

AWARENESS AND PRACTICE OF GOOD MANUFACTURING PRACTICES (GMP) AMONG STREET FOOD VENDORS IN CATARMAN, NORTHERN SAMAR

ABSTRACT

Street food vendors play a crucial role in providing affordable and convenient food options, especially for those who need to purchase necessities in small quantities. However, ensuring food safety in these informal food businesses remains a major concern. This study aims to investigate the level of awareness and practices of good manufacturing practices among street food vendors in Catarman, Northern Samar. Using a combination of descriptive quantitative and qualitative approaches, the researchers conducted interviews with vendors at the University of Eastern Philippines Main Campus. A survey questionnaire was administered to gather accurate information, while simultaneous observations of the vendors' operations were conducted. Data analysis involved tallying, frequency calculation, percentage determination, and mean calculation. It was found that despite belonging to a single association, the vendors employed different food safety practices in their businesses. The findings highlight the importance of enhancing food safety knowledge among street food vendors and implementing effective measures to prevent food-borne illnesses. This study contributes to the body of knowledge on the subject and offers valuable insights for policymakers and regulatory agencies in improving food safety practices within the street food sector.

Keywords: awareness, food safety, GMP, practices, street food vendors

I. INTRODUCTION

Street food is prepared or cooked food by vendors in a street or other public location for immediate consumption. Typically, street food is tasty, ready-to-eat food or drink sold on the street, in a market park, or other public place. It is sold by a hawker from a portable stall, cart, or food truck. In every region in the Philippines, you can always see street foods that most Filipinos buy and enjoy. But sometimes street food can cause harm to our health as well depending on how the hawkers prepare their product (Dagalea *et al.*, 2021). Street food vending is found all around the world but varies greatly between regions and cultures.

Vendors may obstruct traffic in the centers of increasingly congested cities, this had led some governments to attempt to remove vendors from certain sections of a city, usually without success. In recent years street food has become a hot topic, with people flocking from miles around to get a taste of the latest pop-up kitchen and develop a palate for the latest foodie craze. Whether it is an old-fashioned food truck, a more modern street kitchen, a market stall, or a food festival, it is evident that there is money to be made in the street food business. Originally food trucks were created to bring hot food to struggling areas of big cities, feeding the hungry workers who were often working very early or very late shifts and had no access to the usual restaurant opening times. These days however, food trucks are just as prolific as many of the highest quality restaurants, gastro pubs, and wine bars that you see on the high street, and people are actively seeking them out for a dining experience like no other. It is no wonder that many people are pursuing the quest to start up their own street food business – but where do you start? This guide aims to provide you with all the information you need to get started on the street food road to success.

According to BMC Public Health (2019), indicate that street food vendors typically use inadequate food handling techniques and that most of them work in unhygienic environments. Most street food vendors operate in unclean settings and often have poor food handling

procedures. The High-tech Industries Development Zone had the fewest street vendors who were knowledgeable about food safety, which is probably because these areas are situated in rural-urban borderline zones with generally low educational levels.(1) Younger consumers' perceptions of food safety were noticeably better than those of older age groups. Additionally, their levels of education varied, and younger people often had higher incomes.(2) The majority of sellers picked spots close to grocery stores or schools. Both customers and street food sellers understood the importance of food safety, but street merchants generally did not practice safe food handling.

John Stefanelli (2011) states that the behaviors and understanding of food safety concepts of street food vendors were investigated, with an emphasis on matters such as food contamination, good manufacturing practices, and health and personal hygiene. However, it was found that merchants lacked adequate knowledge of waste management and food regulation.

According to Leonard W.T. Fweja *et al.* (3)(2020), using inefficient and unclean methods to handle food is one of the causes of food contamination. The outcomes of street food vendors' food handling processes reveal several handling flaws that could expose food to contamination. The vending machines should ideally be constructed and designed in a way that makes cleaning and maintaining them easy. Every culture, whether it is underdeveloped, developing, or developed, depends on street food. As a result, maintaining a high degree of hygiene is crucial. Each region has a unique set of circumstances affecting the maintenance of hygiene. A study on the current knowledge of vendors regarding food safety and hygiene practices as well as methods of raw material procurement was also carried out.

