored correctly, is left out for too long or handled by someone who is ill or has not washed their hands. The risk is higher in catering organisation because consumers does not have control over activities in the kitchen. It is almost very impossible to be able to determine how foods are cooked or reheated, stored or who handles it. For services and items like food and food providing organisations, there are several laws and control agency that are directly in charge of ensuring best practices in catering establishment. According to Olofin (2009), recognizing the importance of food safety as an important factor for achieving high level of health for all Nigerians prompted the government of Nigeria to launch the National Policy on Food Hygiene and Safety in 2000, as an integral part of the Nigerian National Health Policy. Similarly, National Agency for Food and Drug Administration and Control (NAFDAC) is another federal agency that sees to food safety.

Catering establishments have played tremendous roles in the last few decades in helping women with dual career cope with work-family conflict, student's access to cheap and nutritious foods among others. It has also served as a means of livelihood for both young and old entrepreneurs as some of them earn their living from commercial production of food to consumers. Although there are several benefits attached to catering establishment, it is not without its own dark side. There have been reported cases of food poisoning as a result of visiting commercial food providers as well as other cases related reckless spending, consumption of junks, food monotony among others.

Food poisoning is not new in catering establishments, studies in different part of the world have proved that during processing and handling, foods can get poisoned. Mekonnen *et al.* (2012) in their study of 260 food samples indicated that food provided to the consumers in Mekelle City, Ethiopia was less hygienic and had prepared under poor sanitation conditions. General hygiene of food handlers, sanitary facilities of food establishments, physical conditions of food catering establishments, disposal services, legal licensing and environmental hygiene were identified as major sanitary deficiencies. Less understanding of food hygiene among food handlers were also commonly observed. It is in the light of this background that the study assessed the effect of food poisoning in catering establishment in Ondo West Local Government Area of Ondo State.

Statement of the Problem

Civilisation, busy schedule and the "no time" syndrome has increased the need for working class men and women as well as student to find cheap and less time consuming means of obtaining food for consumption. This has in turn brings about food service providers (catering establishments) that are untrained and money minded business centric, which in turn predisposes consumers to food borne illness which of course can lead to cases of food poisoning that is not without its consequences which will not only bring about the crippling of liable catering establishments, but also an unpleasant experience to the consumers/customers of such catering establishments, the community at large and the economy in general. As a way of reducing the occurrence of food poisoning in catering establishments in Ondo West Local Government Area of Ondo Ondo state, the study found out the causes of foods poisoning in the catering establishments, brought to the fore its consequences as well as suggested ways to curb the incidence of food poisoning in catering establishments.

Purpose of the Study

The study assessed the effect of food poisoning in catering establishment in Ondo West Local Government Area of Ondo State. Specifically, the study:

1. Identified the causes of food poisoning in Ondo Local Government Area of Ondo State;
2. evaluated the consequences of food poisoning on the consumers/customers in catering establishments in the local government Area;
3. examined the consequences of food poisoning on the thriving of liable catering establishment in Ondo west;
4. suggested possible ways to curb food poisoning in catering establishments in Ondo Local Government Area of Ondo State.

Research Questions

The following questions guided the findings of the study

1. What are the causes of food poisoning in Ondo Local Government Area of Ondo State?
2. What are the consequences of food poisoning on the consumers/customers in catering establishments in the local government Area?
3. What are the consequences of food poisoning on the thriving of liable catering establishment in Ondo west?
4. What are the ways of preventing/curbing food poisoning in catering establishment?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

Ho₁: There is no significant difference in the mean responses of male and female respondents on the causes of food poisoning in catering establishment.

Ho₂: There is no significant difference in the mean responses of male and female respondents on the consequences of food poisoning on the consumers/customers in catering establishments.

Ho₃: There is no significant difference in the mean response of male and female respondents on the consequences of food poisoning on the thriving of liable catering establishment in Ondo West Local Government Area.

