

## PSYCHO-COGNITIVE FACTORS AS PREDICTORS OF FOOD SAFETY PRACTICES AMONG FOOD HANDLERS IN IKEJA LOCAL GOVERNMENT, LAGOS STATE, NIGERIA

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### ABSTRACT

The aim of this study was to determine the levels of knowledge, attitude, and perception of food-safety practices among food handlers in Lagos State's Ikeja Local Government Area, as well as to propose strategies based on the findings to ensure proper and improved food-safety practices. The research used a cross-sectional sample design that was based on behavioral theory. Food handlers who agreed to partake in the study in the location were asked to fill out five sections of a validated questionnaire. Data was received on socio-demographic characteristics, food-safety knowledge, attitude toward food-safety, perception of food-safety, and food-safety practices. The data was analyzed using aggregated weighted item scores, which were then transformed into mean scores and standard deviations for all variables. At a significance level of 0.05, regression analysis was used to describe the relationship between variables. The results revealed a mean knowledge score of 15.18 on a 21-point comparison scale, with a standard deviation of 3.09, on a 21-point scale,  $11.66 \pm 1.710$  is the average attitude, and while perception measured on a 45-point reference scale has a mean and standard deviation of  $27.94 \pm 7.1$ . Practice measured on a 30-point scale had the mean and standard deviation value is  $16.77 \pm 2.52$ . Perception was the variable that best predict food-safety practices with an R Square value of 0.45. There was a statistically significant relationship between the variables and food-safety practices in Ikeja LGA, Lagos State. The government must prepare and enact food-safety legislation, as well as adopt policies and programs to increase food-safety. For more definitive results and to determine the cause's negative attitude toward food safety, cohort studies that include other variables not covered in this study are recommended.

**Keywords:** Attitude, Food-Borne Diseases, Food-Safety, Knowledge, Perception.

### I. INTRODUCTION

Food is described as a substance taken in or ingested to provide dietary support for any living organism, according to the Encyclopedia. It is derived from plants, fungi, or animals and includes a variety of nutrients such as carbohydrates, fats, proteins, vitamins, and minerals. Food-borne diseases occur when a food substance is infected with pathogenic bacteria, viruses, or parasites and then ingested by humans (Ryan, 2016). As a consequence, the World Health Organization defines it as a disease caused by the ingestion of infected food containing pathogenic bacteria, viruses, or parasites (Adley, 2016). According to Hoffman (2017), food-borne diseases are illnesses caused by consuming infected food. Food poisoning is an acute illness that affects the gastrointestinal tract and is caused by consuming tainted food or beverages. (Dijana and Gisela Kopper, 2014). It was also noted that the illness can be caused by a variety of agents such as viruses, parasites, and bacteria, and that there are currently over 200 food-borne diseases registered. Food contamination can happen anywhere in the supply chain, from "farm to fork," and can be caused by environmental factors like water pollution, soil contamination, or air pollution (Kopper, 2014).

Food-borne diseases infect one out of every ten people worldwide each year, according to World Health Organization reports from 2015. 600 million people are thought to be contaminated, with 1.8 million deaths recorded worldwide (WHO, 2015). Over 2 million cases have been recorded in developing countries (such as Nigeria), resulting in an estimated 200 thousand deaths (Olumide A, 2016). As a result, food poisoning is now considered a major global public health issue (Janet C, 2000). People are exposed to food-borne disease when they eat or drink contaminated food or beverages that contain toxins and pollutants such as bacteria, viruses, and parasites (WHO, 2011). At any point during the manufacturing process, food may become contaminated. As a result of advances in food processing around the world, food has been transported over long distances, potentially contaminating food from the point of production to the customer (Gombe, 2015). Acute diseases caused by foodborne illness have significant social and economic consequences for people's quality of life. It is

undervalued because public health efforts have virtually eliminated the risk of foodborne disease, causing it to be overlooked (Bukar, 2010). Food-borne diseases have been studied in Africa (Todd, 2008), and evidence suggests that acute poisoning is more likely in African countries due to a lack of food-borne disease surveillance systems. Foodborne illnesses have a scarcity of knowledge (Greiq, 2008). According to the World Health Organization, the majority of those affected in 2019 are children under the age of five. In Nigeria, there is no mechanism in place to monitor foodborne illness. According to the WHO Mortality Database, children under the age of five account for 30% of all food-borne deaths. According to Bartleson, Michaels, and Bukar (2010), inadequate surveillance and possible socio-cultural problems surrounding food borne disease and its associated stigma obscure the problem's complexity in Nigeria and West Africa as a whole.

