

EFFECT OF ROADSIDE FOOD AND THE HEALTH OF ANYIGBA COMMUNITY IN DEKINA LOCAL GOVERNMENT AREA OF KOGI STATE, NIGERIA

Ahmed Nuhu Ahmed

08036374128/ahmednuhuahmed7@gmail.com or ahmed.na@ksu.edu.ng

Department of Public Administration, Faculty of Management Science,
Prince Abubakar Audu University Anyigba- Nigeria.

ABSTRACT

The sale and consumption of roadside food is a common practice in Nigeria, particularly in the community of Anyigba. People in this community eat these foods on a daily basis, unaware of the potential health risks they pose. Food handling officials are responsible for ensuring food safety throughout the production and storage process. However, due to inadequate training and disregard for hygiene measures, food vendors often allow pathogenic bacteria to come into contact with the food, which can lead to illness in consumers. This study utilized both primary and secondary data sources and employed a survey technique to gather information. The results showed that many vendors in Anyigba have low levels of education and lack proper training in food hygiene. The study also found no significant relationship between street food vendors and the health implications for Anyigba residents, but did find a significant relationship between food stalls and the health implications for residents. In conclusion, roadside food has become a significant part of life in Nigeria, but has also brought an increase in health problems. The study recommends moderation as the key to maintaining healthy roadside food.

Keywords: Roadside, Food, Health Implications, Food Vendor, Disease, Food stall

INTRODUCTION

Health is an essential asset for every individual, and in modern medical practice, it is considered a universal property that all people possess. A well-balanced and nutritious diet is crucial for maintaining good health, highlighting the significance of food as one of the basic physiological needs of humanity. However, contaminated food can pose significant health risks to a community, often leading to disease outbreaks and transmission (UNICEF, 2018).

Regrettably, a vast majority of the food we consume is not adequately protected from flies, which are notorious carriers of foodborne pathogens. Furthermore, it is common to find unsafe storage practices being employed at street vendors' stalls. Additionally, there are multiple stages in the process of food preparation and handling that leave room for potential contamination. Consequently, Nigeria and other parts of the world have reported numerous cases of foodborne illnesses and diseases (Abdulkareem et al., 2014).

In Anyigba community located in Kogi State, there has been a significant surge in the sale and consumption of roadside foods. This trend can be attributed to high levels of unemployment and limited

work opportunities, making street-food vending a regular practice in both rural and urban areas. In densely populated regions such as these, basic sanitary facilities are often lacking, thereby putting consumers' health at risk. Shockingly, FAO (2020) reports that 2.5 million people consume roadside foods every day without realizing the potential health hazards they may contain. Over the past decade alone, there has been a sharp increase in the number of individuals suffering from foodborne illnesses (Abdulkareem et al., 2014). It is crucial that measures be taken to ensure proper food handling practices to safeguard public health from these preventable dangers.

In Kogi State, particularly in the Anyigba community, there has been a significant increase in the sale and consumption of roadside food. This is often due to high levels of unemployment and limited work opportunities, making street-food vending a regular practice in both rural and urban areas. In such overcrowded areas, basic sanitary facilities are often lacking, putting the health of consumers at risk. According to FAO (2020), 2.5 million people consume roadside food every day, unaware of the potential health hazards these foods may contain. Over the past decade, the number of people suffering from foodborne illnesses has dramatically increased (Abdulkareem et al., 2014). Many people enjoy eating roadside food because it is already prepared and cheap. However, it is a matter of concern when hygiene is not taken into consideration. While eating outside has become a common practice in Nigeria, it is crucial to consider the cleanliness and safety of the food being consumed. This study aims to explore the potential health risks associated with roadside food consumption.

The precise tally of worldwide cases of diseases transmitted through roadside foods and junks is shrouded in mystery, but a report from 2013 disclosed that 2.2 million individuals, including 1.8 million young ones, succumbed to food borne illnesses caused by consumption of roadside foods (UNICEF, 2015). A significant portion of these incidents can be traced back to contamination of food and drinking water.

