Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 8 (2025)

Knowledge and Food Handlers Practices in University Canteen: Basis for Training Program

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Publication Date: August 8, 2025 DOI: 10.5281/zenodo.16926396

Abstract

Food safety in educational institutions is a critical public health concern, particularly in university canteen where food handlers play a vital role in ensuring the well-being of large student populations. This study assessed the knowledge and food handlers practices in a university canteen in Laguna, Philippines, to inform the development of a targeted food safety training program. Utilizing a quantitative descriptive research design, the study surveyed forty (40) purposively selected food handlers across various food service roles. The structured questionnaire examined demographics, food safety knowledge, and handling practices related to personal hygiene, food preparation, storage, and serving. Results indicated that a significant number of respondents lacked formal training in food safety, with 70% having no training at all. Despite having a basic awareness of hygiene principles, actual food handling practices were inconsistent, often deviating from established safety standards. Statistical analyses revealed notable correlations between food safety knowledge and specific demographic variables such as age, designation, and years of experience. The findings underscore the need for a comprehensive food safety training program that includes regular refresher courses and institution-wide monitoring. Such a program should address knowledge gaps and practical deficiencies, particularly in personal hygiene and food storage practices. This study contributes to the existing body of literature by providing localized insights into the food safety practices of university canteen staff and offers actionable recommendations to enhance food handling standards and reduce the risk of foodborne illnesses on campus.

Keywords*: Food Handlers, Food Safety, Hygiene Practices, Training Program, University Canteen*

INTRODUCTION

Food safety was a pressing global public health concern, with foodborne illnesses causing millions of cases and deaths each year (WHO, 2021). In higher education institutions, particularly universities, this issue was amplified due to the large populations of students and staff relying on institutional food services. The communal nature of campus dining increased the risk of contamination, making strict adherence to food safety practices essential to prevent outbreaks.

In the Philippines, foodborne diseases remained a recurrent issue, with the Department of Health (2019) reporting that improper food handling was responsible for around 37% of gastrointestinal infections nationwide. Many cases occurred in educational settings where food handlers had limited formal training. The Food and Drug Administration (2020) highlighted that a significant proportion of food handlers in the

Online ISSN: 3082-5121
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country's food service industry lacked adequate knowledge and failed to consistently apply proper safety measures, posing a threat to public health.

Laguna, home to several state universities, faced particular challenges in this regard. University campuses often operated multiple food vendors and dining facilities with varying levels of oversight. Inconsistencies in supervision, infrastructure, and safety compliance heightened the potential for foodborne disease transmission. A survey by the Philippine Association of State Universities and Colleges (2021) found that 58% of food handlers in Laguna's state universities had not received formal food safety training, while 40% of university food facilities failed to meet national safety standards.

Despite the significance of these issues, localized research on food safety practices in Laguna's higher education sector was scarce. Existing studies tended to focus on national trends or outbreaks in other regions, leaving a gap in understanding the specific challenges faced by food handlers in Laguna. This lack of targeted research limited the ability of institutions to design effective interventions tailored to their unique contexts.

This study addressed that gap by examining the food safety knowledge and practices of food handlers at a state university in Laguna. Guided by the Health Belief Model (HBM), it explored food handlers' perceptions of susceptibility to and severity of foodborne illness, the perceived benefits and barriers to following safety guidelines, the role of training and supervisory cues, and their self-efficacy in implementing safe practices. This theoretical approach provided a framework for understanding the cognitive and situational factors that influenced behavior.

Ultimately, the study aimed to generate evidence-based recommendations to strengthen food safety compliance in university food service operations. By identifying knowledge gaps, behavioral barriers, and training needs, it sought to contribute to the development of more effective food safety programs, thereby safeguarding the health of students, faculty, and staff in state universities across the region.

METHODOLOGY

This study employed a quantitative descriptive research design using a structured survey questionnaire as the primary data collection tool. The questionnaire, developed and validated by experts in food safety and public health, assessed food handlers' knowledge of food safety principles and their self-reported practices in personal hygiene, food preparation, storage, and serving. The instrument demonstrated high reliability, with a Cronbach's alpha of 0.960, and was pre-tested to ensure clarity and appropriateness.

The study population consisted of forty (40) purposively selected food handlers from a state university in Laguna, Philippines. Participants were directly involved in food preparation, serving, cleaning, and hygiene maintenance across various campus food service facilities. Selection ensured representation from different shifts and work roles to capture diverse experiences and challenges in maintaining food safety.

Data were collected on-site through the self-administered survey, with informed consent obtained prior to participation. Respondents were assured of confidentiality, anonymity, and voluntary participation. No identifying information was recorded, and all data were securely stored.

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Volume 1 Issue 8 (2025)

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the demographic profile and levels of food safety practices. Pearson's correlation tested relationships between demographic variables and food handling practices, while independent t-tests and one-way ANOVA examined differences across demographic groups.

Ethical considerations were strictly observed, with approval obtained from the relevant ethics committee. Participants were fully informed about the study's purpose, their rights, and their freedom to withdraw without consequence. Confidentiality was maintained by coding responses and restricting access to collected data.

RESULTS AND DISCUSSION

The study revealed that the majority of food handlers at the State University in Laguna were aged 30 to 39 years old, predominantly female, and designated as food handlers. Most had limited or no formal training in food safety, with the majority possessing only one to three years of work experience, while a significant number had less than one year in the role. These findings indicated a relatively young and inexperienced workforce, with limited exposure to structured food safety education and a notable gender disparity favoring female workers.

Despite the lack of extensive training, food handlers demonstrated a very high level of adherence to food handling practices across personal hygiene, food preparation, food storage, and food serving. Among these, personal hygiene was the most consistently practiced, reflecting strong awareness of its role in preventing contamination. However, minor gaps were observed in food serving practices, particularly in maintaining correct temperatures and minimizing direct hand contact. These results were consistent with existing literature emphasizing the importance of hygiene, safe preparation, proper storage, and cautious serving in preventing foodborne illnesses.

Statistical analysis showed that among the demographic variables, only age and the number of trainings attended had significant relationships with certain aspects of food handling. Age was significantly associated with food preparation and storage, while training attendance was significantly related to food preparation, storage, and serving. Other factors, such as sex, designation, and years of experience, did not show significant influence, although sex was found to affect personal hygiene practices. This supported the idea that targeted training and age-specific approaches could enhance compliance with food safety protocols.

Further analysis identified significant differences in practices based on sex, age, and training attendance. Training played a crucial role in improving practices in food preparation, storage, and serving, while age differences influenced preparation practices. These findings underscored the importance of continuous, tailored training programs—such as gender-sensitive hygiene training and age-specific modules—to meet the diverse needs of food handlers.

While overall compliance was high, several specific areas required improvement, including covering wounds during food preparation, thorough washing of fresh produce, prompt recognition and disposal of spoiled food, and avoiding direct hand contact when serving. The study emphasized that mandatory training, regular monitoring, updated standard operating procedures, and adequate resources such as storage facilities and cleaning equipment were necessary to address these gaps.

The results indicated that sustaining and improving current practices required both institutional commitment and individual responsibility. Implementing an incentive and recognition system could motivate food handlers to maintain high standards. By prioritizing continuous education and reinforcing a strong food safety culture, the university could further protect the well-being of its stakeholders and comply with national food safety regulations.

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