

## Food Safety Awareness and Practices of Street Food Vendors in Selected Barangays of Marawi City

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### Abstract

The study delved on identifying vendors' level of awareness towards food safety and practices on proper food handling. The researcher made use of quantitative approach specifically the descriptive-correlative research design. The data were collected through the use of survey questionnaires distributed to the twenty-six vendors from the three selected barangays namely: Saduc Proper, Lilod Saduc, and Panggao-Saduc. The respondents were selected through convenience sampling. Specifically, this study sought to explore the demographic profiles of the respondents such as sex, highest educational attainment and attended seminar or training related to food safety and hygiene. It also identified the vendors' level of awareness towards food safety and practices on proper food handling of street food. Lastly, it investigated the relationship between the demographic profiles of the respondents and the vendors' level of awareness towards food safety. Using the convince sampling, the data were collected from twenty-six (26) sample size. Based on the findings, it was found out that most vendors were females and have low educational levels. It was also revealed that there were only few who have been to seminar/training related to food hygiene and safety. Furthermore, this study found out that respondents were very aware of many food safety practices such as keeping their preparation areas clean and using the right utensils. However, there was a need to improve some practices such as preheating sauces and serving food quickly. In terms of the relationship between the respondents' demographic profile and their level of awareness on food safety, it resulted to negative moderate correlation between the demographic profile variables of gender, educational attainment, and seminars attended related to food safety and hygiene and the level of awareness among street food vendors on food safety practices. The researcher recommended that street food vendors must strictly observe safe food handling practices. They should be aware of the significance of these practices. In addition, they should attend seminar or training related to food safety and healthy food preparation practices to ensure a safer and healthier food environment for everyone's health.

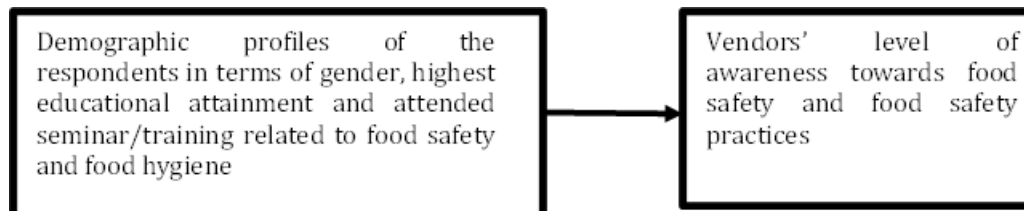
**Keywords:** Vendor; Street Food; Food Safety; Purchasing; Storing; Food Preparation; Cooking; Serving

### 1. Introduction

The popularity of street food in many cities stems from its affordability and flavorful options. However, keeping this type of food safe and clean is vital for everyone's health. The safety of the food sold by vendors is often a concern to many. Although street foods are quite numerous, vendors lack the resources and knowledge to ensure safe food handling practices. According to Food and Agriculture Organization (2007), street foods are described as ready-to-eat foods prepared and sold by vendors in public places. Furthermore, over 2.5 billion people eat street food every day. Nowadays, people would rather fulfill their dietary needs outside the house by buying meals from street vendors. In order to reach a large audience, street food is made and sold in crowded places like streets, schools, rail and bus terminals, and entertainment and festival venues. There is no need for extra processing or preparation when consuming these foods and drinks on the road according to Sezgin (2016). According to Dr. Thornton (2014), states that suppliers are in is responsibility of making sure customers obtain safe products. From the purchase to the preparation, storage, handling, serving, and cleaning, a single error could affect the food and present a health risk. Additionally, the

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Department of Health states that water-borne and food-borne illnesses are a collection of ailments brought on by both infectious and non-infectious conditions. Contaminated drinking water, inappropriate human waste disposal, unhygienic activities, and hazardous food handling and preparation are the most frequent causes of these. On the other hand, the three nations with laws protecting street vendors are Malaysia, the Philippines, and India. However, only Malaysia authorized street vendors and they have access to facilities for carrying out their business. In Durban, Africa, another ordinance was created that gave street sellers specified locations to work in, a certificate of approval, and instruction on basic food hygiene procedures, Rane (2011). Along these, the researcher was motivated to indulge on the issue of street foods sold by the vendors. This study further explored the vendors' level of awareness and concern about maintaining and practicing healthy food preparation practices.