Nigeria has long grappled with the issue of food-borne diseases caused by roadside foods, resulting in significant social, economic, and health costs. The number of people afflicted by food borne diseases each year is said to be as high as 65% (Centre for Diseases Control, 2015). In Nigeria alone, an estimated 76 million cases of food borne diseases occur annually, leading to 32500 hospitalization and 5000 deaths (CDC, 2015). Developing countries bear the brunt of this problem due to the prevalence of various food borne diseases transmitted through street foods and junks, including those caused by parasites. The high incidence of diarrhea diseases in Nigeria points to a major underlying issue with food safety. While many cases of food borne diseases go unreported, outbreaks can reach catastrophic proportions. A 2014 outbreak of salmonellosis caused by contaminated 'suya' meat from roadside vendors in Northern Nigeria affected approximately 224,000 individuals (CDC, 2015).

Food poisoning is a common occurrence caused by certain types of bacteria, including staphylococcus aureus and bacillus cereus. However, it's not just these types of bacteria that pose a threat to our health. Consuming food from street vendors can also lead to contracting diseases such as typhoid fever, dysentery, and cholera. This is due to the fact that the preparation and handling of food in these settings may not meet the same standards as those in restaurants or other commercial kitchens.

Furthermore, there is an additional concern regarding the use of adulterated, substandard, or unsafe ingredients in street food preparation. These practices are often implemented in order to maximize profits, but they can have serious implications for public health.

It's clear from this information that there is a pressing need for increased awareness and knowledge about the potential hazards associated with consuming roadside foods. It's important that individuals take steps to protect themselves by being vigilant about where they buy their food and how it's prepared. By doing so, we can help reduce the incidence of foodborne illnesses and promote better overall health in our communities.

Considering the aforementioned data, it is evident that there is a dire need for increased awareness and knowledge regarding roadside foods and the hazards associated with them.

To find answer, the following question were formulated:

- I. What are the effect of street food vendors on the health implication of Anyigba residents?
- II. What are the relationship between food stalls and the health implication of Anyigba residents?

The objective of this paper is to assess the effect of roadside foods on the health condition of Anyigba residents. The specific objectives are:

- i. To identify the effect of street food vendors on the health implication of Anyigba residents.
- ii. To assess the relationship between food stalls and the health implication of Anyigba residents.

To find answer to the objectives, the following hypotheses were formulated:

Ho: There is significant relationship between Street food vendors and health implication of Anyigba residents?

Ho: There is no significant relationship between food stalls and health implication of Anyigba residents?

REVIEW OF RELATED LITERATURE

Concept of Roadside Food

Roadside Cuisine comprises of readily available consumables or beverages sold in public spaces such as streets, markets, fairs and parks. Typically served by vendors from portable food booths, carts or stalls on the street, it serves as a cost-effective and accessible option for obtaining nutritionally balanced meals outside one's home - especially for low-income individuals (Kok & Balkaran, 2014 cited in Mohammed & Shehasen, 2020).

Moreover, Roadside Food refers to foods that are prepared, stored and sold at roadside locations. In other words, vending food comes in different forms; while some offer packaged options others provide them unpackaged. The latter group comprises mainly of hawkers who sell their wares by the roadside. In local parlance many of these vendors are referred to as 'mama put' (Omemu, 2008).

Concept of Food Vendors

According to Tahira et al. (2019), food vendors are individuals involved in the food industry who have direct contact with food. This includes those who sell, distribute, or prepare food products. Ensuring the safety of these products is paramount to protecting public health and preventing the spread of foodborne illnesses.

Concept of Food Safety

The concept of food safety involves ensuring that all steps in the production, distribution, and preparation of food are carried out in a manner that minimizes the risk of contamination or other hazards. (Wikipedia). Food safety is a fundamental concern in both industrialized and developing countries alike as it is widely known that foodborne illnesses contribute significantly to annual morbidity and mortality rates (Akpan, 2018). Given that an increasing number of individuals consume their meals outside their homes within urban areas, this has become a significant public health issue worldwide. The problems associated with compromised food safety which lead to outbreaks of various diseases are thus a global concern (Tahira et al. 2019).

The attitudes towards ensuring food safety among street vendors involve individual thoughts which engage with assessing associated concepts pertaining to how people behave, think and feel about this topic (Kok & Balkaran, 2014). This includes cognitive components such as knowledge acquisition as well as emotional elements like excitement or fear. Additionally, behavior-based factors play an integral role in determining what actions are taken by these individuals regarding their approach towards maintaining safe practices for consumers' benefit (Kok & Balkaran, 2014).

One high-risk factor related to street vended foods is microbial contamination. Several studies have indicated that street foods are often held at unacceptable temperatures or excessively handled by vendors resulting in unsanitary conditions leading them prone to contamination (Mohammed & Shehasen, 2020).

