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Community Service: Food Safety Management Education and Practice Among Food Handlers in a Tourism Destination Area

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ABSTRACT

Background: *Food safety is a critical issue in the tourism sector, as handling unsafe food can lead to foodborne diseases and negatively affect public health and tourist satisfaction. Food handlers play an important role in maintaining food safety; however, their knowledge and practice are often still inadequate. This community service activity aimed to improve the knowledge of food handlers regarding food safety management at Negeri Kahyangan Tourism.*

Methods: *This activity was conducted on November 21, 2025, in Negeri Kahyangan Torism, Wonolelo Village, Sawangan District, Magelang Regency, involving 24 food handlers. This community service included educational sessions and hands-on practice on food safety management, covering personal hygiene, cross-contamination prevention, temperature control, and proper food handling. Evaluation was conducted using pretest and posttest questionnaires consisting of 15 items. Data were analyzed using the Wilcoxon test.*

Results: *The results showed an increase in the average knowledge score from 67.5 (pretest) to 79.72 (post test). The proportion of participants with good knowledge increased from 25% to 54.2%, while those with poor knowledge decreased from 20.6% to 0%. Statistical analysis indicated a significant improvement (p=0.002). However, some misconceptions remained, particularly regarding food handling during illness (66.7% incorrect), waste management (41.7%), and microbial contamination (37.5%).*

Conclusion: *The community service program was effective in improving food handlers' knowledge of food safety management. However, continuous education and practical reinforcement are needed, especially on critical aspects such as personal hygiene, waste management, and contamination prevention, to ensure safer food handling practices in tourism settings.*

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INTRODUCTION

Food safety is closely interconnected with nutrition and overall food security. Globally, it is estimated that around 600 million people approximately one in ten individuals, experience illness each year due to the consumption of contaminated food, leading to about 420.000 deaths annually. In low- and middle-income countries, unsafe food results in economic losses of approximately US$110 billion each year due to reduced productivity and increased healthcare costs. Children under five years old are disproportionately affected, accounting for 40% of the total foodborne disease burden, with an estimated 125.000 deaths annually. Furthermore, foodborne diseases hinder socioeconomic progress by placing pressure on healthcare systems and negatively impacting national economies, tourism, and trade (1).

In Indonesia, based on the 2019 Annual Report from the Center for Food and Drug Data and Information, most food poisoning incidents were linked to household-prepared foods, with 265 reported cases. Catering services were the second most common source, accounting for 97 cases. Meanwhile, street vended foods contributed to 43 reported cases (2). These findings indicate that food safety issues are not only limited to domestic settings but are also prevalent in food service environments, including those related to tourism activities.

Food safety is a key factor in ensuring competitiveness and sustainability within the hospitality and tourism industry. Unlike food security at the macro level, food safety directly influences tourist satisfaction, destination image, and the economic performance of hotels, restaurants, and other tourism services (3). Incidents of foodborne illness in tourism settings are particularly concerning, as they can reduce visitor trust and negatively affect the reputation of destinations (4). Therefore, strict food safety management practices are essential to maintain service quality and sustain the growth of the tourism industry.

Food contamination can occur at multiple stages throughout the food supply chain, including raw material handling, transportation, processing, packaging, and storage. Factors such as environmental pollution, inadequate cleaning and disinfection, improper cooking processes, and poor storage conditions contribute to the presence of harmful microorganisms and toxic substances in food (5).These risks are further exacerbated in street food and informal food service settings, where operational limitations often hinder the implementation of proper hygiene and sanitation practices.

Previous studies have highlighted that poor hygiene and sanitation practices among food service providers remain a major challenge. Common issues include inadequate personal hygiene, improper cleaning practices, cross-contamination, unsafe food handling, and insufficient temperature control during cooking and storage (6). In tourism areas, additional challenges such as high customer turnover, shared facilities, limited manpower, and inadequate sanitation infrastructure further increase the risk of food contamination (7). Other study also reported that consumers may be exposed to the risk of foodborne illnesses due to the presence of unsafe food (8).