Ho₄: There is no significant difference in the mean response of male and female respondents on the ways of preventing/curbing food poisoning in catering establishment

Significance of the Study

Data obtained from this study would be a quality source of information to caterers, commercial food consumers, business personnel, food nutritionists and the community at large. The study would help caterers identify some of the ways by which food can be contaminated and subsequently become poisonous to human consumption. It would also suggest to these category of people how foods can be handled to ensure food safety with particular emphasis on hygiene. The findings of the study if published in articles, magazines or discussed on social media platforms could help reduce the incidence of food poisoning in catering establishments. Food nutritionist would be further informed and updated on the various means by which food become poisonous in the various catering establishments. Business personnel who intend to venture into food business would become informed about the underlying effect of food poisoning on catering establishment. Above all, it is believed that the findings of this study would improve the quality of foods that is been sold in the various catering establishments thus preventing further occurrence of food poisoning in Ondo West Local Government of Ondo State.

Scope of the Study

The study was delimited to the effect of food poisoning in catering establishment in Ondo West Local Government Area of Ondo State. The study also identified the causes of food poisoning, examined the consequences of food poisoning on the consumers/customers and the thriving of liable catering establishment in Ondo west and suggested strategies to curb food poisoning in catering establishment in Ondo West Local Government Area of Ondo State.

II. RESEARCH METHODOLOGY

Research Design

The design employed for the study was descriptive survey. This design was adopted because descriptive studies makes no attempt to manipulate variables, and it is concerned with describing and interpreting existing relationships, attitudes practical processes and tends to compare variables.

Area of the Study

The study was carried out in Ondo West Local Government Area of Ondo State in Nigeria.

Population of the Study

The population of the study comprised of all consumers and caterers in Ondo West Local Government Area of Ondo State.

Sample and Sampling Techniques

The sample size of the study consisted of 180 respondents. Convenience sampling technique was used to select wards and the catering establishment while purposive sampling technique was used to select men and women who were either food consumers (in catering establishments) or caterers as respondents for the study.

Instrument for Data Collection

A 4-point likert scale self structured questionnaire based on the specific objectives of the study consisting of items meant to elicit information from the respondents was used for the study.

Validation of Instrument

The research questionnaire items for the study were validated by the supervisor and two (2) other experts in the Department of Home Economics, Adeyemi College of Education, Ondo. Their observations, suggestions and comments were be integrated in the final copy of the instrument.

Reliability of Instrument

Test-re-test method was used for the reliability of the instrument. Twenty-three (23) copies of the questionnaire were distributed and re-distributed at an interval of two (2) weeks to respondents outside the sample size to test the level of consistency. The responses to the questionnaire were correlated using Spearman Rank Order.

Data Collection

One hundred and eighty (180) copies of the questionnaire was produced and administered personally to the respondents and the filled copies of questionnaire were collected immediately to avoid loss in transit.

Data Analysis

The responses to the questionnaire items was collated and analysed using standard deviation, mean (\bar{X}) and t-test. The mean of the questionnaire items was used and interpreted based on the statistical real limits. A cut-off point (C) was used to determine accepted or rejected items. Any mean of 2.50 and above was considered as agreed, while any mean below 2.50 was considered as disagreed. The null hypotheses were tested using t-test at 0.05 level of significance. The t-test was estimated using Statistical Package for Social Science 20 (SPSS 20).

III. RESULTS

Causes of Food Poisoning

Table 1 revealed that mean responses on items 1, 2, 3, 4, 5, 7, 8, 9, 10 ranged from 2.54 - 3.46. This indicates that the respondents agreed with the items statement as some of the causes of food poisoning in Ondo West Local Government Area of Ondo State. because their mean were above the cut off point of 2.50. In other words, respondents agreed that food poisoning in catering establishment is caused by ingestion of food containing microorganisms, poor hygiene practices, careless handling of raw food, unhealthy cooking practices and food contamination. Similarly, respondents agreed that raw foods such as meat, poultry, fish and shellfish, eggs, unpasteurized milk, and dairy products are the most favourable foodstuff for pathogenic bacterial growth and the cause of illness, cross-contamination, cooking food in unhygienic conditions and environment and unhealthy food preparation can lead to food poisoning. However, the mean responses on item 6 was 2.43. The value was below the cut off point of 2.50, this implies that the respondents disagree with the item statement that the use of unwholesome ingredients by food sellers can use food poisoning. The standard deviation of the responses ranged from 0.855 - 1.144 and were relatively low. This indicates that the responses were clustered around the mean.