## II. METHODOLOGY

A descriptive and cross-sectional study design was adopted for this research. The study population includes food handlers located in Ikeja Local Government Area of Lagos State.

The sample size was calculated based on this formula developed by Cochran (1963) giving a sample size of 422. The study will use multistage sampling technique. The research instrument was tested for validity (face, item, construct, content) and reliability (internal consistency). A semi-structured questionnaire was employed as the instrument for collecting primary data from the participants. The data was coded to facilitate the grouping of the data into categories. Quantitative data was analyzed using Statistical Package for Social Sciences (SPSS) Version 23.0. The analyzed data was then presented in frequency distribution tables for ease of understanding and analysis.

## III. RESULTS AND DISCUSSION

### Knowledge of food safety among Respondents in this study

On the question of the respondents knowledge of food safety, the study revealed that 85.8% of the respondents believed that contaminated food can cause illnesses and 79.0% agreed that food safety means eliminating illnesses causing factors from food. Some respondents 36.3% believed Washing of hands is not a method of preventing food borne diseases, 67.5% of the respondents agreed that proper cleaning of kitchen utensils reduces the occurrence of food illness. 49.8% of the believes proper preservation of food ingredients can results into the occurrence of food illness, and 95.5% of the total respondents disagreed with perspective that raw dog milk is healthy for consumption. A favourable score of respondents showed a mean score on Knowledge which indicated that they have good Knowledge. Knowledge variable was measured on 20 points rating scale and the mean score for all respondents is 15.18, SD 3.09 valid for 400 respondents (n=400). The score translates to the fact that majority of the respondents have good knowledge of food safety. So food handlers had good knowledge.

### Attitude of food safety among Respondents in this study

Findings on attitude to food safety among the respondents revealed that 77.3% of the sample size agreed strongly that they should be concerned about food safety and 65% agreed that food stuff should be stored at the right room temperature. 73.5% believed that as long as the food is warmed it doesn't matter whether it was left open, 66% believed that whether they practice good hygiene or not does not affect the quality of the food they sell, 64% thinks practicing food safety is time consuming. 81% are reluctant to Cooking expired food and 57.8% of the respondent disagreed with cooking food from a random source.

A favourable score of respondents showed high mean score on attitude which indicated that they have good attitudinal disposition concerning the food safety and that could in-turn results to improved food safety practices. Attitudinal variable was measured on 21 points rating scale and the mean score for all respondents is 11.66, SD 1.710 valid for 400 respondents (n=400). The score translates to the fact that majority of the respondents have positive attitude towards food safety. So attitudinal disposition of food handlers is appropriate concerning food safety.

### Perception of Food Safety among Respondents in this study

On the respondent's perception of food safety, the study revealed that majority 68.3% of the respondents agreed that they are at risk of exposing customers to food borne illness. 65.5% believed that it is most likely that the customers will develop food borne illness. But 37.5% disagrees that No one heals from food borne illness this means Perceived Severity is low. More than half of the respondents believed they are not too

ashamed to gain more knowledge on food safety and 37.0% believed there is no sufficient finance to carry out the food safety practices. Although 52.5% stated that Seminars and lectures on food safety practices are expensive, this may be a barrier to good food safety practices. Perception shows the level of self-efficacy on respondents to making good decision concerning food safety. Perception was measured on 45points rating scale and the mean score of all respondents is 27.94, SD 7.1 valid for 400 respondents (n=400). The mean score is more than average and this reflects a very strong perception of the respondents Food safety.