From a behavioral perspective, food safety practices are influenced by the knowledge, attitudes, and practices (KAP) of food handlers. Although several studies have reported that food handlers generally demonstrate moderate knowledge and positive attitudes toward food safety, their actual practices often remain inadequate. A significant

gap between knowledge and practice has been consistently identified, indicating that knowledge alone is not sufficient to ensure safe food handling behaviors (9).

Hygiene and sanitation practices are shaped by food handlers' education, training, knowledge, and attitudes toward food safety. Therefore, regular hygiene and sanitation training should be conducted to enhance their knowledge, along with the development of clear guidelines for proper food handling and management (10). These efforts are essential to reduce the risk of food contamination and ensure safe food services.

A previous study on food handlers in the cafeteria found that their knowledge of food hygiene was at a moderate level, although several key areas still required improvement, particularly hand hygiene, prevention of cross-contamination, and proper food handling. More importantly, their practices remained insufficient, as evidenced by unsafe behaviors such as inadequate handwashing, improper cleaning methods, and the lack of use of personal protective equipment. These findings highlight a gap between knowledge and practice, indicating the need to enhance both understanding and its consistent application (11).

Negeri Kahyangan Tourism is located in Wonolelo Village, Sawangan District, Magelang Regency, Central Java, and is managed by BumDes Mekar Sembodo Mulya. This tourist destination covers an area of 1.5 hectares and is considered a relatively new attraction, with more than 10.000 visitors per month (12). This condition forms the basis for conducting a community service program aimed at food handlers in the destination's canteen, focusing on food safety in both theory and practice. It is expected that, in the future, food handlers will be able to carry out safer food processing practices to prevent foodborne illnesses and other health risks for visitors. This community service program contributes to strengthening food safety awareness and improving hygienic food handling practices among local food handlers in tourism settings.

METHODS

This community service program, consisting of food safety education and practical training, is a continuation of a previous activity on foodborne disease prevention. The program included both educational sessions and hands-on practice on safe and healthy food handling. It was conducted on November 21, 2025, and involved 24 food handlers from Kahyangan Negeri Tourism as participants. This activity phase consisted of three main stages: preparation, implementation, and evaluation.

Preparation stage

This stage involved coordination through meetings and focus group discussions (FGDs) with various stakeholders, including village officials, BUMDes management, food vendors, vegetable sellers, local youth, and farmers in the tourism area. Based on the results of this coordination and needs assessment, key food-related issues were identified, particularly concerning safe and healthy food processing among food stall operators, who are also local residents of Wonolelo Village. Before the activity was carried out, educational materials were carefully designed and adapted to suit the participants' needs, and appropriate evaluation instruments were developed to measure both knowledge and behavioral outcomes of the program**.**

This stage is also carried out collaboratively by the community service team and partners. This phase included scheduling the implementation timeline with partners, identifying the target participants, and preparing the educational media to be used. In addition, preparations for pre and post tests, development of learning materials, and

coordination with the Sawangan Community Health Center (Puskesmas) were also conducted during this stage.

Implementation Stage

The implementation stage consisted of a food safety management education session, which was a continuation of the previous activity on foodborne diseases and their prevention. This activity was conducted on November 21, 2025, and involved 24 food handlers at the Negeri Kahyangan Negeri Tourism. The program began with an opening remark by the community service program leader, an expert in agricultural sciences and community empowerment. It was followed by a pre-test, during which participants completed a prepared questionnaire. Subsequently, educational materials on food safety management were delivered by representatives from the Sawangan Community Health Center (Puskesmas) and the community service team.

After the class session, the activity continued with a practical implementation of food safety management at a designated food stall. Participants directly practiced the proper use of personal protective equipment, including aprons, masks, and head coverings. They were also guided on how to handle vegetables and meat, use cutting boards and knives appropriately, and apply safe and healthy food processing techniques.