**Figure 1** Schematic Diagram of the conceptual Framework

The figure 1 presented above illustrated the variables that were taken into consideration in this study. The primary objective of this research was to investigate the vendors' level of awareness towards food safety and practices towards proper food handling of street food. To guide the analysis of this study, a systematic model was introduced as a framework (refer to Figure 1). This schematic diagram was composed of two variables. The first box described the demographic profile of the vendors describing their gender, highest educational attainment and attended seminar/training related to food safety and food hygiene. The second box showed the level of awareness towards food safety and proper food handling of street food. As shown in the figure above, it can be seen that the demographic profile somehow influenced the vendors' level of awareness towards food safety and practices on proper food handling of street food.

## 2. Material and methods

The study aimed to identify vendors' level of awareness towards food safety and practices on proper food handling of street food. To determine the level of food safety awareness and practices of street vendors regarding the basic food safety for food handlers. The questionnaire had three parts: the first part was about the respondents' profile questionnaire that includes age, gender, educational attainment, and availability of sanitary permit. The second part of the was indicators on the Level of Food Safety Awareness Questionnaire (LFSAQ) such as hair nets, gloves, spoons that should all be used in preparing the food, utensils and ingredients must be cleaned before food preparation, area must be clean before and after food preparation, sauce should be preheated right before service, oil should be used a maximum of three times, food should be segregated by its variety, food must be placed in appropriate storage areas at their appropriate temperature, storage area must be clean and sanitized, and area must be clean before and after food preparation. Finally, the third part described the food safety practices of street food vendors' questionnaire (FSPSF) such as in purchasing of ingredients, in storing, in food preparation, in cooking, and in serving. This study employed a descriptive-correlative research design and utilized a Likert-scale questionnaire as the main instrument. Data gathering was conducted within Marawi City particularly at barangay Saduc proper, Lilod Saduc, Panggao Saduc and Mapandi during the year 2019. The respondents were selected through convenience sampling. The exact number of vendors in the research locale was 31 but only those who were willing and available became the sample of this study. In this study, there were 26 respondents in total. The researcher explained and translated the questionnaire to the respondents to ensure a complete understanding of the study. The data that were collected were subjected to different statistical analysis name frequency and percentage distribution to determine the response of the respondents on their profile and questionnaire and mode to calculate the central value of observations answered by the respondents.

## 3. Results and discussion

This section presents all the results of gathered data from the respondents. Table 1 presents the frequency and percentage distribution of the respondents in terms of sex. Out of 26 respondents, fourteen (14) or 53.9% are females whereas twelve (12) or 46.1% are males. This finding indicates that there are more females' street food vendors than males in the setting of the study. This finding also implies that street food vending is an occupation mostly done by women may be because it is not laborious, they can do without too much physical efforts.

**Table 1** Frequency and percentage distribution table of the respondents' sex.

Sex	Frequency	Percentage
Male	12	46.1
Female	14	53.9
Total	26	100.0

Table 2 presents the frequency and percentage distribution of the respondents' educational attainment. As it reveals in the data, twelve (12) or 20% of the respondents reach elementary level in terms of education, nine (9) or 34.6% of them reach high school level and only five (5) or 19.2% reach college level. This result indicates that there are more street food vendors who achieved elementary academic level. According to them, they resort to street vending to support their family and to meet their basic financial needs.

**Table 2** Frequency and Percentage Distribution of the Respondents' Educational Attainment

Educational Attainment Level	Frequency	Percentage
Elementary Level	12	46.2
High school Level	9	34.6
College Level	5	19.2
Total	26	100.0

The table 3 showed that respondents are aware about food safety practices for street food vendors. Most of the statements describe that people are either aware or highly aware of these practices. The highest level of awareness was for keeping the preparation area clean which shows that respondents understand its importance. Other practices such as cleaning utensils and proper food storage also receive high scores. However, statements such as cooking food thoroughly and preheating sauce show lower awareness levels. This implies that they may not be aware or they may have inadequate knowledge about its importance.

