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Food Safety Awareness and Proper Hygiene among Food Vendors

Marjhun A. Babor[1], Ethel Grace A. Lanurias[2], May Jean D. Minggong[3], Dann Ian G. Broa, MAEd[4]
[1,2,3,4] University of Mindanao Digos College, Digos City, Davao Del Sur 8002 Students and Research Adviser

ABSTRACT: Proper hygiene practices among food vendors are crucial in ensuring food safety and preventing foodborne illnesses. Although food vendors play a critical role in the food supply chain, foodborne illnesses and food contamination can result from inadequate hygiene practices. This study aimed to assess the food safety awareness and hygiene practices of street vendors in Digos City. Eventually, data was collected from 150 randomly selected food vendors, and answered the adopted questionnaire using a 5-point Likert scale. The study used a descriptive-comparative research design to determine the awareness level of food vendors on food safety and proper hygiene. Based on the findings, the level of awareness on food safety is high. It indicates that food safety standards are consistently upheld across food vendors. While, the level of food hygiene among food vendors was described as high, thus, this indicates that the food hygiene among food vendors is well practiced and relatively evident. Findings also revealed that there was a significant difference between food safety awareness and proper hygiene practices among vendors when analyzed by profile. Hence, the study suggests that improving food safety and hygiene standards in Digos City can lead to a reduction in foodborne diseases and overall public health by implementing food safety training for vendors and must undergo regular inspections of city health office.

KEYWORDS: food safety, hygiene practices, food vendor

INTRODUCTION

Food safety is a growing public health issue in our society today. According to Azanaw, Gebrehiwot, & Dagne, (2019), food safety is still a major concern in industrialized and developing countries. The prepared food should be safe for consumption because food safety is vital to every food procedure. According to Gizaw (2019), food marketing still significantly impacts public health. Food markets increase health risks because food chains cross multiple borders. Therefore, effective food hygiene and food control systems are essential to protect the health and safety of consumers. The Department of Health (DOH) describes food safety as guaranteeing that food will not pose a risk to consumers when cooked or consumed.

The World Health Organization (WHO) (2022) claims that nations are severely affected by harmful hygienic food handling methods, lack of understanding, and lack of infrastructure. Most American restaurants' well-being infringement stemmed from improper preparation from human mistakes (Corigliano, 2021). Additionally, in Handan, China, most food vendors often handle food improperly and in unhygienic conditions (Ma et al., 2019). Training, policy, planning, and standard-setting can all help to reduce the number of foodborne diseases that food handlers in food businesses are responsible for. According to Adesokan et al. (2015), numerous research studies have shown that food safety training is an excellent way to raise the intelligence and behaviors of food vendors. Businesses must prioritize food safety and hygiene since these measures shield customers from food poisoning and disease.

Consequently, evaluating the maintenance and enforcement of food safety in healthcare facilities depends heavily on the food safety, knowledge, and practices of the food workers (Jaiswal, 2019).

Food safety and hygiene are crucial in the Philippines to protect consumer health and eliminate health concerns that harm their well-being. According to Azanaw, Gebrehiwot, & Dagne (2019), food handlers in the Philippines were not required to register for a food safety certification or obtain sanitary licenses. This led to dangerous and poor food preparation practices that exposed consumers to food-associated diseases. Food handlers who are knowledgeable about fundamental food handling techniques may be able to help prevent food poisoning because they frequently come into contact with food, especially ready-to-eat food. Food vendors should adhere to fundamental safety regulations to prevent diseases. Handlers who are fully informed of safe food handling procedures may be able to lower the incidence of food poisoning. New regulations must be regularly implemented to ensure a steady supply of safe and wholesome foods for people's health and well-being (Menon, 2018).

In many cases of food illness in Davao, the city councilor has strengthened the food safety regulations. Vendors can operate at the Roxas night market if they meet the conditions stipulated by the City Government of Davao's Office of Environmental Sanitation. These conditions are required to guarantee the safety of food and adequate sanitary conditions of Roxas night market to consumers and ensure the hygiene and security of the commodities and the food being offered. They preserve sellers' trust (Bornea et al., 2019).