The risk of microbial contamination is contingent upon the nature of the street food and its preparation. The potential for unsafe food hinges on various factors such as pH, water availability, handling methods, exposure to temperature, holding time, and the type of food itself (Ruchi et al. 2023). According to research conducted by Musa and Akande (2013), vendors were observed preparing food that met or exceeded required standards while also reheating meals prior to serving them to customers. However, poor utensil hygiene was a prevalent unhygienic practice among many street food vendors in Nigeria.

An Overview of Roadside Cuisine in Nigeria

In 2016 and 2017, the Federal Ministry of Health's Department of Public Health conducted a survey that recorded over eight million cases of foodborne illnesses in Nigeria, with fatalities increasing each year (FMH, 2017). Contaminated roadside cuisine may be one source of such ailments. The Consumer Protection Council (CPC) surveyed roadside vendors within the Federal Capital Territory (FCT) in 2018, revealing a similarly dire scenario that could be even worse outside urban areas where access to basic amenities like clean water and electricity is irregular (Consumer Protection Council, 2018). Hygiene concerns extend not just to the preparation but also packaging of most roadside foods. For instance, akara is often wrapped in old newspapers or cement bags while kilishi and other delicacies are sold wrapped in worn-out bags; suya undergoes similar unsanitary processes before being sold (Akimbo,

2015). International organizations such as FAO and WHO have declared food safety an escalating global public health issue. Unfortunately, exact numbers for reported incidents involving food poisoning or contamination remain unknown; nevertheless it has been estimated that food- and water-borne diseases account for significant morbidity and mortality rates throughout Nigeria (World Health Organization, 2017).

Health Hazards Associated with Roadside Cuisine

Every year, countless individuals in Nigeria fall ill from consuming contaminated foods. Symptoms of health risks associated with street food consumption include gastrointestinal distress such as stomach upset, abdominal cramping, nausea and vomiting, diarrhea, fever, and dehydration. These symptoms can range from mild to severe in nature. The majority of illnesses resulting from the consumption of street-vended foods are caused by pathogenic microorganisms including bacteria, viruses, parasites and toxins (Black 2018). There is a well-established potential for contamination of street foods with these harmful agents which has resulted in numerous disease outbreaks such as cholera epidemics that have been traced back to the ingestion of contaminated road-side fare (Abdussalam 2016). Despite being an essential part of many cities' food distribution systems for lunchtime meals both in developing and industrialized nations alike; certain types of street-vended cuisine present significant threats to consumers due to microbiological contamination. The level of risk varies depending on several factors including the type of food item being sold along with its preparation method as well as how it is stored prior to consumption (World Health Organization 2015).

Food Handling Practices in Nigeria

Numerous countries have enacted laws pertaining to food safety and environmental hygiene, which are reflected in regulations and codes of practice that address street-vended foods. According to Akimbo (2014), street food or ready-to-eat vendors play a vital role in the food supply chain across many developing countries. Street food caters to an essential need of urban populations as it is easily accessible, with some members of the population relying solely on it. This type of food poses a high risk for microbial contamination, as well as improper use of additives, adulteration and environmental pollution leading to increased susceptibility to food-borne illnesses. Food safety is thus a major concern with street foods given their preparation under unhygienic conditions with limited access to safe water sources, sanitary services or garbage disposal facilities (Akimbo 2014).

While most food vendors possess knowledge about hygiene and disease prevention measures, they require training workshops or other forms of motivation before putting this knowledge into practice effectively. However, inadequate facilities among poor resource communities' vendors may hinder proper implementation of appropriate food safety practices.

Consequences of Poor Hygiene and Improper Food Handling

According to Shehasen (2020), the global incidence of food-borne diseases is alarmingly high, as estimated by the Center for Disease Control and Prevention (CDCP). The annual occurrence of 47.8 million, 2 million, and 750,000 food-borne illnesses in the United States, United Kingdom, and France respectively suggests a serious health concern. It is uncertain if Nigeria's food epidemiology has fared

any better considering that a significant quantity of food produced and distributed in Nigeria today reaches consumers in unwholesome conditions due to poor handling methods, inefficient processing equipment and storage practices, as well as high ambient tropical temperature and humidity conditions.