**Table 3** Sum, count, mode, scale and remarks distribution table of the respondents' level of awareness of the street food vendors on food safety

Indicators	Sum	N	Mode	Scale	Remarks
Hair nets, gloves, face masks, clean spoons and forks should all be used in preparing the food	81	26	23	3	Aware
Utensils and ingredients must be cleaned before food preparation	100	26	20	4	Highly Aware
Area must be clean before and after food preparation	129	26	25	5	Extremely Aware
Food must be cooked thoroughly- to at least medium heat	72	26	21	3	Aware
Sauce should be preheated right before service	71	26	14	3	Aware
Oil should be used a maximum of 3 times	81	26	24	3	Aware
Food should be segregated by its variety	95	26	15	4	Highly Aware
Food must be placed in appropriate storage areas at their appropriate temperature	105	26	25	4	Highly Aware
Storage area must be clean and sanitized	105	26	25	4	Highly Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

The result presented in the table 4 shows that respondents have a strong understanding of good practices when purchasing ingredients for street food. The highest among the practices are selecting reputable suppliers, checking

expiry dates, and ensuring the freshness of goods. The finding suggest that respondents observe these practices seriously. On the other hand, checking the supplier's experience and history have lower level as it marks as Moderately Aware This only indicates that not everyone prioritizes them. It is good that the level of awareness regarding most purchasing practices are high but checking the supplier's experience and history may enhance food safety among street food vendors.

**Table 4** Sum, count, mode, scale and remarks distribution table of the respondents' practices of the street food vendors in terms of purchasing, storing, food preparation, cooking, and serving in terms of purchasing of ingredients.

Indicators	Sum	N	Mode	Scale	Remarks
Always select a reputable supplier.	130	26	26	5	Extremely Aware
Check the experience and past history of the supplier.	45	26	19	2	Moderately Aware
Always check if the supplier has a food safety management system.	67	26	15	4	Highly Aware
Always check the expiry date of goods to be purchased	114	26	18	5	Extremely Aware
Check the proper packaging of the goods purchased.	104	26	26	4	Highly Aware
Always check goods freshness	123	26	19	5	Extremely Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

The table 5 indicates that respondents are generally very aware of proper food storage practices for street food vendors. Other practices also receive high level of awareness. This finding implies a strong commitment to safe food storage practices among street food vendors particularly in managing food freshness and rotation. However, continued education on other storage practices could further enhance food safety.

**Table 5** Sum, count, mode, scale and remarks distribution table of the respondents' practices of the street food vendors in terms of purchasing, storing, food preparation, cooking, and serving in terms of storing.

Indicators	Sum	N	Mode	Scale	Remarks
Not recycling or selling food that is no longer fresh or beyond expiry date	130	26	26	5	Extremely Aware
Keep storage area clean and sanitized.	108	26	22	4	Highly Aware
Segregate the variety of food	104	26	26	4	Highly Aware
Place food in appropriate storage areas and appropriate temperature..	109	26	21	4	Highly Aware
Use clean, dry containers and wrappers if food needs to be divided into smaller quantities or re-wrapped.	81	26	11	4	Highly Aware
First In First Out (FIFO, Consume the previously stored food before using the new purchase) procedure in storing food.	128	26	24	5	Extremely Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

The table 6 presents that respondents are mostly very aware of good food preparation practices. This signifies that they are extremely aware that cleaning the area before and after cooking and using a fresh spoon for tasting must be observed. Washing hands and planning food preparation also receive a Highly Aware Level meaning respondents know its importance but might still need some reminders to always do them. Meanwhile, the practice of covering hair while cooking gets a lower level with only an "Aware" rating. The finding shows that while some vendors remember to do it, some may regard it as not important. To improve food safety and maintain healthy food environment, it is helpful to give utmost importance to all practices especially covering hair.

**Table 6** Sum, count, mode, scale and remarks distribution table of the respondents' practices of the street food vendors in terms of purchasing, storing, food preparation, cooking, and serving in terms of food preparation

Indicators	Sum	N	Mode	Scale	Remarks
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Cleaning of area before and after food preparation.	113	26	15	5	Extremely Aware
Cover hair at all times.	89	26	17	3	Aware
Wash your hands with water and soap before working with food and regularly throughout the preparation period.	104	26	18	4	Highly Aware
Plan your preparation so there is plenty of time for thorough thawing or cooling, and so that food is not left lying around before sale or service.	103	26	17	4	Highly Aware
Use a fresh, clean spoon each time you need to taste-test the food.	114	26	16	5	Extremely Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

The table 7 shows that respondents have a high knowledge of cooking practices. Respondents are very aware of the importance of covering food when not stirring and ensuring that cooking utensils are clean and sanitized. Moreover, using oil multiple times also has a "Highly Aware" rating which means that respondents recognize this practice but may not see it as a top priority. conversely, respondents are not aware of the practice of preheating used sauce as it has a very low rating. The finding connotes that many respondents do not consider this practice important or may not be aware of its significance.