The provisions of Republic Act 10611, formerly referred to as a law, seek to further strengthen the country's food security control system to safeguard consumers' well-being and to allow customers to buy local foods and food products, and would be adopted under this proposed law (Official Gazette,
2015). A local study titled "Hygiene and Sanitary Practices of Street Vendors in Digos Night Market" was being conducted in Digos City, and the goal of the investigation was to find out more about the safe, hygienic, and high-quality standards that the street vendors in the night market adhere to. However, this study does not aim to determine food vendors' awareness of food safety and proper hygiene. They also failed to determine significant differences in food safety and proper hygiene practices among food vendors, which were analyzed by demographic profile.

This study is anchored to Clayton et al.'s (2002) theory states that personal hygiene maintains emotional health, particularly cleanliness (McLauchlin et al., 2007). Food safety practices include personal grooming/hygiene, sanitation, safety training, and environmental hygiene. Brown, Selman, & Radke (2006, January) emphasized the importance of excellent cleanliness in limiting the transmission of foodborne infections. Humans were once thought to be the main contributory factor for food cross-contamination. A related observation (Thelwell-Reid, 2014) highlighted that erroneous handling of food techniques revealed that food management was critical to the client's security.

The findings of this study are beneficial to the community. This study aims to provide awareness and safety to the community and its people. This study would benefit the researchers by providing information about food safety and proper hygiene among vendors in Digos City. Readers would also benefit, as this would provide them with adequate data and information on the value of food safety, which would significantly influence individuals' health. More so, this would help future researchers as this study would serve as a reference point, additional knowledge, and ideas that would be helpful in their future studies. Hence, a study has yet to be conducted on food safety awareness and proper hygiene among food sellers in Digos.

Promoting food safety and proper hygiene among food vendors in schools for the health and safety of students and staff. Schools can create a safe environment by prioritizing food safety and hygiene, potentially leading to increased enrollment and improved overall performance. This study can also benefit students, who are particularly vulnerable to foodborne infections because they are the major consumers of food vendors. Promoting food safety and hygiene among vendors is critical to students' health and well-being. This avoids infections such as diarrhea, typhoid, and cholera and increases attendance and academic achievement, promoting a healthy lifestyle. Students can build lifelong habits to reduce illness transmission at school and in their communities by focusing on handwashing, avoiding cross-contamination, and safe food storage. Similarly, teachers can benefit from this study as they play an important role in student growth and teaching and promote food safety and hygienic practices. This boosts productivity and positivity while giving students the knowledge they need to make educated health decisions, instilling responsibility and accountability. Food safety and proper hygiene practices have a significant effect not only on schools, students, and food vendors but also on the entire community as it raises awareness. Thus, promoting food safety and basic hygiene standards can provide the community with a healthier and safer food supply.

RESEARCH OBJECTIVES

This study sought to ascertain awareness and proper hygiene in Digos City food vendors. This study intended to answer the following specific questions:

1. To determine the demographic profile of the food vendors in terms of:
   1.1 age;
   1.2 gender; and
   1.3 type of food business
2. To determine the level of awareness of food safety in Digos City food vendors:
3. To determine the level of food hygiene practiced by Digos City food vendors in terms of:
   3.1 food hygiene; and
   3.2 hygiene procedures
4. Is there a significant difference between food safety awareness and proper hygiene among the vendors of Digos City when analyzed by profile?

METHOD

Respondents

This study used a simple random sampling method to select the respondents. Simple random sampling entails selecting a sample from a population so that each individual has an equal probability of getting chosen (Statistics Canada, 2021). Anybody who worked as a food vendor in the selected areas of Digos City during the survey had the opportunity to be a respondent since the researchers used simple random sampling. Furthermore, if the study's terms and circumstances are unacceptable to the food vendors, they can stop the survey.

The respondents in this study are food vendors. Researchers select study participants from the general public. The respondents for the study were chosen based on the following criteria: they must be food vendors in Digos City, be at least 18 years old and above, and be willing to participate in answering the survey. According to researchers, regardless of the sort of food business, everyone who serves or sells food as a source of income to humans qualifies to participate in this study as a respondent. They are included, no matter how small or large their stalls and amenities are. The above-mentioned criteria are needed to acquire and gather data. These are all required because those locations and the identified respondents are more susceptible to the effects of food-handling practices.

Instruments

In the gathering data, the researchers used and modified a survey questionnaire validated by the experts to elicit responses regarding the variables employed in the survey. Moreover, the adopted questionnaire consists of two parts.