Table 1: Mean and standard deviation of responses of male and female respondents on the causes of food poisoning in Ondo Local Government Area of Ondo State

S/N	Possible Causes of Food Poisoning	N ₁ = 80, N ₂ = 100, N ₃ = 180, C = 2.5				Decision
		\bar{X}_3	SD	\bar{X}_1	\bar{X}_2	
1.	Ingestion of food containing microorganisms.	3.46	0.893	3.51	3.41	Agree
2.	Poor hygiene practices increase the rate of transfer of microorganism to food.	3.29	0.906	3.39	3.21	Agree
3.	Raw food stuffs contain microorganisms which may be transferred to processed foods by careless handling.	3.11	0.855	3.21	3.02	Agree
4.	Unhealthy cooking practices causes food poisoning.	2.97	0.960	3.11	2.86	Agree
5.	Food can be contaminated at any point of production such as the growing, harvesting, storing, shipping or preparing process.	2.83	0.977	2.96	2.73	Agree
6.	Use of unwholesome ingredients foods by food sellers can cause food poisoning.	2.43	1.089	2.59	2.31	Disagree
7.	Raw foods such as meat, poultry, fish and shellfish, eggs, unpasteurized milk, and dairy products are the most favorable foodstuff for pathogenic bacterial growth and the cause of illness.	2.54	1.027	2.68	2.43	Agree
8.	Cross-contamination (the transfer of harmful organisms from one surface to another).	2.57	1.144	2.73	2.45	Agree
9.	Cooking food in unhygienic conditions and environment.	3.27	0.882	3.38	3.18	Agree
10.	Unhealthy food preparation.	3.30	1.019	3.40	3.22	Agree

Key: N₃ –total number of respondents, N₂ –number of male respondents, N₁ –number of female respondents, C – cut-off point, \bar{X}_3 - mean response of all respondents, \bar{X}_2 - mean response of male respondents, \bar{X}_1 - mean response of female respondents, SD – Standard deviation

Table 2 revealed that the p-value (0.052) was greater than the level of significance (0.05). This implies that there is no significant difference in the mean responses of male and female respondents on the causes of food poisoning in catering establishment in Ondo West Local Government Area of Ondo State. Hence, the null hypothesis is accepted.

Table 2: t-test Statistics showing the mean responses of male and female respondents on the causes of food poisoning in catering establishment

Variables	N	\bar{X}	Std. Deviation	df	t-cal	p-value	Decision
Male	100	30.54	8.448	178	1.268	0.052	Not significant
Female	80	28.80	9.953				

Key: N = number of respondents, \bar{X} = mean, SD = standard deviation, df = degree of freedom, t-cal = t-test calculated value.

Consequences of food poisoning on the consumers/customers in catering establishments

Table 3 revealed that mean responses on items 1, 2, 3, 4, 5, 6, 7, 8 ranged from 2.67 - 3.68. This indicates that the respondents agreed with the items statement as some of the consequences of food poisoning on the consumers/customers in catering establishments in Ondo West Local Government Area of Ondo State. In other words, respondents agreed that some of the consequences of food poisoning include illness from contaminated foods, damaging the intestinal epithelium, and causing gastroenteritis, vomiting and diarrhoea and miscarriage early in pregnancy. Similarly, they agreed that ingestion of food that contains a toxin, chemical or infectious agent such as a bacterium, virus or parasite may cause adverse symptoms in the body and that food poisoning weakens immune systems and damages the lining of the tiny blood vessels in the kidneys, sometimes leading to kidney failure. While, the mean responses on item 5 and 6 were both 2.29 which were below the cut off point of 2.50. This indicate that the respondents disagree with the item 5 and 6, in other words, the respondents disagree that later in pregnancy, food poisoning may lead to still birth, premature birth and potential fatal infection in the baby after birth. The standard deviation range between 0.585 – 1.127 and were relatively low. This indicates that responses were clustered around the mean. There is no significant difference in the mean responses of male and female respondents on the consequences of food poisoning on the consumers/customers in catering establishments.