In Nigeria specifically, biological contaminants - primarily bacteria and other parasites transmitted through contaminated food or water sources - are responsible for most cases of food-borne illnesses. Poor personal hygiene among food handlers serves as one source of infection spread by these microorganisms. Biological contaminants can cause various diseases such as cholera, typhoid fever, paratyphoid fever, brucellosis, amebiasis; while servicing practices, dish washing facilities, cooking utensil conditions, storage systems, knowledge on safe handling affect safety directly or indirectly (Shehasen et al., 2020).

Akimbo (2008) asserted that some immediate effects of chemicals present in foods may include headaches or altered energy levels; however, long-term risks such as increased risk for cancer, cardiovascular disease, degenerative disorders also pose severe threats.

Food regulatory agencies play crucial roles in ensuring proper monitoring, compliance with established standards, safe production, distribution, consumption processes (Ruchi, et al. 2023).

The Roles of Food Regulatory Agencies

The Nigerian government recognized the crucial role of achieving optimal health for all Nigerians and thus launched the National Policy on Food Hygiene and Safety in 2000 as a significant component of the Nigerian National Health Policy. The policy's overarching objective is to attain superior food hygiene and safety practices that enhance health, prevent food-borne diseases, mitigate risks associated with poor food hygiene and safety, and ultimately eliminate them (Akimbo, 2015). To achieve this goal, the policy aims to stimulate legislation regarding various aspects of food production such as storage, proper handling, processing, preservation, trade, transportation and marketing.

Furthermore, it seeks to improve healthcare quality by ensuring that all imported or exported foods consumed in Nigeria are nutritious and free from contaminants while being accessible at an affordable price to consumers. According to Akimbo (2015), several government organizations bear responsibility for regulating and monitoring food safety standards in Nigeria including: Federal Ministry of Health; National Agency for Food and Drug Administration Control (NAFDAC); Standards Organization of Nigeria (SON); National Codex Committee; Federal Ministry of Agriculture; States; Local Governments.

Theoretical Literature Review

This investigation explored both the Germ Theory of Disease and the Health Belief Model (HBM), ultimately opting to utilize the HBM for analysis.

Germ Theory of Disease First proposed by Girolamo Fracastoro in 1546, support for Germ Theory accumulated slowly as Galen's miasma theory remained dominant among scientists and physicians. However, a transitional period began with the groundbreaking work of Louis Pasteur and Robert Koch, which provided convincing evidence that microorganisms were responsible for disease. By 1880, miasma theory was largely abandoned by scientists, leading to a "golden age" in bacteriology where this

theory quickly led to identification of actual organisms causing many diseases. Viruses were later discovered in the 1890s.

The germ theory posits that certain diseases are caused by micro-organisms - tiny entities too small to be seen without magnification - which invade human or animal hosts. These microorganisms can cause disease through their growth and reproduction within their host's body. The term "germ" may refer not only to bacteria but also protists, fungi, viruses, prions or viroids; collectively these are known as infectious agents or pathogens. Even when a pathogen is identified as the primary cause of an illness other factors such as environmental conditions or genetic predispositions can influence its severity.

Health Belief Model (HBM)

The research is based on the Health Belief Model (HBM), which was initially formulated in the 1950s by social psychologists Hochbaum, Rosenstock, and Kegels while working for the U.S. Public Health Services. The HBM is a psychological model that endeavors to elucidate and prognosticate health beliefs through an emphasis on individual attitudes and beliefs. This model emerged as an answer to the failure of a free tuberculosis (TB) screening program. Since then, it has been modified to examine various long- and short-term health behaviors including sexual risk behaviors, transmission of HIV/AIDS, and diseases caused by roadside foods.

At its core, the HBM operates under the assumption that individuals will take health-related actions (e.g., refraining from consuming unhygienic roadside food) if they believe that negative health conditions can be avoided or prevented altogether. Furthermore, individuals must possess positive expectations about taking recommended actions such as being able to consume more secure food at home without any potential hazards. The HBM consists of four main constructs: perceived susceptibility, perceived severity, perceived benefit(s), and perceived barriers; these concepts were introduced in 1988 by Rosenstock et al., with the aim of better addressing habitual unhealthy behaviors like sedentary lifestyles or smoking habits.

In conclusion, empirical reviews have shown that adhering to this model helps people make informed decisions regarding their own healthcare needs while also promoting healthy lifestyle choices in general.