Evaluation Stage

The evaluation stage was conducted through a post-test. The post-test was carried out by administering a questionnaire consisting of 15 items. The questionnaire consisted of 15 items designed to assess participants' knowledge of food safety. It covered key aspects including the basic concept of food safety (prevention of biological, chemical, and physical contamination), safe temperature and storage practices, personal hygiene such as proper handwashing after handling money, and the correct use of personal protective equipment. The results of the post-test were used to measure the effectiveness of the educational intervention in improving participants' knowledge.

In addition, the questionnaire addressed cross-contamination prevention (e.g., the use of separate utensils for raw and cooked foods), proper waste management, safe use of cooking equipment, and appropriate food handling practices during illness. It also included items on food storage conditions, reuse of cooking oil, food cleanliness perception, sanitation of equipment and surfaces, food serving practices, and the importance of maintaining food safety throughout all stages, from purchasing to serving. These items were included to provide a comprehensive assessment of participants' food safety knowledge in daily food handling practices.

RESULTS

The community service activity involved 24 food handlers at Negeri Kahyangan Tourism. The program focused on improving their knowledge and practices related to food safety. Participants actively engaged in both educational and practical sessions provided during the activity. Overall, the intervention aimed to strengthen safe food handling behavior in the tourism setting.

Table 1 shows that the pre-test scores had an average of 67.5, with a minimum score of 40 and a maximum of 87, while post-test scores increased to an average of 79.72, with a minimum of 60 and a maximum of 100, indicating an overall improvement in participants' knowledge after the intervention. In addition, Table 1 shows a clear

improvement in participants' food safety knowledge, where the proportion with good knowledge increased from 25% (n=6) to 54.2% (n=13), while no participants remained in the poor category (0%), indicating a significant positive shift in knowledge levels.

Table 1. Pre and Posttest Level of Knowledge of Safety Food Management

Level of knowledge	Pretest		Posttest	
	n	%	n	%
Good	6	25	13	54.2
Moderate	13	54.2	11	45.8
Poor	5	20.6	0	0

These findings indicate that the community service intervention was effective in improving participants' understanding of food safety management. The shift from moderate and poor categories to the good category suggests a positive impact on the educational activities provided, highlighting the importance of continuous health education in enhancing community knowledge and practices related to food safety. This improvement is expected to contribute to safer food handling practices and reduced risk of foodborne diseases in the tourism setting.

Statistically, the community service activity was proven to improve participants' knowledge, as indicated by higher posttest scores compared to pretest scores. Based on the analysis using the Wilcoxon test, this improvement was confirmed. Prior to conducting the analysis, a normality test was performed, which showed that the pretest data (p=0.023) and posttest data (p=0.047) were not normally distributed. Therefore, the Wilcoxon test was applied. The results of the analysis are presented in Table 2.

Table 2. Wilcoxon Analysis of Pretest and Posttest Knowledge Scores Before and After Food Safety Management Education and Practice

Variable	Z	p-value
Pre-post		
Level of knowledge food safety management	-3.142	0.002

The results indicate that the community service program successfully improved participants' overall knowledge of food safety, as reflected by the increase in posttest scores compared to pretest scores. However, despite this improvement, several questions still showed a relatively high percentage of incorrect answers, suggesting that some concepts were not fully understood by the participants. The percentage of incorrect answers is presented in Table 3.

Table 3. Percentage of Incorrect Answers for Each Food Safety Knowledge Question

No	Question	Incorrect Answer (%)
1	Food safety means preventing biological, chemical, and physical contamination in food.	0
2	Cooked food remains safe at room temperature for more than 4 hours.	20.8

