

FOOD SAFETY KNOWLEDGE AND ATTITUDE AMONG STREET FOOD VENDORS IN TAGBILARAN CITY, BOHOL

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ABSTRACT

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Street Food vending is a widespread practice in urban areas, providing convenient and affordable meals. However, open-air preparation and sale of street food raise safety and hygiene concerns. This study looks at the food safety knowledge and attitudes of street sellers in Tagbilaran City, Bohol. Tagbilaran City, a major political, social, and economic hub in the Philippines, was chosen for this study, which focused on 32 merchants in Poblacion II. The study intends to analyze these vendors' existing food safety practices in light of Rane's (2011) results

on foodborne illnesses associated with poor hygiene and sanitation. Data on attitudes toward personal hygiene, sanitation, and food safety were acquired using a quantitative descriptive design and convenience sampling, with a self-developed questionnaire. The findings show that the majority of respondents,



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predominantly aged 23-27 with a high school education and 1-5 years of vending experience, have high levels of food safety knowledge and positive views toward food safety practices. There were significant relationships among the vendors' ages, their food safety knowledge, and their knowledge and attitudes. The findings indicate that vendors' understanding of health risks and benefits, and their perception of control and social norms, all contribute to their adherence to safe food practices. The successful execution of government-led food safety seminars contributes to these excellent outcomes. This study emphasizes the significance of ongoing education and rigorous monitoring in maintaining and improving food safety standards among street food sellers.

INTRODUCTION

Street food is an important component of urban food systems, particularly in developing countries where it provides livelihood opportunities and affordable meals for many households (Alimi, 2016; World Health Organization [WHO], 2010). Despite its economic and social benefits, concerns regarding food safety remain because vending environments are often informal and may lack adequate sanitation infrastructure.

Foodborne illnesses remain a major public health problem worldwide. The World Health Organization says that every year, unsafe food makes hundreds of millions of people sick. The countries with the least and most money are being hurt the most. People in the area generally agree that poor hygiene, improper food handling, and insufficient training are to blame for contaminated food (FAO & WHO, 2011).

These dangers show how important it is to understand what food workers know and how they feel, as these factors often shape their daily actions. Street food vending is common in Tagbilaran City, Bohol, both in business and residential areas. Poblacion II is well known for it. While vendors contribute to the vibrancy of the local economy, there is a lack of factual evidence regarding their food safety knowledge and their attitudes towards hygienic food handling. Looking at these things might help identify places where targeted training or support could improve public health protection.

Recent research has shown that street food vendors' understanding of and attitudes toward food safety remain strong indicators of how well they follow clean food-handling procedures and protect customers (Hossen et al., 2020; da Cunha et al., 2014). Food safety is receiving increasing attention in developing countries, but evidence from the Philippines remains limited, particularly among food vendors working in informal food environments.

This study aimed to find out how much street food vendors in Poblacion II, Tagbilaran City know and feel about food safety. It examined what vendors knew about personal hygiene and sanitation, how they felt about cleaning rules and food preparation, and how information and attitudes were related. As required by Republic Act No. 10611, also known as the Food Safety Act of

2013, the results may serve as the basis for local health improvement programs.

Theoretical Background. Three established behavioral and innovation theories informed this study. The Health Belief Model (Rosenstock, 1974) posits that individuals are more inclined to adopt preventive practices when they perceive vulnerability to a health risk and recognize the benefits of taking action. In this environment, suppliers' perceptions of the risk of foodborne illness may affect how they maintain cleanliness.

Ajzen's (1991) Theory of Planned Behavior posits that attitudes, subjective norms, and perceived behavioral control influence behavior. This approach is very important for understanding how sellers' ideas and perceptions of the limits affect how well they follow food safety rules. Rogers' Diffusion of Innovations Theory (2003) finally talks about how people in a society accept new ways of doing things. Food safety training and government rules may reach vendors through word of mouth and peer pressure within the school. These frameworks can be used to examine how information and attitudes might affect food safety management.

Research Questions. This study aimed to determine the level of food safety knowledge and attitudes among street food vendors in Poblacion II, Tagbilaran City, Bohol, and to develop an action plan based on the findings.

Specifically, it sought to answer the following questions:

1. What is the profile of the street food vendors in terms of:
 - 1.1 age;
 - 1.2 sex;
 - 1.3 highest educational attainment; and
 - 1.4 Length of service as a street food vendor?
2. What is the level of food safety knowledge of the respondents in terms of:
 - 2.1 personal hygiene; and
 - 2.2 Sanitation?
3. What is the level of food safety attitude of the respondents in terms of:
 - 3.1 cleaning procedures; and
 - 3.2 Food Preparation?
4. Is there a significant relationship between the respondents' profile variables and their:
 - 4.1 food safety knowledge; and
 - 4.2 Food Safety Attitudes?
5. Is there a significant relationship between the respondents' food safety knowledge and their food safety attitudes?
6. What action plan may be proposed based on the findings of the study?