The first part aims to determine the awareness of food vendors regarding food safety. The second part deals with the hygienic practices of food vendors. The researchers also employ the Likert scale. Bhandari and Nikolopoulou (2023) state that it is a rating scale that evaluates beliefs, attitudes, and behaviors by responding to the questionnaire's items based on the degree of agreement. This can be seen in the table (1) below:

	Scale	Descriptive Level	Interpretation
	4.20 – 5.20	Very High	This indicates that the provisions relating to food safety awareness and proper hygiene embodied in the item is very well practiced, very much evident or always observed.
	3.40 – 4.19	High	This indicates that the provisions relating to food safety awareness and proper hygiene embodied in the item is seldom practiced and is not much evident or observed.
	2.60 – 3.39	Moderate	This indicates that the provisions relating to food safety awareness and proper hygiene embodied in the item are well practiced and relatively evident.
	3.40 – 4.19	Low	This indicates that the provisions relating to food safety awareness and proper hygiene embodied in the item are seldom practiced and is not much evident or observed.
	4.20 – 5.20	Very Low	This indicates that the provisions relating to food safety awareness and proper hygiene embodied in the item is not practiced or rarely present or non-existent.

Design and Procedure

This study utilized quantitative research using a survey research design. According to Creswell and Guetterman (2018), gathering, evaluating, interpreting, and documenting study results is a quantitative research design. A further point made by Creswell was that through looking at the relationship between variables, quantitative research may be used to examine objective hypotheses. Statistical processes can be used to obtain the numbered data from measuring these variables, usually instruments. The study uses this approach to determine Digos City food vendors' knowledge and awareness of food safety and proper hygiene. In addition, this method helped researchers to determine if food safety awareness and good cleanliness among Digos City vendors differ significantly when examined by profile. Overall, this approach gathered information about whether food vendors prepare food safely and maintain excellent hygiene to benefit their customers and the entire Digos City community.

The researchers create a letter of authorization from the UM Digos College's administration to formalize data collection. The researchers also prepared the survey questionnaire for validation. Data-gathering was conducted via face-to-face surveys after the research adviser and subject matter experts validated the questionnaire. Moreover, the individuals concerned had been notified. Consent was obtained before the distribution of the instrument, confirming the respondents' readiness and desire to participate in

the study. In conducting the study, researchers prioritized ethical considerations and privacy. They clearly outlined the study's goals and terms, ensuring participants' understanding and protection. Emphasizing fairness and honesty, they worked diligently to uphold ethical standards in their research practices. Once the researchers gained the trust of their participants and obtained their data, they allowed them to take the survey questionnaires. The researchers promised to return later on for retrieval. After meticulously checking, tallying, and computing the data per the study's objectives, analysis was conducted for further insights.

Various statistical tools are employed to appropriately handle the data. The first is frequency, which is used to determine the study's total number of participants in a particular category or group—in this case, the demographic profile. The second factor is the mean and standard deviation, which reveal how knowledgeable food providers are about food safety. Furthermore, when studied by age, gender, and business type, the Mann- Whitney U and Kruskal Wallis Test revealed significant differences in food safety and adequate hygiene.

Ethical Considerations

This study conforms strictly to the ethical norms and standards established by the UMDC RPC. The researcher diligently sought and received the relevant approval from important school administrators to accomplish this study. Proper authorization and consent are also obtained from the study's sample, in which they are assured that their rights would be fully protected in handling the data, particularly when handling the data which includes but is not limited to:

Voluntary Participation. The respondents' involvement is entirely optional and anonymous to preserve their privacy, and information is provided anytime the respondents have questions before deciding whether or not to engage in the study. Nowhere did the respondents' names appear, and only the researcher knew their exact answers. The researcher numbers the responses if they are to remain private, and only the researcher has the key to identify the number that belongs to which responder.

Privacy and Confidentiality. To safeguard the rights of study respondents, all information gathered from this study is kept private and confidential. **Informed Consent Process.** The researcher ensured that the respondents were fully informed of the advantages the school would receive from the study by using a concise and understandable survey form. Both the respondents themselves and the concerned school administration have given their consent for the survey to be undertaken.

Risks. Regarding physical, mental, or social considerations, this study did not involve any high-risk situations the community might encounter. It safeguarded and protected the rights of the respondents in the study.

Benefits. The findings of this study can be helpful to the community, especially to the food vendors in Digos City, because it would provide them with fresh knowledge for developing and putting into practice novel techniques based on the study's recommendations. Additionally, teachers and students will better understand how to consider the variables that might impact food safety. Lastly, the government and leaders in the community can also gain information and solutions from this study since they are working and exploring to improve and to make Digos City a clean and safer community.