Table 3: Mean and standard deviation of responses of male and female respondents on the consequences of food poisoning on the consumers/customers in catering establishments in Ondo West local government Area

S/N	Possible Consequences of Food Poisoning on the Consumers/Customers in Catering Establishments	N ₁ = 80, N ₂ = 100, N ₃ = 180, C = 2.5				
		\bar{X}_3	SD	\bar{X}_1	\bar{X}_2	Decision
1.	Illness from contaminated foods.	3.52	.736	3.58	3.47	Agree
2.	Damaging the intestinal epithelium, and causing gastroenteritis	3.06	.756	3.15	2.99	Agree
3.	Typically most foodborne diseases cause vomiting and diarrhea.	2.89	.849	3.00	2.81	Agree
4.	Early in pregnancy, food poisoning may lead to miscarriage.	2.67	.986	2.80	2.56	Agree
5.	Later in pregnancy, food poisoning may lead to stillbirth, premature birth or a potentially fatal infection in the baby after birth.	2.29	1.127	2.43	2.19	Disagree
6.	Consistent vomiting can lead to dehydration and electrolyte abnormalities.	2.29	1.001	2.44	2.18	Disagree
7.	Ingestion of food that contains a toxin, chemical or infectious agent such as a bacterium, virus or parasite may cause adverse symptoms in the body.	2.77	1.089	2.91	2.65	Agree
8.	Food poisoning weakens immune systems and damages the lining of the tiny blood vessels in the kidneys, sometimes leading to kidney failure.	3.68	.585	3.74	3.63	Agree

Key: N₃ –total number of respondents, N₂ –number of male respondents, N₁ –number of female respondents, C – cut-off point, \bar{X}_3 - mean response of all respondents, \bar{X}_2 - mean response of male respondents, \bar{X}_1 - mean response of female respondents, SD – Standard deviation

Table 4 revealed that the p-value (0.086) was greater than the level of significance (0.05). This implies that there is no significant difference in the mean responses of male and female respondents on the consequences of food poisoning on the consumers/customers in catering establishments in Ondo West Local Government Area of Ondo State. Hence, the null hypothesis is accepted.

Table 4: t-test Statistics showing the mean responses of male and female respondents on the consequences of food poisoning on the consumers/customers in catering establishments

Variables	N	\bar{X}	Std. Deviation	Df	t-cal	p-value	Decision
Male	100	23.69	6.095	178	1.187	0.086	Not significant
Female	80	22.53	7.066				

Key: N = number of respondents, \bar{X} = mean, SD = standard deviation, df = degree of freedom, t-cal = t-test calculated value.

Consequences of food poisoning on the thriving of liable catering establishment

The mean responses on items 1, 2 and 3 range from 2.72 - 3.41 were as revealed in Table 5. This indicates that the respondents agreed with the items statement as some of the consequences of food poisoning on the thriving of liable catering establishments in Ondo West Local Government Area of Ondo State. In other words, respondents agreed that recurring food poisoning in catering establishment blacklists the establishment, consumers usually avoid catering establishment known for or prone to food poisoning and that catering establishment with recurring food poisoning can experience waste of food and ultimately loss. The respondents however disagree with the item 4 statement because the mean responses (2.40) was below the cut off point of 2.50. This indicates that the respondents do not agree that food poisoning can strip owners of livelihood. The standard deviation ranged between 0.824 – 1.104 and were low. This implies that the mean responses were clustered around the mean.

Table 5: Mean and standard deviation of responses of male and female respondents on the consequences of food poisoning on the thriving of liable catering establishment in Ondo West local government Area

S/N	Possible Consequences of Food Poisoning on the thriving of liable Catering Establishment	N ₁ = 80, N ₂ = 100, N ₃ = 180, C = 2.5				
		\bar{X}_3	SD	\bar{X}_1	\bar{X}_2	Decision
1.	Recurring food poisoning in catering establishment blacklists the establishment.	3.41	.824	3.49	3.35	Agree
2.	Consumers usually avoid catering establishment known for or prone to food poisoning.	3.04	.841	3.14	2.96	Agree
3.	Catering establishment with recurring food poisoning can experience waste of food and ultimately loss.	2.72	.897	2.82	2.64	Agree
4.	Food poisoning can strip owners of livelihood.	2.00	1.104	2.14	1.89	Disagree

Key: N₃ –total number of respondents, N₂ –number of male respondents, N₁ –number of female respondents, C – cut-off point, \bar{X}_1 - mean response of all respondents, \bar{X}_1 - mean response of male respondents, \bar{X}_1 - mean response of female respondents, SD – Standard deviation

Table 6 revealed that the p-value (0.052) was greater than the level of significance (0.05). This implies that there is no significant difference in the mean response of male and female respondents on the consequences of food poisoning on the thriving of liable catering establishment in Ondo West Local Government Area of Ondo State. Hence, the null hypothesis is accepted.