No	Question	Incorrect Answer (%)
3	Hands that have just handled money are still safe to use immediately for preparing food.	0
4	Hot food stored at 45°C is already in the safe zone and does not need to be reheated.	29.2
5	The same cutting board can be used for raw and cooked foods without washing it.	0
6	Using disposable gloves without washing hands beforehand is still effective in preventing cross-contamination.	20,8
7	Waste can be left uncovered as long as it does not produce a bad odor.	41.7
8	Rusty cooking utensils should not be used because they can contaminate food.	20.8
9	Storing food ingredients directly on the floor is safe as long as the floor is clean.	8.3
10	Food handlers who are coughing or have a cold are still allowed to prepare food as long as they wear a mask.	66.7
11	Reusing cooking oil more than three times is still safe as long as the color is not too dark.	4.2
12	Food that looks clean is definitely free from microorganisms.	37.5
13	Regularly cleaning tables and equipment can reduce the risk of contamination.	12.5
14	Serving food without a cover is acceptable as long as it is consumed quickly.	25
15	Food safety must be maintained from the purchase of ingredients to the serving of food to consumers.	0

Table 3 showed that the highest incorrect response was related to allowing sick food handlers to work while wearing a mask (66.7%), indicating poor understanding of disease transmission. Other misconceptions included waste management (41.7%), food cleanliness (37.5%), and safe temperature control (29.2%). These findings highlight remaining gaps in hygiene and food safety knowledge, suggesting the need for continued education.

The qualitative findings of the community service activity indicate an increase in participants' understanding and awareness of the importance of food safety in the management of daily meals. Participants were actively engaged in the discussion and question-and-answer sessions, particularly regarding personal hygiene practices, the prevention of cross-contamination, and safe food storage. Participants also showed enthusiasm in following demonstrations of hygienic food handling practices and were able to relate the material provided to their working conditions in the field. Furthermore, a positive change in attitude was demonstrated through the participants' commitment to begin applying food safety principles in food handling activities at their workplaces. This

indicates that the education provided not only enhances knowledge but also encourages behavioural change for the better. Below is the documentation of the activity:



Figure 1. Pretest for Safety Food Management and Practice for Safety Food Management

DISCUSSION

This community service program effectively improved food handlers' knowledge of food safety, demonstrating the value of a structured, context-based approach in tourism settings. However, knowledge alone does not guarantee safe practices, as behavior is also influenced by attitudes and real-life application. Therefore, improving food safety requires not only increasing knowledge but also strengthening attitudes and consistent practice. Therefore, improving food safety management requires not only enhancing knowledge but also fostering positive attitudes and consistent behavioral implementation (13).

The improvement in participants' knowledge can be attributed to the combination of theoretical instruction and hands-on practice. Practical demonstrations, such as the use of personal protective equipment and safe food handling techniques, enhanced understanding by allowing participants to directly apply the concepts. This aligns with previous findings that experiential learning is more effective than lectures alone. Additionally, the involvement of local stakeholders and the use of real working conditions increased engagement and relevance. Overall, these results emphasize the importance of community-based and participatory approaches in strengthening both knowledge and practice (14).

However, the findings also reveal that several critical misconceptions persisted, particularly regarding food handling during illness, waste management, and microbial contamination. This suggests that concepts related to invisible risks, such as microorganisms and disease transmission, are more difficult for participants to fully internalize. Similar challenges have been reported in other settings, where inadequate facilities and improper practices such as the use of basins instead of properly designed sinks for dishwashing result in ineffective cleaning and increased risk of microbial contamination (15). These findings indicate that, beyond knowledge improvement, both

conceptual reinforcement and adequate infrastructure are essential to ensure proper food safety practices.

The result revealed incorrectly that waste could be left uncovered as long as it does not produce an unpleasant odor. This misconception indicates a limited understanding of the risks associated with improper waste management, particularly those that are not immediately visible. In fact, the absence of odor does not eliminate the potential presence of harmful microorganisms or hazardous substances. Previous studies have emphasized that household waste, including food-related waste, may contain hazardous and toxic materials that pose risks to human health and the environment due to their persistence, toxicity, and potential cumulative effects (16).

The findings revealed that many participants incorrectly believed food handlers with coughs or colds could continue working if they wore a mask, indicating limited understanding of transmission risks. In reality, respiratory pathogens spread through droplets and contaminated surfaces, making mask use alone insufficient. Allowing symptomatic handlers to work increases the risk of cross-contamination, highlighting the need to exclude ill individuals and strengthen hygiene practices (17). Another study reported food-related transmission in China in July 2020, where SARS-CoV-2 was detected on frozen foods, packaging, and storage areas, with outbreaks linked to contaminated sources. The risk is heightened by the complex farm-to-table chain, which creates multiple opportunities for contamination (18).