RESEARCH METHODOLOGY

A quantitative descriptive approach was used to find out how much street food vendors in Poblacion II, Tagbilaran City, knew about and felt about food safety. It was thought that a descriptive method would work well for writing down what was already there without changing any variables. 32 street vendors took part in the study. Since there was no official list of vendors, people willing to take part were selected via convenience sampling, which assessed how easy it would be to contact them. This non-probability sampling method makes it harder to draw broad conclusions, but it lets you collect data when you do not have access to a full population frame.

Because no official registry of street food vendors was available, convenience sampling was utilized. So, the results should be taken with a grain of salt, and they might not apply to all street food sellers in Tagbilaran City. Even though the sample size was pretty small, it included most of the street food sellers who were easy to reach and working in the study area during data collection.

Researchers made a structured questionnaire with three parts: (1) a profile of the person's demographics; (2) what they knew about food safety in terms of personal cleanliness and sanitation; and (3) how they felt about cleaning and preparing food.

A four-point Likert scale, with 1 meaning "Never" and 4 meaning "Always," was used to record the answers. The instrument was tested with 10 sellers in a nearby area before the main data collection. Cronbach's alpha was used to assess internal consistency. Coefficients above the widely accepted threshold of 0.70 showed satisfactory reliability (Taber, 2018).

After obtaining the necessary permissions from the local government and the institution, all participants provided informed consent. People were asked to complete surveys in person, and their privacy was guaranteed. We coded and analyzed the data using both descriptive statistics (such as frequencies, percentages, and weighted means) and inferential statistics (such as correlation analyses) to examine the relationships between the information and attitude variables.

Throughout the study, ethical guidelines were followed. Participation was entirely voluntary. Respondents were informed of the purpose of the study, assured that their responses would remain confidential, and advised that they could withdraw from participation at any stage without penalty. No personally identifiable information was collected, and all data were used solely for research purposes.

RESULTS AND DISCUSSION

Profile of the Respondents. The age distribution of respondents indicates that younger adults comprise the majority of street food vendors in Poblacion

II. The largest proportion belonged to the 23–27 age group, followed by those aged 28–32 years, while only a few respondents were in the older age brackets. Similar patterns have been observed in developing countries, where economically active young adults commonly undertake street vending due to its relatively low capital requirements and flexibility (Alimi, 2016). Street food vending may therefore serve as an accessible source of livelihood for individuals seeking income-generating opportunities with relatively minimal financial investment.

Regarding the sex of respondents, more male than female street vendors participated in the study. Similar demographic patterns have been reported in developing countries where street food vending serves as an accessible livelihood option for economically active individuals (Alimi, 2016). However, data from other parts of the Philippines show that more women than men work as street vendors (Lues et al., 2006). These differences suggest that the number of men and women selling food informally may depend on the business and on how the community functions.

Most of the people who answered had either finished high school or were close to finishing. Similar educational trends have been observed among street food vendors in developing countries, where many have only a secondary education and learn about food safety through work experience and informal learning (Lues et al., 2006).

Even so, learning about food safety does not have to come from school. It can also come from experience, learning from others, and private training. Many of the people who answered had been selling food on the street for between one and five years, according to the length-of-service statistics. Few people had been in the business for more than fifteen years. This trend is similar to what Hossen et al. (2020) found: many vendors had been working in the field for only a short time. The presence of new sellers underscores the importance of ongoing training and orientation programs to ensure compliance with food safety standards.

Food Safety Knowledge

Personal Hygiene. The findings indicate generally high levels of self-reported knowledge regarding personal hygiene practices. Washing hands with soap during food preparation received strong agreement among respondents. Hand hygiene is widely recognized as a primary measure in reducing foodborne disease transmission (World Health Organization [WHO], 2015). The strong endorsement of this practice may reflect awareness of its importance in everyday food handling.

Gloves can reduce the risk of contamination when used correctly and replaced regularly; however, improper glove use may create a false sense of security and contribute to cross-contamination (Food and Agriculture Organization & World Health Organization [FAO & WHO], 2011). The composite scores indicate that respondents have a solid understanding of

fundamental hygiene procedures. These findings are generally consistent with Hossen et al. (2020), who reported that street food vendors demonstrated awareness of basic hygiene and sanitation practices despite operating within informal food environments. Similar observations have been reported by Medeiros et al. (2001), who emphasized that food safety education plays an important role in reinforcing hygienic food-handling practices among food workers and consumers alike.