Table 6: t-test Statistics showing the mean responses of male and female respondents on the consequences of food poisoning on the thriving of liable catering establishment

Variables	N	\bar{X}_1	Std. Deviation	Df	t-cal	p-value	Decision
Male	100	11.42	3.101	178	1.106	0.052	Not significant
Female	80	10.86	3.662				

Key: N = number of respondents, \bar{X}_1 = mean, SD = standard deviation, df = degree of freedom, t-cal = t-test calculated value

Ways of preventing/curb food poisoning in catering establishment

Table 7 revealed that mean responses on items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 ranged from 2.56 - 3.32. This indicates that the respondents agreed to the items statement as some of the ways of preventing/curb food poisoning in catering establishment in Ondo West Local Government Area of Ondo State. In other words, respondents agreed that intensive education about food safety should be given to workers in catering establishments, catering establishment owners should be made aware of the impact that different practices in food production may have on the economy, in catering establishments, raw fruits and vegetables should be thoroughly washed with tap water and that caterers should always keep clean hands, kitchen, and chopping board all times. In the same vein, respondents agreed that in food handling and preparation, caterers should not mix raw meat and ready-to-eat food, in food handling and preparation, caterers should not mix raw meat, fish, and raw vegetables, use safe drinking water for preparing food and that caterers should use raw materials. Also, respondents agreed that food items should be properly stored by caterers, laboratory capacity must be strengthened to be able to detect contaminants, thus translating the result of food borne diseases into food safety, strong coordination and cross border action across the entire food supply is highly required and that food agencies in the nation should coordinate, monitor and supervise the activities of food caterers. Thou, the mean responses of item 7 which was 2.44 show that the respondents disagree with the statement of the items that through cooking of all meats, poultry and sea foods especially shell fish is one of the possible ways of preventing/curbing food poisoning in catering establishment. The standard deviation of the responses ranged from 2.40 – 1.071 and were low. This indicates that the responses were clustered around the mean.

Table 7: Mean and standard deviation of responses of male and female respondents on the ways of preventing/curb food poisoning in catering establishment in Ondo West local government Area

S/N	Possible Ways of Preventing/Curbing Food Poisoning in Catering Establishment	N ₁ = 80, N ₂ = 100, N ₃ = 180, C = 2.5				
		\bar{X}_3	SD	\bar{X}_1	\bar{X}_2	Decision
1.	Intensive education about food safety should be given to workers in catering establishments.	3.25	.991	3.36	3.16	Agree
2.	Catering establishment owners should be made aware of the impact that different practices in food production may have on the economy.	3.23	.920	3.32	3.15	Agree
3.	In catering establishments, raw fruits and vegetables should be thoroughly washed with tap water.	3.07	.961	3.20	2.96	Agree
4.	Caterers should always keep clean hands, kitchen, and chopping board all times.	3.02	.842	3.14	2.92	Agree
5.	In food handling and preparation, caterers should not mix raw meat and ready-to-eat food.	2.92	.921	3.04	2.82	Agree
6.	In food handling and preparation, caterers should not mix raw meat, fish, and raw vegetables	2.59	1.071	2.74	2.48	Agree
7.	Caterers should thoroughly cook all meat, poultry, and seafood, especially shell fish	2.44	.998	2.58	2.33	Disagree
8.	Use safe drinking water for preparing food	3.30	.939	3.39	3.23	Agree