Empirical Review

Mohammed and Shehasen (2020) conducted an explorative analysis of the factors influencing street food consumption in Ethiopia, including sanitary practices and associated health risks. The study recommended that Health Authorities and other relevant bodies should promote awareness to improve the hygienic conditions of street vendors. Additionally, the authors suggested implementing research on street food consumption risk.

Amadi et al. (2018) conducted a study on food Hygiene Practices in Abia State, "utilized a cross-sectional design to evaluate food hygiene practices among vendors. The findings indicated that few vendors had undergone training on preparing safe food for human consumption; however, most were aware of key principles such as keeping clean, separating raw and cooked foods, cooking thoroughly,

and maintaining safe temperatures. The researchers concluded that educational interventions had a moderate impact on improving knowledge about hygiene practices among handlers. They recommended practical measures to prevent contamination by handlers such as not spitting or coughing near food while using clean handkerchiefs deposited in refuse bins.

Grema and Kwaga (2018) study assessed the knowledge, attitudes, and practices of fish handlers in Kaduna State toward food hygiene through a structured face-to-face questionnaire survey. Although almost all workers were aware of the importance of hand washing before handling fish and wearing protective clothing during work activities, many lacked knowledge about microbial hazards transmitted through fish. Despite good knowledge and attitudes towards safety measures among fish vendors surveyed in this study group, their actual practice towards ensuring proper hygiene was found wanting. Therefore it is important for not only achieving nutrition security but also delivering safe nutrition security standards across board.

There seems to be gap within literature related to how best we can enhance compliance with set guidelines/good practice amongst these cohorts/vendors/food handlers etc.

Gap in literature

The literature examination indicates a paucity of research on the subject of roadside cuisine, implying an insufficient amount of investigation into the potential health consequences associated with consuming such food in Anyigba, situated within Dekina L.G.A of Kogi state. Consequently, this study endeavors to bridge this gap by evaluating the health implications linked with partaking in roadside cuisine in Anyigba - Kogi state.

METHODOLOGY

The survey method was employed for this study as it is well-suited for gathering contemporary data and measuring human attitudes and opinions. The researcher collected valid information from samples comprising respondents who were residents of Anyigba.

The target population for this study comprises residents of Anyigba with a projected population figure provided by the National Population Commission indicating 260,312 individuals (two hundred sixty thousand three hundred and twelve). This serves as the focus group on which this research centers.

To determine an appropriate sample size, Taro Yamani's formula (1967) was utilized: $n = \frac{N}{1+N(e)^2}$ where n represents sample size N denotes population size e signifies level of precision required. This formula enabled us to arrive at an optimal sample size that reflects accurate representation while providing sufficient statistical power for our results.

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = sample size

N = population size

e= error term

1= constant

n=N

1+N (e)²

$$\frac{260.312}{1+260,312(0.07)^2}$$

$$\frac{260,312}{1+260,312(0.049)}$$

$$\frac{260.312}{1+1275.5288}$$

$$\frac{260,312}{1276.5288}$$

= 203.92

204 (approximately)

Administration of questionnaire

| S/N | Community of questioner administered | No: of questioner | % |
|-----|--------------------------------------|-------------------|-----|
| 1. | Abuja area | 50 | 25 |
| 2. | Old Egwume Road | 30 | 10 |
| 3. | Ogane-aji | 10 | 8 |
| 4. | K S U community | 100 | 50 |
| 5. | Ajetachi area | 14 | 7 |
| | Total | 204 | 100 |

Source: Researcher’s Survey, 2023

Method of Data presentation and Analysis

The collected data was analyze using multiple linear regression.

The following econometric model was specified for this study:

HIM = f(RSF)

$$HIM = \beta_0 + \beta_1SFV + \beta_2FST + \mu_i \text{-----} (1)$$

Where: RSF = an indicator representing Road side food (Independent Variable);

HIM:= dependent variable representing health implication

β_0 = a constant and β_{1-2} = coefficients of independent variables;

SFV= a predictor representing Independent Variable (street food vendor);

FST= a predictor representing Independent Variable (food stalls);

μ = Stochastic error term;

i = Cross sectional; and

f = Functional relationship.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

This section is concerned with the presentation of data, analysis of data, hypothesis testing and research findings. In order to achieve this objectives, information was collected from the respondents in which 4 copies were lost to distribution. A total of 200 questionnaire were returned.

The following null hypotheses were tested:

- i. Ho: There is no significant relationship between Street food vendors and health implication of Anyigba residents.
- ii. Ho: There is no significant relationship between food stalls and health implication of Anyigba residents.