**Relationship between Knowledge, Attitude and Perception among food handlers in Ikeja Local Government Area**

The relationship between Knowledge, Attitude, Perception and Food safety was determined using Pearson’s correlation. Knowledge has Pearson’s correlation of 0.247 with Attitude, 0.304 with Perception and a correlation of 0.158 with food safety practices.

**Table 1:** Summaries of Descriptive statistics of mean and standard deviation for variables in the study as measured from the respondents.

Variables	Maximum points on scale of Measure	Respondents for the study N=400
		Mean(X)
Knowledge	(20)	15.18
Attitude	(21)	11.66
Perception	(45)	27.94
Food Safety Practice	(30)	16.77

**Regression Analysis**

**Table 2:** Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	
Knowledge	-.097	.039	-.119	-2.456
Attitude	.258	.071	.175	3.622
Perception	-.088	.017	-.251	-5.270

The result on Table 2 of the regression analysis done on the respondent’s responses. Perception was seen to have more influence on the food-safety practices compared to that of knowledge and attitude respondents.

**Test for Hypothesis**

**H<sub>A1</sub>:** There is no relationship between Knowledge of respondents and Food Safety practices. Correlation analysis was conducted to this effect and p-value is less than 0.05 (p<0.05) p=0.000, R=0.111. The researcher rejects the null hypothesis. There is sufficient statistical evidence to conclude that there is a significant linear relationship between knowledge and food safety practices. This means that there is a connection between knowledge and food safety practices so knowledge can influence the respondents’ ability to perform food safety practices.

**H<sub>A2</sub>:** There is no significant relationship between Attitude and Food Safety practices. Correlation analysis was conducted to test the hypothesis and p-value is less than 0.05(p<0.05) p=0.001, R=0.160. The researcher rejects the null hypothesis. There is sufficient statistical evidence to conclude that there is a significant relationship between attitude of respondents and food safety practices. This translates that attitude can influence the respondents’ ability to perform food safety practices. .

**H<sub>A3</sub>:** There is no significant relationship between perception and respondents' food safety practices. Correlation analysis was done to test the hypothesis and p-value was less than 0.05 ( $p < 0.05$ )  $p = 0.000$ ,  $R = 0.45$ . The researcher reject the null hypothesis. There is sufficient statistical evidence to conclude that there is a connection between perception of respondents' and food safety practices. This translates that if perception is strong, food safety practices can be influenced.

**H<sub>A4</sub>** There will be a significant relationship between knowledge, attitude and perception. Correlation analysis (Pearson Test, 2tailed) was conducted to this effect and p-value is less than 0.05 ( $p < 0.05$ )  $p = 0.00$ ,  $R = 0.38$ ,  $0.34$  and  $0.30$  for respondents.

## Discussion of Findings

### Knowledge

The knowledge of food handlers according to the findings reveal that 62.0% of respondents knew that washing hands prevents food contamination. Further discussions with some of the respondents revealed that they knew how to properly wash hands with running water and soap for around 30 seconds before wiping dry, which was close to research conducted in Saudi Arabia. Food handlers in Ikeja were more knowledgeable in this area than those in related studies in China, where only 25.5 % of participants knew the correct response (Gong, Wang, Yang, & Bai, 2016), compared to 29.1 % in Brazil (Uggioni & Salay, 2012). Almost all of the respondents were aware of the foods that can cause food poisoning, with 95.5% claiming that raw dog milk is unsafe to consume. In other research, undercooked beef was cited as a source of food poisoning by 25.3% of respondents in China, raw eggs and milk by 8.9%, and both by 12.2% (Gong, Wang, Yang, & Bai, 2016), and 44.1% in Ghana (Gong, Wang, Yang, & Bai, 2016). (Akonor & Akonor 2013) Raw eggs were considered as a source of food poisoning by 64.3% of South Africans (Sibanyoni, Tshabalala & Tabit, 2017). The overall passing rate for this segment was 89.9%, indicating that food handlers in the Ikeja LGA were well-versed in food safety. Overall, respondents had strong knowledge, but those with a portion of non-formal, secondary, and tertiary education had better knowledge than those with primary education, according to a study conducted in Saudi Arabia. The age of food handlers had little bearing on their knowledge because all age groups were well-versed. This emphasizes the importance of gathering information on target groups' awareness and activities and applying it to the creation of successful health education initiatives. Food handlers have a significant amount of Knowledge, according to other research (Lum, Albrecht, Yaseen, Litchfield, & Ritter-Gooder, 2013). Over all, most of the respondent in this study had a good knowledge of food safety practices, which is similar to the research conducted in Port Harcourt, Nigeria (Elechi, 2018). Where majority of the respondent were found to have a good knowledge