**Table 7** Sum, count, mode, scale and remarks distribution table of the respondents’ practices of the street food vendors in terms of purchasing, storing, food preparation, cooking, and serving in terms of cooking

Indicators	Sum	N	Mode	Scale	Remarks
Using of oil many times.	97	26	19	4	Highly Aware
Preheating the used sauce.	30	26	22	1	Not Aware
Cover food when not stirring.	99	26	14	5	Extremely Aware
Make sure all cooking utensils are clean, sanitized.	119	26	15	5	Extremely Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

The result presented in the table 8 shows the differences of level of awareness towards food serving practices. Keeping food covered and cleaning serving trays receives a highest level which shows that these practices are well understood and prioritized by the respondents. However, serving food quickly after preparation only gets a moderately aware rating. Meanwhile, the practices of ensuring that food handlers are clean and discarding food after a certain time have a highly aware rating. This shows that respondents understand the significance of hygiene and food safety timelines. However, the statement about not returning uneaten food gets a lower rate which mark as aware. It can be seen that respondents highly observed some serving practices but there is a need to boost awareness about serving food quickly and the implications of food safety.

Moreover, table 9 presents the relationship between the demographic profile of the respondents and the level of awareness of the street food vendors on food safety. The findings of the study show that there are moderate negative correlations between demographic factors such as gender, educational attainment, and attending food safety and hygiene seminars and the level of awareness of street food vendors about food safety. This indicates that as one factor increases, the other decreases. Furthermore, the result implied that different demographic groups may need specific education to improve their understanding of food safety.

**Table 8** Sum, count, mode, scale and remarks distribution table of the respondents’ practices of the street food vendors in terms of purchasing, storing, food preparation, cooking, and serving in terms of serving.

Indicators	Sum	N	Mode	Scale	Remarks
Serve food as quickly as possible after preparing, cooking, reheating or removing from fridge.	84	26	14	2	Moderately Aware

All food handlers should be clean themselves.	93	26	17	4	Highly Aware
Discard food after a specific amount of time.	93	26	12	4	Highly Aware
Keep food covered.	122	26	22	5	Extremely Aware
All serving trays must be cleaned and sanitized between usage.	97	26	13	5	Extremely Aware
Food that is not consumed or eaten by the consumers must not be returned back or need again	85	26	19	3	Aware

Legend: 1 = Not Aware; 2 = Moderately Aware; 3 = Aware; 4 = Highly Aware; 5- Extremely Aware

**Table 9** Pearson correlation between the demographic profile of the respondents and the level of awareness of the street food vendors on food safety

Socio demographic profile		Pearson Correlation	Verbal Interpretation	p-value	Decision	Remarks
Gender	level of awareness of the street food vendors on food safety	-0.533	Negative Moderate Correlation	.005	Reject Ho	Highly Significant
Educational Attainment		-0.560	Negative Moderate Correlation	.002	Reject Ho	Highly Significant
Seminars Attended related to food safety and food hygiene		-0.523	Negative Moderate Correlation	.006	Reject Ho	Highly Significant

\*p-value<0.05 – Fail to Reject Ho; Not significant

#### 4. Conclusion

The findings of this study showed an important information about street food vendors, their demographic profiles and awareness of food safety. It was found out that most vendors were female. Results implied that more women were in this line of work possibly because it required less physical strength. From the result of the study, many vendors have low educational levels, with most only completing elementary school. This led them to street vending to earn money to sustain for their basic needs and for their families. In addition, only few attended a seminar related to food safety while most of them have never been to it. Moreover, the study found out that respondents have decent awareness on food safety. It was undeniable that respondents have not yet reached the standards of achieving full health protocol in cooking and preparing street food. From what the results have shown, it seemed that the vendors observed many food safety practices such as keeping their preparation areas clean and using the right utensils. However, it was also revealed that there was a room for improvement especially about things like preheating sauces and serving food quickly. In terms of the relationship between the respondents' demographic profile and their level of awareness on food safety, it resulted to negative moderate correlation between the demographic profile variables of gender, educational attainment, and seminars attended related to food safety and the level of awareness among street food vendors on food safety practices. Specifically, gender, educational attainment and seminars attended -all showed statistically significant correlations, leading to the rejection of the null hypothesis (Ho). These results indicate that as the scores in these demographic factors increase, there is a moderate decrease in awareness levels. This result further implied that vendors with certain demographic profiles, such as higher educational attainment or participation in relevant seminars, might show different levels of awareness on food safety practices.

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