Model Summary

| Model | R | R Square | Adjusted Square | R | Std. Error of the Estimate |
|-------|-------------------|----------|-----------------|---|----------------------------|
| 1 | .907 ^a | .822 | .820 | | .630 |

a. Predictors: (Constant), FST, SFV

The coefficient of determination (R Square) is 0.822, indicating that approximately 82.2% of the variance in the dependent variable is explained by the predictors. The adjusted R Square, which accounts for the number of predictors, is 0.820. The standard error of the estimate is 0.630.

ANOVA^a

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1 | Regression | 358.444 | 2 | 179.222 | 452.230 | .000 ^b |
| | Residual | 77.676 | 196 | .396 | | |
| | Total | 436.121 | 198 | | | |

- a. Dependent Variable: HIM
- b. Predictors: (Constant), FST, SFV

The ANOVA table shows that the regression model is statistically significant ($p < 0.001$), as the F-statistic is 452.230. The regression model explains a significant amount of variance in the dependent variable, with a sum of squares of 358.444.

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .543 | .097 | | 5.581 | .000 |
| | SFV | .413 | .078 | .308 | 5.263 | .000 |
| | FST | .621 | .058 | .629 | 10.745 | .000 |

- a. Dependent Variable: HIM

The intercept (constant) is 0.543, and it is statistically significant ($p < 0.001$).

The coefficient for the predictor street food vendors (SFV) is 0.413, with a standardized coefficient (Beta) of 0.308. This predictor is statistically significant ($p < 0.001$). This means that the null hypothesis which states that there is no significant relationship between Street food vendors and health implication of Anyigba residents is rejected. There is significant relationship between Street food vendors and health implication of Anyigba residents.

The coefficient for the predictor food stalls (FST) is 0.621, with a standardized coefficient of 0.629. This predictor is also statistically significant ($p < 0.001$). This result further proves that the null hypotheses which states that there is no significant relationship between food stalls and health implication of Anyigba residents is rejected. There is significant relationship between food stalls and health implication of Anyigba residents.

Findings of the study

This study aimed to evaluate the health impact of roadside food on residents of Anyigba. Specifically, it sought to identify the causes and types of diseases associated with roadside food in Dekina local government area of Kogi State. The results confirmed that roadside food has adverse effects on the health of Anyigba residents due to contamination during preparation and handling, leading to foodborne illnesses. However, this study found no correlation between communicable diseases and unhygienic roadside foods, consistent with previous research by Akimbo (2008), Muhammed &Shashen (2018), Grema &Kwaga (2018) and Amadi &Akpan (2018).

CONCLUSION AND RECOMMENDATIONS

In conclusion, roadside foods have become a prevalent part of Nigerian life but have also resulted in an increase in health issues. To address this problem effectively requires moderation; sensitization

programs that educate people about the health impacts; and government policies against unhygienic road-side foods. It is possible to win the battle against unhealthy street foods if all stakeholders work together.

Furthermore, there is a need for the implementation of stricter regulations and enforcement by food regulatory agencies to ensure that food vendors comply with established standards and safe practices. This includes regular inspections of food stalls and street vendors to monitor their hygiene practices, as well as the provision of basic sanitary infrastructure in crowded areas where street vendors assemble. Moreover, sensitization programs should be organized by stakeholders through enlightenment campaigns to educate the populace on the effects of consuming unhygienic roadside foods. Such campaigns can include workshops, seminars, and community outreach programs aimed at educating both consumers and vendors on proper food handling practices.

Finally, it is important to note that while roadside foods are an essential part of many cities' food distribution systems for lunchtime meals both in developing and industrialized nations alike, certain types of street-vended cuisine present significant threats to consumers due to microbiological contamination. Therefore, it is crucial that all stakeholders work together towards achieving nutrition security while delivering safe nutrition security standards across board

Based on these findings, we recommend the following:

- i. Relevant authorities should provide training for street vendors on proper hygienic ways for cooking and handling food while carrying out regular awareness campaigns related to cholera, dysentery, typhoid fever caused by unhygienic roadside meals. Additionally, posters or media campaigns should inform consumers about potential hazards associated with consuming street meals as well as steps required from vendors to reduce such risks.
- ii. Sanitary inspectors must encourage vendors and hawkers to always maintain cleanliness within environment while educating consumers not to contaminate or litter at vending stalls.

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