### Attitude

Study shows that 55% of food handlers in Ikeja LGA had a positive attitude about food safety practices. This is poor as compared to Liliana Rizzo and Italo F Angelillo's studies from 2000. Just 77.3% of those polled thought it was necessary to be concerned about food safety. Although 39.3 percent said they didn't mind cooking with water from any source. Although 39.3% thought there was no risk in using expired ingredients in cooking. In general, less than half of the respondents had a positive attitude toward food safety, which is similar to a Ghanaian survey. People that have a positive attitude have improved food safety practices, which is close to Lum et al (2013). The attitude score remained lower than the knowledge score, indicating that there is a significant difference between food handlers' level of knowledge, attitude, and food safety practice in Ikeja LGA. The study showed that most of the respondent had a poor attitude towards food safety practices. This findings is opposite with the study conducted by Allision in 2018 at River state Nigeria, while majority of the respondent were found to have a good attitude.

### Perception

The high level of self-reported food safety practice among the respondents is due to this high level of perception. This finding is close to that of studies conducted in India (Sudershan, Kalpagam & Polasa, 2008). This is a relatively high percentage as compared to the respondents' level of knowledge and attitude. Half of the respondents perceived they were not at risk of food-borne illness, although more than half perceived food-borne illnesses were a serious threat. Food safety, according to the respondents, is expensive. Despite the fact that they were aware of the benefits of practicing food safety in their different restaurants. The high level of

self-reported food safety practice among the respondents is due to this high level of perception. This finding is close to that of studies conducted in India (Sudershan, Kalpagam & Polasa, 2008).

#### Food Safety Practice

The food safety practice was significantly associated with the educational status of food handlers. The food safety practice was higher among study subjects with secondary school. This result is in line with different earlier studies (Pokhrel, 2015). Food handler with a good score of knowledge level had better food safety practice. This is in line with earlier studies (Ismail, Chik, Muhammad & Yusoff, 2016, Rahma, Arif, Bakar & Talib, 2016, Asmawi, et al, 2018). Study subjects with a poor score of attitude toward food safety also had reported poor and below average food safety practice. This finding is more or less similar with earlier studies (Yarrow, Remig & Higgins, 2009). As a result, there is a significant gap between the level of Knowledge and the levels of attitude and practice among food handlers in Ikeja LGA. In other parts of Rivers state, there is a similar gap in hand washing awareness and practice (Kubde, Pattankar, 2016). Not only is there a gap in food safety awareness and practice in Rives state, but it also exists in other states. The current study found no connection between food handlers' training and their food safety practices. While it was not a significant factor, the majority of food handlers had received no food safety instruction. Because of their heavy workload, food handlers are often unable to put their newfound experience into effect.

#### IV. CONCLUSION

This study looked at food handlers' food safety knowledge, attitudes, perceptions, and practices in Ikeja LGA. The data may be used to develop education and training programs that will help them strengthen their knowledge, attitudes, and perceptions, resulting in stronger and safer food handling practices. Food safety programs are typically focused on food supply chains, with no attention paid to food handling and activities. Food handlers need efficient and methodical education and training. To advance food safety knowledge, attitude, perception, and safer food practices, authorities, researchers, educators, media and food safety communicators should initiate education campaigns, with a particular emphasis on high-risk groups including food handlers in the community.

Therefore, the following recommendations are made based on the results of the report.

1. The government should develop programs and training to encourage food-safety awareness.
2. More surveys of a wider population should be conducted in order to assess more incorrect views that people have and attempt to correct them by action.
3. The media should be used to elaborate on the consequences of poor food-safety practices, including the effect on community and national health.

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