9.	Caterers should use raw materials.	2.56	1.042	2.70	2.45	Agree
10.	Food items should be properly stored by caterers.	3.30	.939	3.39	3.23	Agree
11.	Laboratory capacity must be strengthened to be able to detect contaminants, thus translating the result of food borne diseases into food safety.	2.73	1.012	2.85	2.64	Agree
12.	Strong coordination and cross border action across the entire food supply is highly required.	2.66	1.059	2.80	2.54	Agree
13.	Food agencies in the nation should coordinate, monitor and supervise the activities of food caterers.	3.32	.949	3.41	3.25	Agree

Key: N_3 –total number of respondents, N_2 –number of male respondents, N_1 –number of female respondents, C – cut-off point, \bar{X}_3 - mean response of all respondents, \bar{X}_2 - mean response of male respondents, \bar{X}_1 –mean response of female respondents, SD – Standard deviation

Table 8 revealed that the p-value (0.073) was greater than the level of significance (0.05). This implies that there is no significant difference in the mean response of male and female respondents on the ways of preventing/curbing food poisoning in catering establishment in Ondo West Local Government Area of Ondo State. Hence, the null hypothesis is accepted.

Table 8: t-test Statistics showing the mean responses of male and female respondents on the ways of preventing/curbing food poisoning in catering establishment

Variables	N	\bar{X}	Std. Deviation	df	t-cal	p-value	Decision
Male	100	39.39	11.143	178	1.260	0.073	Not significant
Female	80	37.13	12.964				

Key: N = number of respondents, \bar{X} = mean, SD = standard deviation, df = degree of freedom, t -cal = t-test calculated value.

IV. Discussion

Food poisoning is common in catering establishments, based on the findings of the study, it was observed that food poisoning is caused by ingestion of food containing microorganisms, poor hygiene practices, careless handling of raw food, unhealthy cooking practices and food contamination. It was also caused by raw foods such as meat, poultry, fish and shellfish, eggs, unpasteurized milk, and dairy products are the most favourable foodstuff for pathogenic bacterial growth and the cause of illness, cross-contamination, cooking food in unhygienic conditions and environment and unhealthy food preparation can lead to food poisoning. The result of this study is in line with the finding, Uçar *et al.*, (2016) noted that food borne infection is caused by the ingestion of food containing live bacteria which grow and establish themselves in the human intestinal tract. Also, Albrecht (2020) reported that for a food borne illness (poisoning) to occur, microorganism or its toxin must be present in food and the situation must support its growth and development. Furthermore, Ray and Bhunia (2013) stated that bacteria can contaminate food at any time during harvesting, processing, storage, and shipping as well as during the preparation of food in restaurants or kitchens if food preparers do not wash their hands, kitchen utensils, cutting boards, or other kitchen surfaces properly.

It is evident from the findings of the study that food poisoning has grave consequences on the food consumers, in that food poisoning could lead to illness from contaminated foods, damage the intestinal epithelium, and cause gastroenteritis, vomiting and diarrhoea and miscarriage in pregnancy. Also, food poisoning could cause adverse symptoms in the body and weaken immune systems as well as damage the lining of the tiny blood vessels in the kidneys, sometimes leading to kidney failure. This is in line with this findings of Wedro (2020) who revealed that food poisoning is a food borne disease, which on ingestion of food that contains a toxin, chemical or infectious agent (like a bacterium, virus, parasite, or prion) may cause adverse symptoms in the body. Newell *et al.* (2010) also opined that most of the food borne viruses are infectious and spreads so fast from one individual to another and are capable of causing significant illness and mortality in humans. Other consequences of food poisoning on the thriving of liable catering establishments include blacklisting the establishment, consumers usually avoid catering establishment known for or prone to food poisoning as well as waste of food and ultimately loss.

In order to ensure that catering establishments are free of food poisoning, respondents suggested that intensive education about food safety should be given to workers in catering establishments, catering establishment owners should be made aware of the impact that different practices in food production may have on the economy, in catering establishments, raw fruits and vegetables should be thoroughly washed with tap water and that caterers should always keep clean hands, kitchen, and chopping board all times. In the same vein, respondents agreed that in food handling and preparation, caterers should not mix raw food material and ready-to-eat food, in food handling and preparation, caterers should not mix raw meat, fish, and raw vegetables, use safe drinking water for preparing food. Also, respondents agreed that food items should be properly stored by caterers, laboratory capacity must be strengthened to be able to detect contaminants, thus translating the result of food borne diseases into food safety, strong coordination and cross border action across the entire food supply is

highly required and that food agencies in the nation should coordinate, monitor and supervise the activities of food caterers. In line with this finding, the WHO (2016) recommends some basic principles for food safety which include keep clean, separate raw and cooked food, cook thoroughly, keep food at safe temperatures and use safe water and raw materials.

