

Safety Education on Vendors' Knowledge and Attitude towards Food Hygiene in Atiba Local Government Area of Oyo State, Nigeria

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Abstract

This study examined effect of safety education on vendors' knowledge and attitude towards food hygiene in Atiba Local Government Area of Oyo State, Nigeria. The study adopted pretest-posttest control group design. The participants were food vendors in Atiba Local Government Area of Oyo State. The purposive, systematic and voluntarism technique were used to select twenty five (25) vendor each as participants for experimental and control group respectively; with a total of 50 participants. Knowledge and Attitude towards Food Hygiene Questionnaire was used for collection of data and yielded a reliability value of 0.72. The two hypotheses were tested at 0.05 alpha level. Data were analysed using inferential statistics of Analysis of Covariance (ANCOVA). There was a significant main effect of treatment on knowledge of food hygiene among vendors in Atiba Local Government Area ($F_{(1,46)}= 16.939$, $p<0.05$, $\eta^2=0.153$) There was also a significant main effect of treatment on attitude towards food hygiene among vendors in Atiba Local Government Area ($F_{(1,46)}=12.895$, $p<0.05$, $\eta^2=0.218$). It was therefore concluded that, safety education (treatment) had significant effect on knowledge and attitude towards food hygiene among vendors in Atiba Local Government Area. It was recommended among others that, public health education and sensitization on food hygiene should be carried out periodically.

Keywords: Safety Education, Knowledge, Attitude and food hygiene.

Introduction

The increasing rate of poor food hygiene and safety in most countries around the world has been ascertained as a serious public health problem, particularly in developing countries. According to Abraham, Pai, Kang, Asokan, Magesh, Bhattacharji and Rama (1997), food borne illnesses are a widespread public health problem globally; in which developing countries bear the brunt of the problem due to the presence of a wide range of food-borne diseases. In India an estimated 4,00,000 children below five years age die each year due to diarrhoea. Several millions more suffer from multiple episodes of diarrhoea and still others fall ill on account of hepatitis A and enteric fever which are caused by poor hygiene and unsafe drinking water (Acharya and Shah, 1999).

Food hygiene is described as the conditions and measures necessary to ensure the safety of food from production to consumption. Food can become contaminated at any point during slaughtering or harvesting, processing, storage, distribution, transportation and

preparation. Food hygiene is an essential aspect of food safety. It refers to the processes that directly involve food; including storage, preparation and cooking. Good practices in these areas ensure that customers receive food that's safe and as described. On the other hand, food Safety covers all aspects of ensuring that food is safe for a person to eat, whereas food hygiene usually more specifically concerns foodborne illnesses, which arise because of primarily bacterial contaminants, but also chemicals and physical hazards (Burton, 2018).

The key elements of food hygiene are personal hygiene, preventing cross-contamination, cleaning procedures, allergen control, safe storage of food and cooking temperatures. Burton, (2018) expressed that personal hygiene includes hand washing, protective clothing, illness procedures and other duties (such as avoiding smoking). In addition, preventing cross-contamination includes preventing bacterial, physical, chemical, and allergenic contamination, particularly by having appropriate equipment in place (such as separate cutting boards). In cleaning procedures, thorough cleaning of the kitchen, equipment, and kitchenware including plates and cutlery is vital. Safe storage of food includes storage locations and containers, labelling and temperature control.

Food safety law requires businesses to provide food handlers with an understanding of food safety. This enables them to minimize contamination when handling food products and help their establishment uphold a suitable safety system. Cross-contamination occurs when an individual handles food in a way that allows harmful bacteria or allergens to spread from one surface to another. Avoiding cross-contamination in the kitchen and other food settings is essential. Even the smallest amount of contamination can lead to food poisoning and allergic reactions. Food-poisoning bacteria, such as E.coli and salmonella, can easily spread from food onto countertops, utensils, and people's hands (which are the primary cause of cross-contamination) and then onto ready-to-eat food. Likewise, traces of allergens can spread to other food when people handle allergenic foods unsafely. Poor hygiene practices often lead to food going out of date or becoming unsuitable for consumption (Burton, 2018).