In addition, the results imply a potential gap between knowledge acquisition and its practical application. Although participants demonstrated improved understanding, this does not necessarily ensure consistent implementation in daily practice. Factors such as workload, infrastructure limitations, and hygiene facilities in tourism areas may influence the ability of food handlers to apply safe practices (19). Therefore, improving knowledge should be complemented by environmental and managerial support to achieve sustainable behavior change.

The findings of this study are generally in line with previous research showing that food safety education can improve knowledge among food handlers, although some misconceptions and practice gaps often remain. This consistency suggests that while education is an essential first step, continuous reinforcement and monitoring are required to achieve optimal outcomes (14). The findings of this community service activity are consistent with previous studies showing that community-based education combining lectures, discussions, and practical simulations can improve participants' understanding of health risks and appropriate responses (20). In the context of food handlers, this approach is similarly relevant, as it enhances their ability to recognize food safety hazards and apply proper handling practices in real situations.

This community service activity has several limitations. First, it involved a relatively small number of participants from a single tourism site, which may limit the broader applicability of the findings. Second, the evaluation focused only on short-term knowledge improvement and did not assess long-term retention or actual behavioral changes. Third, contextual factors such as facility availability and environmental hygiene conditions were not systematically evaluated, although they may influence the implementation of food safety practices.

Overall, this study highlights the importance of continuous, context specific, and practice-oriented education in improving food safety in tourism settings. Future community service programs should incorporate follow-up training, monitoring of actual practices, and stronger collaboration with local stakeholders to ensure that knowledge

gains are translated into sustained and safe food handling behaviors. Such efforts are essential to maintain long-term improvements in food safety standards and protect visitor health in tourism destinations.

CONCLUSIONS AND SUGGESTIONS

This community service program successfully improved food handlers' knowledge of food safety in a tourism setting, with hands-on activities enhancing understanding. However, persistent misconceptions especially about microbial contamination, illness, and waste management showed that knowledge alone is not enough. This highlights the need for integrated, participatory approaches addressing knowledge, attitudes, and behavior. Future programs should include continuous training, regular evaluation, and on-site supervision to sustain behavior change. Strengthening practical components and improving sanitation facilities are also essential, while further studies should assess long-term impacts on practices and food safety outcomes.

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DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

AI tools were used solely for grammar and language editing. The authors take full responsibility for the content and integrity of the manuscript.

CONFLICT OF INTERESTS

The author states that there are no conflicts of interest, including financial, professional, or personal relationships, related to this community service activity.

REFERENCES

1. World Health Organization. Food Safety [Internet]. 2024 [cited 2026 Mar 18]. https://www.who.int/news-room/fact-sheets/detail/food-safety (accessed 2026 Mar 18)

2. BPOM. Laporan Kinerja Instansi Pemerintah Tahun 2019 Pusat Daya dan Informasi Obat dan Makanan. Jakarta; 2020.

3. Jasmina A, Nazarovna KL. Food Safety Management in the Hospitality and Tourism Sector: Implications for Tourist Satisfaction, Destination Image, and Economic Performance. Central Asian Journal of Innovations on Tourism. 2026;7(January):566–71.

4. Vu H, Nguyen M, Thao L, Ngo A, Nguyen K. Case Studies in Chemical and Environmental Engineering Food poisoning: A case study in Vietnam. Case Studies in Chemical and Environmental Engineering. 2023;7(January):100295. https://doi.org/10.1016/j.cscee.2022.100295

5. Kamboj S, Gupta N, Bandral JD, Gandotra G, Anjum N. Food safety and hygiene: A review. 2020;8(2):358–68.

6. Ayaz&Acar. A Research on Food Safety Knowledge and Practices of Tourism Employees. 2020;8(1):552–68. https://doi.org/10.21325/jotags.2020.564

7. Antariksa G, Dewi B, Umul S, Etheldreda Y, Dae I. Food Safety Assurance: Effect of Hygiene Sanitation practices on Quality Service and Tourist Satisfaction in Culinary Tourism Area of Kampung Ujung, Labuan Bajo. 2023;1(3):140–53.