It is crucial to remember, nevertheless, that having knowledge does not always mean that things will be done consistently, especially in informal settings where resources and infrastructure may be limited (WHO, 2010).

Sanitation Practices. Respondents had favorable attitudes toward cleaning techniques. Regular utensil cleaning and adequate upkeep of waste disposal facilities were strongly recommended. Clean food-contact surfaces are widely acknowledged as critical to reducing microbiological contamination (WHO, 2015). The high ratings in this category indicate that suppliers value cleanliness as an important feature of their business.

Washing raw food before preparation earned slightly lower scores than other cleaning activities. This could be due to differing interpretations of safe washing practices or varying access to clean water. Nonetheless, the composite mean shows a positive overall opinion toward sanitation.

Food Safety Attitudes

Cleaning Procedures. Respondents had favorable attitudes toward cleaning techniques. Regular utensil cleaning and adequate upkeep of waste disposal facilities were strongly recommended. Clean food-contact surfaces are widely acknowledged as critical to reducing microbiological contamination (WHO, 2015). The high ratings in this category indicate that suppliers value cleanliness as an important feature of their business.

Washing raw food prior to preparation earned slightly lower ratings than other cleaning chores. This could be due to differences in perceptions of suitable washing practices or a scarcity of clean water. Nonetheless, the composite mean shows a positive overall perception of sanitation.

Attitudes toward food safety are significant because they can influence behavioral intentions and actual behaviors, according to the Theory of Planned Behavior (Ajzen, 1991). Vendors that have a favorable attitude toward food safety may be more likely to practice safe handling when conditions allow.

Food Preparation Practices. The findings also point to positive attitudes toward safe food preparation. Washing utensils with soap and water before use got widespread support. Proper cleaning and sanitation of food preparation equipment are recognized as important preventive strategies for minimizing contamination and reducing food safety risks (FAO & WHO, 2011).

Although opinions were largely positive, global research has shown that positive attitudes do not necessarily translate into optimal behavior, especially when environmental constraints are present (Hossen et al., 2020). As a result,

while the current findings are positive, continuing practice with practical food safety skills is essential.

Relationship Between Profile and Food Safety Knowledge. Statistical analysis revealed a significant association between age and food safety knowledge. The correlation coefficient ($\rho = .362$) indicates a weak positive relationship between age and food safety knowledge. Although statistically significant, the magnitude of the association suggests that age explains only a small proportion of the variation in food safety knowledge among respondents. Older respondents tended to demonstrate slightly higher knowledge scores. This observation may suggest that accumulated experience contributes to knowledge development. Similar findings were reported by Rahman et al. (2012), who identified age as a factor influencing food safety knowledge.

Table 1. *Relationship Between Respondents' Profile and Food Safety Knowledge*

Variables	Statistical Test	Test Value	p-value	Decision	Interpretation
Age & Knowledge	Spearman's ρ	0.362	0.042	Reject H_0	Significant
Sex & Knowledge	Chi-square	1.505	0.534	Fail to Reject H_0	Not Significant
Education & Knowledge	Chi-square	1.360	1.000	Fail to Reject H_0	Not Significant
Length of Service & Knowledge	Spearman's ρ	-0.184	0.313	Fail to Reject H_0	Not Significant

The statistically significant relationship between age and food safety knowledge was weak in magnitude ($\rho = .362$), suggesting that although older vendors tended to have slightly higher knowledge levels, age alone was not a strong predictor of food safety knowledge.

No significant relationships were found between knowledge and sex, educational attainment, or length of service. These findings suggest that food safety knowledge in this context may not be strongly determined by formal schooling or duration in the business. Comparable patterns have been observed in certain international studies (Hossen et al., 2020).

Relationship Between Profile and Food Safety Attitude. No significant relationships were found between demographic characteristics and food safety perceptions. Age, gender, education level, and duration of service did not appear to have a significant influence on opinions in this sample. While some studies have identified demographic characteristics associated with food safety attitudes (Hossen et al., 2020), contextual differences may explain variations across settings.

Correlation Between Knowledge and Attitude. The correlation coefficient ($\rho = .567$) indicates a moderate positive relationship between food safety knowledge and food safety attitudes. This suggests that vendors who possess higher levels of food safety knowledge tend to exhibit more favorable attitudes toward food safety practices. While the relationship is statistically

significant, it does not establish causality, and other factors may also influence food safety attitudes.

Table 2. *Correlation Between Food Safety Knowledge and Attitude*

Variables	Statistical Test	Test Value	p-value	Decision	Interpretation
Knowledge & Attitude	Spearman's ρ	0.567	0.001	Reject H_0	Significant

Similar relationships between food safety knowledge and favorable food safety attitudes have been reported in international studies, suggesting that increased awareness of food safety principles may contribute to more positive perceptions of safe food-handling practices (da Cunha et al., 2014). Although correlation does not establish causation, the findings suggest that educational interventions may help strengthen positive attitudes toward food safety among street food vendors.