Anand, Jeyasekaran, Shekila and Edwin (2002) and (Burton, 2018) opined that food safety and hygiene programmes have become increasingly necessary due to technological advances in food and agricultural sectors and also due to social changes introducing new food habits. Increased world production, urbanization, industrialization and migration have however introduced new food safety problems into our food supply. Anyone who works with food has a legal duty to understand food hygiene. However, the level of knowledge they require depends on their specific duties and how involved they are in food preparation. They may even need a wider understanding of food safety in some cases. An effective way to communicate this information is through food hygiene training, which teaches food handlers how to apply proper handling, storage and cleaning techniques. These good practices prevent customers from suffering food poisoning and allergic reactions, help minimize food waste and boost efficiency. This study therefore, examined effect of safety education on vendors' knowledge and attitude towards food hygiene in Atiba Local Government Area of Oyo State, Nigeria.

Statement of the Problem

Most of the street food recipes are very simple, involving limited utensils and material for the preparation. Hence, poor hygiene and sanitation practices are one of the major bottlenecks in street food vending. Inadequate water availability, location near garbage, exposure to atmospheric pollutants and poor personal hygiene practices of personal involved, all precipitate to higher incidents of health problems. Studies revealed that food-borne diseases are a serious health hazard and important cause of morbidity and mortality in developing countries. Most cases go unreported and scientific investigations are rarely feasible. Empirical studies showed that the incidence of food-borne disease outbreaks were due to microorganisms like Salmonella, Campylobacter jejuni, toxins like Y. enterocolitica, consumption of rancid biscuits characterized by vomiting, abdominal pain and diarrhea among the affected children, consumption of rice and soup contaminated with lead and copper (Devi, 2005; Bansal and Kaul, 2004; Bal and Nath, 2005). While there have been a few nationwide surveys to understand the profile of food intake and nutritional status of the people, only limited studies have been carried out to understand the food eating habits, wholesomeness of food consumed, hygiene and knowledge and attitude of the people towards food hygiene, particularly the street food vendors. An effective way to tackle the challenge of poor food hygiene is through food hygiene training, which teaches food handlers how to apply proper handling, storage and cleaning techniques. These good practices in turn prevent customers from suffering food poisoning and allergic reactions, help minimize food waste and boost efficiency. This study therefore, examined effect of safety education on vendors' knowledge and attitude towards food hygiene in Atiba Local Government Area of Oyo State, Nigeria.

Purpose of the Study

The purpose of this study was to examine the effect of safety education on knowledge and attitude towards food hygiene among vendors in Atiba Local Government Area, Oyo State.

Specific Objectives

The specific objectives of this study were to:

1. Establish the effect of training on knowledge of food hygiene among vendors in Atiba Local Government Area.
2. Examine the effect of training on attitude towards food hygiene among food vendors in Atiba Local Government Area.

Methodology

The pretest-posttest control group design was used for the study. However, assignment into treatment and control group was done by balloting. This afforded the researcher the opportunity to compare the participants in the control group and their experimental counterpart within 8 weeks of training; for purpose of examining the difference in their measured outcome. The population comprised food vendors in Atiba Local Government Area of Oyo State. The participants are street food vendors that are selling ready-to eat foods in Atiba Local Government Area. The sample size for this study comprised fifty (50) food vendors in Atiba Local Government Area as participants. Twenty five (25) participants were

assigned to experimental and control group respectively. The participants were selected through purposive, systematic and voluntarism technique. Purposive sampling technique was used to consider those vendors that are attending the food vendors association's meeting regularly. In addition, systematic sampling technique was used to classify the first set of registered volunteers on the attendance list as experimental group, while others were categorized as control. Voluntarism was used to select twenty five (25) participants each for both experimental and control group respectively. The training was therefore carried out in Atiba.