8. Palupi IR, Budiningsari RD, Khoirunnisa FA, Hanifi AS. Food safety knowledge, hygiene practices among food handlers, and microbiological quality of animal side dishes in contract catering. 2024;13:237–43. https://doi.org/10.4081/ijfs.2024.12554

8. Segbedzi CE, Ansah EW, Apaak D. Assessing the Safety of Hotel Food: Knowledge, Attitude, and Practices of Food Handlers. 2024;2024. https://doi.org/10.1155/2024/7361284

9. Firdani F. Knowledge, Attitudes and Practices of Hygiene and Sanitation Implementation on Food Handlers. 2022;21(2):131–6.

10. Mahmudiono T, Nindyasari A, Segalita C, Nasikhah AD, Peng LS. Nutrition Education on Food Hygiene and Sanitation to increase Knowledge, Attitude and Practice among Canteen Food Handler in Indonesia. 2020;11(11):1396–400.

12. Wastutiningsih et al. Peningkatan Pengetahuan Pengolahan Makanan Sehat Untuk Cegah Foodborne Diseasesdi Wisata Negeri Kahyangan, Sawangan, Magelang. Gemakes: Jurnal Pengabdian Kepada Masyarakat. 2025;5:442–51. https://doi.org/10.36082/gemakes.v5i3.2362

13. Insfran-rivarola A, Tlapa D, Limon-romero J, Baez-lopez Y, Miranda-ackerman M, Arredondo-soto K, et al. A Systematic Review and Meta- Analysis of the Effects of Food Safety and Hygiene Training on Food Handlers. Foods. 2020;9(1169). https://doi.org/https://doi.org/10.3390/foods9091169

14. Tindan TN, Anaba CA. Scientific Hands-On Activities and Its Impact on Academic Success of Students: A Systematic Literature Review. IOSR Journal of Research & Method in Education (IOSR-JRME). 2024;14(6):39–47. https://doi.org/10.9790/7388-1406043947

15. Adebayo KA, Fagade OE, Oloruntoba EO, Lawal RR, Oyedele LO. Assessing environmental hygiene and food safety knowledge, attitudes and practices in boarding schools' food service establishments (FSEs) in. Food and Humanity. 2026;6(July 2025):100992. https://doi.org/10.1016/j.foohum.2025.100992

16. Alabi OA, Pasa TBC, Adebo TC. Environmental Contamination and Public Health E ff ects of Household Hazardous Waste. Journal of Biomedical Research & Environmental Sciences. 2023; https://doi.org/10.37871/jbres1801

17. Franjic S. Transmission of Pathogens can Occur in Various Ways. 2025;1(1):4–7.

18. Han J, Zhang X, He S, Jia P. Can the coronavirus disease be transmitted from food? A review of evidence, risks, policies and knowledge gaps National Health Commission of China. Environmental Chemistry Letters. 2021;5–16. https://doi.org/https://link.springer.com/article/10.1007/s10311-020-01101-x

19. Ahmed Mohammed Abdi et al. Food Hygiene Practices and Associated FactorsAmong Food Handlers Working in FoodEstablishments in the Bole Sub City, Addis Ababa, Ethiopia. Risk Management and Healthcare Polic. 2020;13:1861–1868.

20. Imowanto Y, Triyuliarto D, Zaelani MA. Community- Based Health Education to Improve Mountaineers' Knowledge and Attitudes Toward Mountain-Related Health Emergencies. Jurnal Empathy Pengabdian Kepada Masyarakat. 2025;6(2):93–101. https://doi.org/https://doi.org/10.37341/jurnalempathy.v6i2.354