The findings should be interpreted in light of several limitations. The study used convenience sampling because no official registry of street food vendors was available, which limited the generalizability of the findings. The relatively small sample size and reliance on self-reported responses may also have introduced response bias. Future studies may employ larger samples and observational approaches to validate actual food safety practices.

CONCLUSION

The study indicated that street food sellers in Poblacion II, Tagbilaran City, typically had good levels of food safety awareness and showed a favorable attitude towards food safety practices, particularly in personal hygiene, sanitation, cleaning processes, and food preparation. The results indicate that the vendors have understood the need to uphold food safety standards in their everyday operation, and so contribute to public health protection. The statistically significant but weak positive association between age and food safety knowledge suggests that accumulated experience may contribute modestly to food safety awareness. However, the lack of significant associations between food safety attitudes and demographic variables suggests that positive attitudes towards food safety are common across vendor categories, regardless of gender, education level, or service duration.

More importantly, the statistically significant moderate positive relationship between food safety knowledge and food safety attitudes supports the Health Belief Model (Rosenstock, 1974), which proposes that individuals are more likely to adopt preventive health behaviors when they recognize health risks and understand the benefits of protective actions. Vendors with greater food safety knowledge also demonstrated more favorable attitudes toward hygienic food handling, suggesting that increased awareness may encourage stronger commitment to safe food practices.

The results also confirm the Theory of Planned Behavior (Ajzen, 1991), which highlights the role of attitudes in intentions and, ultimately, behaviors. The generally positive views among sellers suggest a favorable inclination towards compliance with food safety requirements, which may reinforce their desire to implement proper hygiene and sanitation practices. A positive attitude and proper knowledge create conditions conducive to safer food handling practices.

The findings are also consistent with the Diffusion of Innovations Theory (Rogers, 2003). The high levels of knowledge and positive attitudes toward food safety may reflect the successful dissemination and adoption of food safety information, government-led seminars, and public health campaigns among the street food vendor community. The apparent adoption of recommended food safety practices indicates that advancements in food safety have been gradually integrated into vendors' daily operations. In conclusion, the results supported the view that knowledge and attitude are crucial factors in advocating for food safety among street food vendors. The vendors showed generally encouraging levels of awareness and positive perceptions, but further education, supportive monitoring, and collaboration among stakeholders are needed to strengthen food safety culture and protect consumers and the community in the long term.

RECOMMENDATIONS

Based on the findings of the study, the following are recommended:

1. **Strengthen Continuing Food Safety Education.** The City Health Office and relevant local government agencies may continue conducting regular food safety seminars, workshops, and orientation programs for street food vendors. These activities should emphasize proper hand hygiene, sanitation practices, cross-contamination prevention, and safe food preparation procedures.
2. **Institutionalize Refresher Training Programs.** Given that food safety standards and public health concerns continue to evolve, periodic refresher courses may be conducted to reinforce existing knowledge and update vendors on current guidelines and regulations.
3. **Enhance Monitoring and Technical Support.** Local authorities may strengthen monitoring mechanisms through regular inspections and supportive supervision. Rather than focusing solely on compliance, inspections may also serve as opportunities to provide practical guidance and technical assistance to vendors.
4. **Promote Peer Learning Among Vendors.** Experienced vendors who demonstrate exemplary food safety practices may be encouraged to share their experiences and strategies with fellow vendors. Such peer-learning approaches can help foster a culture of food safety within the

- vending community.
5. **Provide Accessible Educational Materials.** Simple and culturally appropriate educational materials, such as posters, brochures, and visual guides, may be distributed in vending areas to serve as constant reminders of safe food-handling practices.
6. **Encourage Multi-Sector Collaboration.** Partnerships among local government units, educational institutions, health agencies, and vendor associations may be strengthened to develop sustainable food safety programs that support both public health protection and the livelihood needs of street food vendors.
7. **Conduct Further Research on Actual Practices.** Future studies may move beyond self-reported knowledge and attitudes by examining actual food handling practices through observation-based assessments. Additional variables such as food safety compliance, training participation, access to sanitation facilities, and consumer perceptions may also be explored to provide a more comprehensive understanding of food safety among street food vendors.
8. **Develop and Implement a Food Safety Enhancement Program.** Based on the findings, a Food Safety Enhancement Program may be designed and implemented that focuses on hygiene promotion, sanitation management, food-handling competencies, and continuous monitoring to sustain and further improve food safety standards among street food vendors in Tagbilaran City.

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