A self-developed and validated questionnaire titled; Knowledge and Attitude towards Food Hygiene Questionnaire (KATFHQ) was used for data collection. The instrument was validated by experts in the field of Health Education as well as specialists in the Ministry of Health and Environment. The data generated through pre-testing of the instrument were then subjected to factor analysis. The instrument was divided into three sections, that is, A, B and C. Section A involved socio-demographic characteristics of the participants, section B entailed Knowledge of Food Hygiene Scale (KSFHS) with 9 items, while Section C consist Attitude towards Food Hygiene Scale (ATFHS) with 10 items. Each response was scored on a 4-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The items were used for the treatment of experimental group. On the other hand, malaria education was used to train the control group. Consequently, a self-developed training manual was followed as a guide to train the participants; while the researchers used demonstration method to teach.

Section A: Socio-Demographic Information

The items in in section A included age and level of education.

Section B: Knowledge of Food Hygiene Scale (KSFHS)

Knowledge of Food Hygiene Scale was used to collect information on dependent variable of knowledge. Nine items of the questionnaire dealing with knowledge were generated and responded to during the pre-testing of the instrument. Thereafter, generated data were subjected to factor analysis, with 0.60 as criterion for retention of items. A cronbach alpha method was used to test the internal consistency of KSFHS and it yielded a reliability of 0.70.

Section C: Attitude towards Food Hygiene Scale (ATFHS)

Attitude towards Food Hygiene Scale was used to collect information on attitude as a dependent variable. Ten items were generated and responded to during the pre-testing of the instrument. Thereafter, generated data were subjected to factor analysis, with 0.60 as criterion for retention of items. A cronbach alpha method was used to test the internal consistency of ATFHS and it yielded a reliability of 0.71. In addition, the entire questionnaire which included Knowledge of Food Hygiene as well as Attitude towards Food Hygiene Scale was also subjected to reliability test. The instrument yielded a reliability value of 0.72.

Statistical Analysis

The filled copies of questionnaire were analysed using inferential statistics of Analysis of Covariance (ANCOVA); while a *p*-value equal or less than 0.05 was accepted as significant for each statistical test.

Test of Hypotheses

The following hypotheses were tested in the study:

Null Hypothesis 1: There is no significant main effect of training on knowledge of food hygiene among vendors in Atiba Local Government Area.

Table 1: Summary of result showing the pre-post effects of training on knowledge of food hygiene among vendors in Atiba Local Government Area

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4381.521	5	876.30	13.281	.000	.414
Intercept	1302.607	1	1302.60	19.741	.000	.174
Pretest Knowledge	508.165	1	508.165	7.701	.007	.076
Posttest Knowledge	9.359	1	9.359	.142	.707	.002
Treatment	1117.699	1	1117.69	16.939	.000	.153
Error	6202.479	46	134.837			
Total	158040.00	50				
Corrected Total	10584.00	49				

As shown in Table 1, there was a significant main effect of training on knowledge of food hygiene among vendors in Atiba Local Government Area ($F_{(1,46)}=16.939$, $p<0.05$, $\eta^2=0.153$); hence, the hypothesis was rejected. This implies that the training contributed significantly to the variation in participants' scores on knowledge of food hygiene. The eta square value of 0.153 revealed that the training (safety education) had a contribution of 15.3% to the participants' knowledge of food hygiene.

Table 2: ANCOVA of estimated marginal means of participants' knowledge of food hygiene by training

Dependent Variable	Treatment Groups	Mean	Std. Error	95% confidence interval	
				Lower Bound	Upper Bound
Knowledge	Safety Education (Treatment group)	42.767	1.321	40.144	45.391
	Control group	33.683	1.541	30.623	36.743

Table 2 shows the ANCOVA of estimated marginal means which revealed that participants exposed to safety education (treatment group) had higher posttest mean score ($\bar{x}=42.767$) on knowledge of food hygiene than the participants in the control group with posttest

mean score of 33.683. This means that participants exposed to safety education performed better than those in the control group. It means that safety education is an effective programme that can increase knowledge on food hygiene.

Null Hypothesis 2: There is no significant main effect of training on attitude towards food hygiene among vendors in Atiba Local Government Area.