Plagiarism. The researcher follows all of the proper and precise citation guidelines when using the ideas of other authors and experts. This study underwent grammatical and plagiarism testing using Turnitin and Grammarly tools.

Fabrication. The researcher ensured they avoided generating any fiction from her research because this study is based on several other studies. The information was, therefore, meticulously prepared and cited. Credible journals and other academic works for this research were utilized in every case.

Falsification. Since the study adheres to the requirements of the APA
7th edition citation style, no work has been misrepresented, or study data has been altered. The obtained facts and information are written in the most precise manner possible.

Conflict of Interest. There was no indication of a conflict of interest (COI), and there were no circumstances under which a professional decision regarding a primary interest, such as the welfare of the participants or the reliability of the research, might be influenced by a secondary interest, such as monetary or academic gains or recognitions.

Deceit. No type of dishonesty was used in the writings in this study to hurt the respondents' welfare. A group of professionals reviewed and verified all the written content.

Permission from Organization/Location. Formality and a clear commitment to upholding ethical norms are used in the research. Only with the authorities' sanction is the research carried out.

Authorship. Finally, when conducting the study, authorship credentials are taken into account. With the assistance and direction of the research adviser, the researcher made a significant contribution to the idea and design or to the collection, analysis, and interpretation of data. The researcher and adviser jointly draft the essay and critically review it for significant intellectual substance. Both have contributed to the research used to publish the findings.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Presented in Table 1 are the data that summarize the demographic profile, namely age, gender, and type of business of the 150 food vendors in Digos City. As seen in the table, 63 (42%) food vendors' ages fell to the threshold of 18-24 years old, followed by 30 (20%) food vendors already 25-34 years old. 57 (38%) of them belonged to the age range 35 years and above. Regarding gender, female food vendors took the lead with 106 (70.7%), far behind the 44 (29.3%) male food vendors. Moreover, as for their type of business of food vendors in Digos City, fast food took the lead with a total of 68 (45.3%). Street food vendors were next, with 20 (13.3%).

There were 18 (12%) eateries and 14 (9.3%) restaurants. Then, the cafeteria was 8 (5.3%). Coffee shops account for 6 (4%), and food houses account for 5 (3.3%). There were 3 (2%) Cafes. The rest of the types of business, namely, food hall, food cart, food hub, resto, cake, and pastries, have only 1 (0.7%).

Table 1. Demographic Profile of the Respondents, n=150

		f	%
Age	18-24 years old	63	42
	25-34 years old	30	20
	35+ years old	57	38
Gender	Female	106	70.7
	Male	44	29.3
Type of Business	Café	3	2
	Cafeteria	8	5.3
	Cake Shop	2	1.3
	Cake&Pastries	1	0.7
	Coffee Shop	6	4
	Donut Shop	1	0.7
	Eatery	18	12
	Fast Food	68	45.3
	Food Cart	1	0.7
	Food Hall	1	0.7
	Food House	5	3.3
	Food Hub	1	0.7
	Restaurant	14	9.3
	Resto,Cakes&Pas.	1	0.7
	Street Food	20	13.3

Level of Awareness of Food Safety

Table 2 displays the level of awareness regarding food safety with a focus on the 150 food vendors in Digos City. Overall, food safety scored a mean of 3.77 (SD=0.44), which is very high and indicates that food safety standards are consistently upheld across food vendors. The high mean indicates that Food vendors ensure safety and are cautious, especially when preparing and serving food to customers. Concurrently, it is clear from the findings of the Gador (2021) study that food handlers follow appropriate procedures when handling food and have adequate knowledge concerning food safety. The results also suggest that food safety is crucial to food vendors to ensure that their health and the safety of consumers are protected from any food-related issues. Based on the study conducted by Bihag et al. (2021), restaurants in the Municipality of Buenavista, Agusan del Norte, implemented food safety practices. This implies that supervisors and staff have successfully implemented food safety procedures.

Furthermore, the World Health Organization (2023) stated that governments should prioritize food safety as a matter of public health, as they are crucial in creating legal and policy frameworks and setting up and executing efficient food safety systems. Food safety is essential since contamination can have an impact on the entire world, damage a nation's economy negatively, or result in firm losses if it is discovered (Poot et al., 2022). Food safety training is one way to improve food safety, but owing to the short length of the current study, maintenance, and generalization cannot be recorded (Yu et al., 2018). The World Health Organization (WHO) has long been aware of the need to inform food handlers of their obligations for food safety. Food safety is an essential need. Still, there is a possibility that it could be disregarded in the development of effective and efficient operations (Kamboj et al., 2020).