Trafiaeket *al.* (2018) suggest (4) that the reason for better hygienic conditions in Poland may be better general education of street food vendors (5) than in developing countries, where only a small percentage of vendors have secondary education and the rest have primary or lower education. However, some authors contend that training and licensing, rather than education level, have an impact on increasing food safety knowledge and improving food handling.(6) Others demonstrated a strong correlation between vendors' practices for food safety and their level of education.(7) It is not unimportant that street food is frequently an uncontrolled activity employed in underdeveloped nations to address socio-economic issues by offering affordable meals and employment.

Hence, this study generally aims to investigate and describe the street food vendors' perception of their food safety practices and overall manufacturing processes of their food products.

II. METHODOLOGY

Prior to data collection, the researchers obtained formal approval from the university ethics committee. The researchers physically approached the respondents, explained the purpose of the study, and sought their voluntary agreement to participate. Informed consent was obtained to ensure that participants were aware of the study's objectives, procedures, and their rights as participants. The researchers utilized a survey questionnaire to gather data on the vendors' viewpoints regarding food safety. In addition to the questionnaire, individual interviews were conducted to gain a more comprehensive understanding of the subject. During the interviews, the researchers ensured clarity, respect, and confidentiality, allowing participants to express their opinions freely. Data collection took place at the University of Eastern Philippines in Catarman, Northern Samar, and was conducted during the months of October to December 2022. Each respondent was provided with a checklist as a survey form to gather information about their safety practices. The researchers ensured that the survey process was conducted professionally and respectfully, considering the respondents' time constraints and preferences. Throughout the data-gathering phase, the researchers adhered to ethical considerations by

following proper health protocols. After compiling the data, the researchers performed statistical analysis to systematically analyze and interpret the gathered information. They ensured that the analysis process was unbiased and accurate, using appropriate **statistical methods.**(8) Conclusions and implications were drawn based on the results, and the findings were reported objectively, ensuring the confidentiality and anonymity of the respondents.

III. RESULTS AND DISCUSSION

Table 1 shows the vendors' perception of food safety practices. In the table, it displayed that the highest indicator is the timeliness of the delivery of raw materials. Street food vendors have their different practices when it comes to receiving their raw materials from their respective suppliers, or the ones who sell them the raw materials they need for their daily operations. According to the Philippine Department of Health (2013), microbial contamination can be found in places of preparation, utensils and raw ingredients, time and temperature abuse of cooked foods, and personal hygiene of vendors. With that idea, food safety is the assurance that foods will not cause harm to consumers when eaten. The extensive processing of ingredients does not really matter to the vendors. This indicator got the lowest rating from the vendors' perception. They do not use any kind of process in cleaning their raw materials because they are not aware of what will happen if they do not follow the usual process. The World Health Organization (2006) explained food is inherently safe particularly if it has a history of traditional use. However, the application of unfamiliar processes, technologies, and poor handling may render food to be unsafe for consumption.

Table 1.Vendors' Perception in Terms of Food Safety Practices

Food Safety Practices	Mean	Interpretation
Usage of plastic wraps, foils, and cover	4.20	Effective
Timeliness of delivery of raw materials	4.53	Effective
Quality of raw materials	4.13	Effective
Extensive processing of ingredients	4.06	Very Effective

Legend: 5.00 – 4.60 Very Effective
 4.59 – 3.60 Effective
 3.59 – 2.60 Moderately
 2.59 – 1.60 Slightly Ineffective
 1.59 – 1.00 Ineffective

Table 2 shows the vendors' perception of their personal hygiene. It shows that washing hands is the highest indicator when it comes to personal hygiene. Everyone knows that hands are the basic tool in preparing and utilizing the ingredients from their storage until the time they are ready for selling. As noted by the Centers for Disease Control and Prevention (2012), street vendors often do not comply with safe and hygienic food handling practices, leading to a greater risk of having food-borne illnesses. In addition, it is often difficult to safeguard street food from unhygienic acts of passersby, such as sneezing or coughing near the food. Meanwhile, the lowest indicator is the presence of the exposure of food to handlers.