Table 3: Summary of result showing the pre-post effects of training on attitude towards food hygiene among vendors in Atiba Local Government Area

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1471.409	5	294.282	17.027	.000	.475
Intercept	282.472	1	282.472	16.344	.000	.148
Pretest Attitude	47.078	1	47.078	2.724	.102	.028
Posttest Attitude	452.002	1	452.002	26.153	.000	.218
Treatment	222.863	1	222.863	12.895	.001	.121
Error	1624.591	46	35.317			
Total	52380.000	50				
Corrected Total	3096.000	49				

As indicated in Table 3, there was a significant main effect of training on attitude towards food hygiene among vendors in Atiba Local Government Area ($F_{(1,46)}=12.895$, $p<0.05$, $\eta^2=0.218$); hence, the hypothesis was rejected. This means that the training contributed significantly to the variation in participants' scores on attitude towards food hygiene. The eta square value of 0.218 showed that the training (safety education) had a contribution of 21.8% to the participants' attitude towards food hygiene.

Table 4: ANCOVA of estimated marginal means of participants' attitude towards food hygiene by training

Dependent Variable	Treatment Group	Mean	Std. Error	95% confidence interval	
				Lower Bound	Upper Bound
Attitude	Safety Education (Treatment group)	24.193	.676	22.851	25.536
	Control group	20.137	.789	18.571	21.703

Table 4 shows the ANCOVA of estimated marginal means which revealed that, participants exposed to safety education (treatment group) had higher posttest mean score ($\bar{x}=24.193$) on attitude towards food hygiene than the participants in the control group with posttest mean score of 20.137. This means that participants exposed to safety education

performed better than those in the control group. It implies that safety education is an effective programme that can increase attitude towards food hygiene.

Discussion of Findings

The finding of this study revealed that, treatment had significant effect on knowledge of food hygiene among the participants. This means that safety education which was used as treatment for the experimental group was significantly effective on their knowledge about food hygiene. The implication is that, the exposure of the treatment group through safety education brought about difference in knowledge of food hygiene between the experimental and control group. This brought about deeper and better understanding about food hygiene which was demonstrated by the experimental group over their counterparts in the control group. The outcome of this study on knowledge of food hygiene was in line with the finding of Anand, Jeyasekaran, Shekila and Edwin (2002) that, food safety and hygiene programmes have become increasingly necessary due to technological advances in food and agricultural sectors and also due to social changes introducing new food habits. The present outcome was also in line with the finding of Burton (2018) that poor hygiene practices often lead to food going out of date or becoming unsuitable for consumption.

The outcome of this study revealed that, treatment had significant effect on attitude towards food hygiene among the participants. This means that safety education which was used as treatment for the experimental group was significantly effective on their attitude towards food hygiene. The implication is that, the exposure of the treatment group through safety education brought about difference in attitude towards food hygiene between the experimental and control group. It resulted to better attitude towards food hygiene which was demonstrated by the experimental group over their counterparts in the control group. The outcome of this study on attitude towards food hygiene was in line with the finding of Anand, Jeyasekaran, Shekila and Edwin (2002) that, food safety and hygiene programmes have become increasingly necessary due to technological advances in food and agricultural sectors and also due to social changes introducing new food habits.

Conclusion

It was concluded that, the training had significant effect on knowledge of food hygiene among vendors in Atiba Local Government Area of Oyo State, Nigeria. This was further established through mean score which revealed that the participants exposed to safety education performed better knowledge than those in the control group. Also, it was concluded that, the training had significant effect on attitude towards food hygiene among vendors in Atiba Local Government Area of Oyo State, Nigeria. This was further revealed through mean score which showed that the participants exposed to safety education performed better in attitude than those in the control group.

Recommendations

Based on the findings of this study, the following recommendations were made:



1. Efficient safety education should be encouraged and used by health educators to educate on food hygiene and other safety-related issues. This is to ensure that the vendors' knowledge and attitude are improved in relation to food hygiene.
2. Public health education/sensitization on food hygiene should be carried out periodically by Oyo State Ministry of Health.

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