Table 2. Level of awareness of food safety with a mean of n=150

INDICATOR	x	SD
Food Safety	**3.77**	**0.44**

Level of Food Hygiene among Food Vendors

Table 3 shows the level of food hygiene practiced by Food vendors in Digos City. The overall level of food hygiene towards food vendors was described as high ($\bar{x}$ =3.71; SD=0.68). This indicates that food hygiene among food vendors is well practiced and is relatively evident. Individual hygiene and sanitary procedures are very important in ensuring food safety and quality (Hassan et al., 2020). This implies that food vendors have a high level of food hygiene and a commendable standard of cleanliness and safety in their food preparation practices. This implies that they adhere to strict regulations, maintain proper sanitation, and prioritize the health and well-being of their customers. Such dedication to food hygiene ensures consumers trust these vendors for safe and healthy meals. A study also corroborated Azanaw et al.'s (2019) findings, highlighting the importance of good personal hygiene and food handling practices in preventing disease transmission and maintaining food safety laws. This ensures customer well-being and upholds the establishment's reputation, emphasizing the need for strict adherence.

Thus, food handlers play a crucial role in preventing food poisoning incidents. Still, this prevention can only be successful if they understand food safety, a prohygiene attitude, and hygienic food preparation and storage procedures (Yusof et al., 2018). It is frequently emphasized by (Letuka, & Nkhebenyane 2019) how important food hygiene is. Food handlers should always maintain a clean environment, one of the five keys to safer food.

Table 3. Level of Food Hygiene among Food Vendors, n=150

INDICATORS	˙x	SD
Food Hygiene	3.69	0.65
Hygiene Procedures	3.74	0.88
Hygiene Overall	3.71	0.68

Food Hygiene. Table 3 presents the level of food hygiene, with a mean of 3.69 (SD=0.65). This data provides valuable insights into the overall state of food hygiene practices among food vendors in Digos City. The mean value of 3.69 suggests that, on average, the level of food hygiene is relatively high. This indicates that establishments or individuals involved in food preparation adhere to proper cleanliness and safety standards to ensure the quality and safety of the food served. Food hygiene is crucial in maintaining food safety and quality throughout the entire food chain. Contamination can occur at any stage, from production to distribution. It is alarming that many foodborne illnesses result from improper preparation or mishandling at home, food outlets, or markets (Alamneh et al., 2022). Therefore, it is essential for food handlers to understand their responsibilities and adhere to proper hygiene practices to ensure the well-being of consumers. Doing so can prevent food-borne diseases and promote a healthier society. Additionally, Afolaranmi et al. (2014) highlighted that food hygiene is vital to ensure that the food you handle and prepare is safe for ingestion. If not maintained, people may become seriously ill from food poisoning and food-borne infections. As a result, food cleanliness is critical to protecting consumer health.

These results are also supported by a study conducted by Benitez & Olmogues (2021), which revealed that food vendors in Dipolog City adhered to strict hygienic standards, followed proper food preparation and processing procedures, prevented food contamination, and managed trash effectively. The finding was that both predictors had statistically significant effects on food hygiene practices, with food safety knowledge regarded as the most important component in predicting food hygiene practices. This is further supported by Tuglo, Agordoh, Tekpor, Pan, Agbanyo, & Chu (2021), which found that food handlers in the North Dayi District of Ghana had high levels of food safety and that these levels were substantially correlated with good knowledge and hygienic food handling methods.

Hygiene Procedures. On the other hand, the hygiene procedures mean it is 3.74 (SD=0.88). This indicates a significant emphasis on maintaining cleanliness and sanitation in various settings. The high mean value suggests that people are aware of the importance of hygiene and are actively implementing procedures to ensure a clean environment. The low standard deviation further signifies consistency in following these protocols across different individuals or organizations. Overall, this data highlights the significance of hygiene practices and their effective implementation for promoting health and well-being.