Table 2.Vendors' Perception in Terms of Vendor Hygiene

Vendors' Hygiene	Mean	Interpretation
Washing of hands	4.87	Very Effective
Changing of attire	4.67	Very Effective
Exposure to food-to-food handlers	2.40	Slightly Ineffective

Work under health condition	4.27	Effective
Presence in the workplace while on restroom breaks	3.43	Effective

Table 3 shows the vendors' perception in terms of food preparation. It shows that the cleanliness of utensils has a great factor for vendors. It is clearly obvious that even vendors are aware that they must observe cleanliness on things that they are using in selling their products to ensure that no harmful organisms are present. According to the Philippine DOH (2013), microbial contamination can be found in places of preparation, utensils, raw ingredients, time and temperature abuse of cooked foods, and personal hygiene of vendors. In relation to this, the combination of cooked foods and raw food got the lowest rating based on the indicator. Meaning, vendors are unaware that mixing raw food and cooked food can accumulate various threats. They should always be separated because microorganisms can multiply based on the temperature and their critical control points. According to Abdussalam (2010), a very important practice in food preparation safety is ensuring that raw and cooked foods are kept separate especially if there are no further intentions of processing or heating. A common mistake is often caused by simply overlooking the proper storage and sensible hygiene practices such as cleaning hands and/or equipment.

Table 3. Vendors' Perception in Terms of Food Preparation

Food Preparation	Mean	Interpretation
Cleanliness of utensils	4.83	Very Effective
Methods of recycling ingredients	3.87	Effective
Waste disposal	4.13	Effective
The temperature of the ingredients	4.27	Effective
Storing cooked products before selling	4.20	Effective
Combination of cooked foods and raw foods	2.20	Slightly Ineffective

Table 4 shows the vendors' perception in terms of environmental exposure. It shows that the maintenance of water reservoirs is very important. Water is one of the basic tools that vendors use in order to wash their hands, clean their surroundings, and tools in cooking, and preparing their products. If their containers are infected with any harmful organism, it may lead to food-borne illness that people do not want to experience. Remize (2014) explains the hygienic aspects of street food vending as a major concern for food control officers. Vending stands are often crude structures. Running water, washing facilities, and **toilettes(9)** are often unavailable. Improved safety of street foods among vendors can be achieved through raising an awareness program with the involvement of local authorities, government departments, consumer organizations, standard setting bodies, and non-government organizations. In line with this, the usage of chemicals is not that much used by the vendors. They are much known **on (10)** using just a simple cleaning product for them to **maintain (11) cleanliness** of their tools and equipment. They do not just rely on the benefits of using strong chemicals, but they are foreseeing the affordability of the cleaning products they are using because they do not earn much money to buy cleaning products that are expensive.

Table 4. Vendors Perception in Terms of Environmental Exposure to Food

Environmental Exposure to Food	Mean	Interpretation
Maintenance of water reservoirs	4.87	Very Effective
Maintenance of cooking materials	4.60	Very Effective

Prevention of smokers in the workplace	4.67	Very Effective
Work under environmental condition	4.47	Effective
Usage of chemical cleaners	3.27	Moderately

IV. CONCLUSION

This paper highlights the significance of timeliness in the delivery of raw materials, with vendors recognizing its importance for their operations. However, the application of extensive processing of ingredients received the lowest rating, indicating a lack of awareness among vendors regarding the potential risks associated with improper handling and preparation methods. It also emphasizes the criticality of handwashing as a fundamental practice for personal hygiene among vendors. Nevertheless, the exposure of food to handlers emerged as the lowest indicator, suggesting a need for increased awareness and measures to prevent contamination from external sources. It also underscores the vendors' recognition of the importance of utensil cleanliness in food preparation. However, the combination of cooked and raw foods received a lower rating, indicating a lack of awareness regarding the risks associated with cross-contamination. Proper separation of raw and cooked foods is crucial to minimize the potential multiplication of harmful microorganisms. Lastly, the findings highlighted the significance of maintaining clean water reservoirs for vendors. Clean water is essential for various aspects of food handling and preparation. However, the use of chemicals was not emphasized by the vendors, likely due to cost considerations.

These findings emphasize the need for comprehensive awareness programs and interventions to enhance food safety practices among street food vendors. Collaboration among local authorities, government departments, consumer organizations, standard-setting bodies, and non-government organizations is vital to improve the safety of street foods. Efforts should focus on providing education, resources, and infrastructure support to vendors, enabling them to adhere to proper hygiene practices, prevent cross-contamination, and maintain a clean environment. By addressing these areas of concern and implementing appropriate measures, the overall safety and quality of street food can be improved, thereby reducing the risk of food-borne illnesses, and promoting consumer confidence in street food vendors.