V. Conclusion

Food poisoning is as a result of poor storage, improper cooking and poor handling of foods. In addition to this, food poisoning can also be caused by poor knowledge about the food items and preparation techniques. Food poisoning can alter the health of the consumer and can make them very sick to the point of death. It can also account for loss of customers, money and business on the part of caterers and food establishment owners. In order to reduce the occurrence of food poisoning in catering establishment it is important for food handlers including caterers and consumers to develop good hygienic practices and follow the guidelines stipulated by the World Health Organisation on food handling.

VI. Recommendations

Based on the findings made and the conclusion drawn, the following recommendations were made: the government and agencies involved in the regulation of food and drugs should make an attempt to offer intensive education about food to workers in catering establishments, catering establishment owners should be made aware of the impact that different practices in food production may have on the economy and strong coordination and cross border action across the entire food supply is highly required with food agencies directly and indirectly involved in nationwide coordination, monitoring and supervision the activities of food caterers.

References

- [1]. Albrecht, J. (2020). Food Poisoning (Foodborne Illness). Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln. Retrieved from <https://food.unl.edu/food-poisoning-foodborne-illness>.
- [2]. Food and Agriculture Organisation (FAO) (2010). Informal food distribution sector in Africa (Street foods): Importance and challenges. Rome: FAO.
- [3]. Iyadi, R. C. (2015). Consumers' perception of safety of food in South – South and South – East of Nigeria. An Unpublished Ph.D Theses of the University of Nigeria, Nsukka.
- [4]. Mekonnen, H., Habtamu, T., & Kelali, A., 2012. Source(s) of contamination of 'raw' and 'ready-to-eat' foods and their public health risks in Mekelle City, Ethiopia. *ABB Journal of Food and Agriculture Science*, 2(2), 20-29.
- [5]. Newell, D. G., Koopmans, M., Verhoef, L., Duizer, E., Aidara-Kane, A., Sprong, H., Opsteegh, M., Langelaar, M., Threlfall, J., Scheutz, F., Giessen, J.V.D., & Kruse, H., 2010. Food-borne diseases—the challenges of 20years ago still persist while new ones continue to emerge. *Int. J. Food Microbiol.* 139, S3–S15.
- [6]. Olofin, E., 2009. Assessment of agriculture system used by resource-poor groups in urban and semi-urban environments in Kano. *Journal of Agricultural Development in Nigeria*, 4(1), 22-28.
- [7]. Ray, B., & Bhunia, A. (2013). Factors influencing microbial growth in food. In: *Fundamental Food Microbiology*, fifth ed. Florida: CRC Press Taylor & Francis Group, LLC, Boca Raton.
- [8]. Uçar, A., Yilmaz, M.V., & Çakıroğlu, F.P. (2016). Food safety—problems and solutions. In: *Significance, Prevention and Control of Food Related Diseases*. In Tech, EU, Croatia. Chapter 1, <https://doi.org/10.5772/63176>.
- [9]. Wedro, B. (2020). Food Poisoning Symptoms, Types, Causes, and Treatment. MedicineNet. Retrieved from https://www.medicinenet.com/food_poisoning/article.htm
- [10]. World Health Organisation (2004). Regional Office for Africa. Developing and maintaining food safety control systems for Africa current status and prospects for change. Second FAO/WHO Global Forum of Food Safety Regulators, Bangkok, Thailand, pp. 12-14.
- [11]. World Health Organization of the United Nations (2015). Report of the Evaluation of the Codex Alimentarius and other FAO and WHO food standards work. Retrieved from https://www.who.int/foodsafety/codex/en/codex_eval_report_en.pdf?ua=1
- [12]. World Health Organization (2016). Burden of Foodborne Diseases in the South-East Asia Region. WHO Regional Office for South-East Asia, India.