These findings supported by WHO (2018) emphasized the importance of enforcing good hygiene practices such as hand washing properly, wearing protective clothing, cleaning procedures for both equipment and the food environment, waste management, and regular training programs for food handlers, among other things. Likewise, good hygiene practices (GHP) are procedures conducted by best practice guidelines (Kamboj, Gupta, Bandral, Gandotra, & Anjum, 2020). Good Hygiene Procedures (GHP) are good hygiene practices that help to stop and manage foodborne illnesses. Eating foods that contain infectious or poisonous ingredients might cause food-borne diseases (Kamboj et al., 2020). The study (Letuka & Nkhebenyane 2019) revealed that all food handlers were aware of good hygiene habits such as frequent hand washing. Thus, when properly implemented, personal hygiene, especially hand washing, can greatly lower the risk of cross-contamination.

Additionally, Hassan & Fweja (2020) research found that vendors adhere to food safety regulations and hygiene standards to a moderate extent. Pilamala Rosales, Linnemann & Luning (2022) indicated that more than two-thirds of food sellers knew most of the regulations regarding food and personal hygiene procedures and reported that they always adhered to these criteria. To ensure that the acquired fundamental food safety and hygiene knowledge is translated into acceptable and safe food coding practices, food safety and hygienic practices should be a prerequisite to entering a food-selling operation. With this, proper hygiene should be practiced and observed. According to the Yusuf (2018) study, few vendors know sanitary measures due to a lack of training. For those who knew, but few practiced. Additionally, AlHazmi's (2021) research discovered that food safety knowledge among food vendors was good, and sellers demonstrated a high level of hygienic measures to ensure food safety and avoid food poisoning.

Significant Difference of the Food Safety and Proper Hygiene among Food Vendors as Analyzed by Age

Based on the data displayed in Table 4, which indicates that, in general, food vendors in Digos City differ significantly in terms of food safety along with proper hygiene based on their age groups and demographic profile, Chi-square (3,150) = 17.435, p = 0.000. It was able to reject the null hypothesis because of this outcome. The findings showed that food vendors in Digos City had a significant relationship with their understanding of food safety and adherence to food hygiene requirements when broken down by age. Because of this, the null hypothesis was successfully rejected, suggesting that despite the 150 food sellers' varying ages, their age has an important influence on food safety and hygiene.

Table 4. Food safety and proper hygiene as analyzed by age

	Age	N	Mean Rank	Chi Square	df	p-value
Food Safety	18-24 years old	63	76.73	0.125	2	0.939
	25-34 years old	30	73.37			
	35+ years old	57	75.26			
	Total	150				
Food Hygiene	18-24 years old	63	88.33	11.823	2	0.003**
	25-34 years old	30	75.77			
	35+ years old	57	61.18			
	Total	150				
Hygiene Procedures	18-24 years old	63	86.31	16.533	2	0.000**
	25-34 years old	30	87.75			
	35+ years old	57	57.11			
	Total	150				
Hygiene Overall	18-24 years old	63	88.98	17.435	2	0.000**
	25-34 years old	30	82.68			
	35+ years old	57	56.82			
	Total	150				

Stratev et al. (2018) refuted this finding by demonstrating that there is no significant correlation between awareness of food safety and age. Numerous studies have indicated that knowledge of food safety increases with age (Limon, 2021; Osaili et al., 2022); consistent with earlier research, the current study found that food handlers aged 50 and over demonstrated a good level of hygiene compared to other age groups. In addition, adults are reported to have better food safety insights, attributed to increased experiences in dealing with food safety issues (Ruby et al., 2018). A further rationale could be that most of these food workers were educated and from metropolitan areas. The small sample size in this age group may also impact the abovementioned results. Furthermore,

studies have observed that those over 60 had a higher likelihood of adhering to advised food safety procedures than individuals under 60 (Anderson et al., 2019). As a result, they typically had stronger food safety procedures and a higher understanding of the danger to food safety.

Similar findings were found in a study by Abakanda et al. (2023), which showed that food handlers were between the ages of 41 and 50. The study found that food handlers within this age group possessed knowledge of cleaning, sanitation, and hygienic practices. Additionally, according to Solon (2022), there was a significant difference in hygiene standards between age groups, implying that the younger food vendors are still learning and will eventually learn as they grow older. Nearly all workers who handled food understood the need for standard work hygiene procedures, like washing hands, donning gloves, and properly cleaning tools and utensils. According to these data, the adult population is more likely to adhere to the food safety practices that are advised.