References

- Aquino, John Paulo L. et al. (2015). Perception of Street Food Vendors. 15 - 345.
- C. O. Chukuenzi (2010). Food safety and hygienic practices of street food vendors in Owerri, Nigeria, *Studies in Sociology of Science*, 1 (1): 50 – 57.
- City of Harare (2018). Cholera Alert! Health Promotion Section, City Health Department, Harare.
- C. Alamo-Tonelada et al (2018). C. Muyanja, L. Nayiga, N Brenda and G. Nasinyama (2011). Practices, knowledge and risk factors of street food vendors in Uganda, *Food Control*, 22 (2011): 1551 – 1558.
- D. Falkenstein (2010). Prevent Outbreaks: send sick food handlers home <http://foodafrica.nri.org/safetypapers/ShaliniVytelingum.pdf>
- Dagalea, F. M. S., Lim, K. M. C., Vicencio, M. C. G., Ballicud, J. J. C., Burac, M. R. B., Vibar, J. J. B., & Villadolid, V. B. E. (2021). Are Street Foods Safe: Detection of *Escherichia coli* in Street Foods Sauces. *South Asian Journal of Research in Microbiology*, 9(3), 41–45. <https://doi.org/10.9734/sajrm/2021/v9i330212>

- District Jamila K. Hassan, Leonard W.T. Frewja First published: 30 June (2020) , Food Hygienic Practices and Safety Measures among Street Food Vendors in Zanzibar Urban <https://doi.org/10.2991/efood.k.200619.001>.
- F M. Danikuu, F. B. Baguo and O. Azipala (2015). Hygiene practices among street food vendors in Tamale Metropolis, *Journal of Medical and Biomedical Sciences*, 4 (3): 25 – 30.
- F Muhonja and G. K. Kimathi (2014). Assessment of hygienic and food handling practices among street food vendors in Nakuru town in Kenya, *Journal of Public Health*, 2 (6): 554 – 559.
- F. O. Aluh and D. O. Aluh (2017). Knowledge, attitudes and practices of food hygiene among mobile food vendors in a Nigerian rural settlement, *International Journal of Community Aluh, F. O. and Aluh, D. O. (2017) “Knowledge, attitudes and practices of food hygiene among mobile food vendors in a Nigerian rural settlement”, International Journal of Community Medicine and Public Health*, 4(11), pp. 4025–4030. doi: 10.18203/2394-6040.ijcmph20174812.
- FAO (2013). Assuring food safety and quality: guidelines for strengthening food control systems, <http://www.fao.org>
- Htway, T.A.S.; Kallawicha, K. Factors associated with food safety knowledge and practice among street food vendors in Taunggyi Township, Myanmar: A cross-sectional study. *Malays. J. Public Health Med.* 2020, 20, 180–188.
- ImathluCurr. Res. Nutr. Food Sci. 2017, S. Street Vended Foods: Potential for Improving Food and Nutrition Security or a Risk Factor for Foodborne Diseases in Developing Countries? 5, 55–65.
- Ma, L., Chen, H., Yan, H. et al. Food safety knowledge, attitudes, and behavior of street food vendors and consumers in Handan, a third-tier city in China. *BMC Public Health* 19, 1128 (2019). <https://doi.org/10.1186/s12889-019-7475-9>
- Md. Khairuzzaman, et al (2014). Food Safety Challenges towards Safe, Healthy, and Nutritious Street Foods in Bangladesh, <https://doi.org/10.1155/2014/483519>.
- Nyoni, T.; Bonga (2019), W.G. Hygienic Practices of Street Food Vendors in Zimbabwe: A Case of Harare. *DRJ's J. Econ. Finance.*, 4, 23–34.
- Trafialek et al 2018. W. Street food vendors' hygienic practices in some Asian and EU countries—A survey. *Food Control.*, 85, 212–222.
- Walker E, Pritchard C, Forsythe S. 2003. Food handlers' hygiene knowledge in small food businesses. *Food Control* 14:339 – 343.