Significant Difference of the Food Safety and Proper Hygiene among Food Vendors as Analyzed by Gender

Overall, Table 5 shows that there is no significant difference between males and females in terms of food safety and good hygiene (mean rank = 75.17, Sum of Ranks = 3307.50 and 75.64, Sum of Ranks = 8017.50), U = 2317.500, p = 0.952. This suggested that all 150 food vendors in Digos City who responded to the survey, regardless of gender, follow nearly identical sanitation standards. Therefore, this result did not successfully reject the null hypothesis.

Table 5. Food safety and proper hygiene as analyzed by gender

	Gender	N	Mean Rank	Sum of Ranks	Mann- Whitney U	Z Asymp. Sig. (2-tailed)
Food Safety	Female	106	77.55	8220.50	2114.500	-.901 368
	Male	44	70.56	3104.50		
	Total	150				
Food Hygiene	Female	106	74.39	7885.50	2214.500	-.488 .626
	Male	44	78.17	3439.50		
	Total	150				
Hygiene Procedures	Female	106	76.07	8063.50	2271.500	-.250 .803
	Male	44	74.13	3261.50		
	Total	150				
Hygiene Overall	Female	106	75.64	8017.50	2317.500	-.060 .952
	Male	44	75.17	3307.50		
	Total	150				

This result corroborated Jevšnik's et al. (2023) conclusion that men and women score slightly higher than women on tests measuring knowledge and practice of personal cleanliness. In contrast to the aforementioned, Taha (2020) claims that gender did not affect the disparities in food safety knowledge that were observed. The results were further corroborated using logistic regression, which revealed that women were more likely than men to possess sufficient knowledge about food safety (Ali et al., 2023). Furthermore, research revealed that women adhered to food safety regulations more closely than men did and that there was a significant correlation between sex and cleanliness (Benitez & Olmogues, 2021). It follows that gender is not a significant factor that could affect food safety or hygiene standards. However, there are significant differences in the understanding and practices of personal hygiene around food between male and female food vendors.

Significant Difference of the Food Safety and Proper Hygiene among Food Vendors as Analyzed by Type of Business

According to Table 6 data, the Kruskal Wallis test revealed that, overall, there is a significant difference in the food vendors' levels of hygiene and food safety when broken down by kind of business (Chi-square (13,150) = 51.002, p =.000). Similarly, Chi-square (13,150) = 29.571, p = 0.005 for food safety indicated a significant difference. As a result, the null hypothesis has been disproved. This clarified how the food sellers' standards for food safety and hygienic practices vary depending on the kind of business they handle.

Huynh-Van et al. (2022) corroborated these results with their research, which showed that the type of business, food varieties, business profile, and training are the main elements influencing food safety and good hygiene. Khuluse and Deen (2020) indicated an urgent need for basic infrastructure, such as a respectable food kiosk with enough working space and storage facilities, to improve food safety and hygienic procedures. Additionally, the study found that regarding food protection from dust and insects, food serving, hand hygiene, and wearing an apron, the survey discovered that food vendors in educational institutions generally followed good food hygiene procedures (Monney et al., 2013).

Table 6. Food safety and proper hygiene as analyzed by type of business

	Type of Business	N	Mean Rank	Chi- Square	Df	Asymp Sig
Food Safety						
	Food House	4	95.13	29.571	14	.005
	Cafeteria	8	61.94			
	Cafe	2	147.50			
	Coffee Shop	6	102.42			
	Food Cart	1	83.50			
	Eatery	18	86.06			
	Fast Food	68	67.06			
	Food Hall	1	99.00			
	Cake and Pastries	1	110.00			
	Food House	5	79.50			
	Resto	1	119.00			
	Restaurants	13	102.19			
	Food Hub	2	113.75			
	Street Foods	20	48.18			
	Total	150				
Food Hygiene						
	Food House	4	136.25	37.742	14	. 000**
	Cafeteria	8	70.19			
	Cafe	2	145.50			
	Coffee Shop	6	90.08			
	Food Cart	1	51.50			
	Eatery	18	70.44			
	Fast Food	68	74.66			
	Food Hall	1	72.00			
	Cake and Pastries	1	128.50			
	Food House	5	82.00			
	Resto	1	128.50			
	Restaurants	13	92.96			
	Food Hub	2	109.00			
	Street Foods	20	35.53			
	Total	150				
Hygiene Procedures						
	Food House	4	106.38	50.217	14	.000**
	Cafeteria	8	109.56			
	Cafe	2	144.00			
	Coffee Shop	6	88.83			
	Food Cart	1	128.50			
	Eatery	18	91.06			
	Fast Food	68	71.46			
	Food Hall	1	54.00			
	Cake and Pastries	1	107.50			
	Food House	5	83.10			
	Resto	1	102.50			
	Restaurants	13	88.81			
	Food Hub	2	94.50			
	Street Foods	20	21.18			
	Total	150				
Hygiene Overall						
	Food House	4	130.63	51.002	14	.000**
	Cafeteria	8	97.31			

	Cafe	2	147.00			
	Coffee Shop	6	91.42			
	Food Cart	1	105.50			
	Eatery	18	83.94			
	Fast Food	68	71.61			
	Food Hall	1	52.00			
	Cake and Pastries	1	127.00			
	Food House	5	84.00			
	Resto	1	120.50			
	Restaurants	13	91.38			
	Food Hub	2	105.50			
	Street Foods	20	22.47			
	Total	150				

Thus, Lyons (2019) emphasized that it is undeniable that the location and design of the facility are important factors to consider because they guarantee the safety of the food. Furthermore, Kibret and Abera (2022) confirmed that a deficiency in fundamental infrastructure and an inadequate understanding of cleanliness and best practices in food service establishments might lead to foodborne illness outbreaks. Azanaw et al. (2019) found that inadequate food safety practices at food establishments can be attributed to several factors, including inadequate facilities and infrastructure for sanitation, inadequate awareness and application of hygiene and sanitation among food handlers in food service establishments, and carelessness in safe food handling. Therefore, the data above makes it clear that consideration must be given to the possibility that a business's nature may impact food safety and the hygienic practices of food vendors.

CONCLUSION

In conclusion, most food vendors in Digos City were 18-24 years old, accounting for 42% of the total. The next largest age group was 25-34, representing

20% of the vendors. Food vendors aged 35 and above comprised 38% of the total. Regarding gender, female food vendors outnumbered males, 70.7% and 29.3% respectively. The most common type of business for food vendors in Digos City was fast food, comprising 45.3% of the total. Street food vendors accounted for 13.3%, followed by eateries (12%), restaurants (9.3%), cafeterias (5.3%), coffee shops (4%), and food houses (3.3%). Cafes, food halls, carts, food hubs, restos, cakes, and pastries represented only 0.7% of the total. The research findings indicate that the food vendors in Digos City exhibit high awareness and adherence to food safety and hygiene practices. The mean scores for food safety and hygiene were both high, suggesting that these standards are consistently upheld across the food vendors surveyed. The study also revealed that age and type of business have a significant influence on the understanding and implementation of food safety and hygiene practices. The findings further demonstrated that all food vendors, regardless of gender, follow similar sanitation standards. Overall, these results emphasize the importance of maintaining and promoting food safety and hygiene practices among food vendors in Digos City.

RECOMMENDATIONS

Based on the findings presented, recommendations were given:

The school may conduct training and seminars, promote healthy food options, and encourage student feedback. Conducting food safety and hygiene seminars and training should cover safe food handling, personal hygiene, and sanitation practices. The school should offer hand-washing sinks for students to ensure hand cleanliness and reduce contamination. Collaboration with vendors to promote healthy food options, including guidelines for nutritious meals, is important. Lastly, encouraging student feedback helps promptly identify and address potential food safety and hygiene issues.

Physical Education (PE) teachers and Music, Arts, Physical Education, and

Health (MAPEH) teachers play a crucial role in promoting food safety and proper hygiene among food vendors for the benefit of students. To achieve this, they should include lessons on food safety and hygiene in their curriculum, collaborate with the school authorities to ensure that food vendors comply with regulations, educate students on identifying signs of foodborne illnesses, and conduct awareness programs on food safety and hygiene.

It is important for students to educate themselves, be aware of food safety practices, avoid unhygienic food vendors, and be mindful of what they consume.

Washing hands before and after consuming food is also crucial. School clinics and PE Subjects should collaborate with health and sanitation departments to conduct training, incorporate lessons on proper hygiene practices, and encourage physical activity. This can help boost the immune system and make students less susceptible to foodborne illnesses.

Lastly, the government should enforce regulations, provide training programs, increase public awareness, and support schools. Regular inspections and penalties for non-compliance can help with enforcing regulations. Training programs for food vendors on safety and hygiene practices can be offered. Educational campaigns and programs can increase public awareness. Providing funds for facilities and training programs can help schools improve their food safety and hygiene standards.

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