

THE RELATIONSHIP BETWEEN FOOD HANDLERS' HYGIENE PRACTICES AND STUDENTS' SATISFACTION IN A SCHOOL CANTEEN AT HANG TUAH 1 SENIOR HIGH SCHOOL JAKARTA

Ani Noviani^{1*}, Faradisa Nuraini Sutanto²

¹ Department of Nutrition, Health Polytechnic Jakarta II, Indonesia

*E-mail: ani.noviani@poltekkesjkt2.ac.id

Submitted: 28st July 2025; Accepted: 3th September 2025

<http://doi.org/10.36525/sanitas.2025.544>

ABSTRACT

The sanitation of school canteens plays a crucial role in ensuring the safety of food served to students. The level of knowledge and the implementation of food hygiene and sanitation practices by food handlers may affect food quality, which in turn is related to students' satisfaction with canteen food. This study aims to describe the sanitation conditions of the canteen and to analyze the relationship between the food handlers' knowledge and hygiene practices with students' satisfaction with canteen food at Hang Tuah 1 Senior High School Jakarta. This study employed a quantitative cross-sectional design, collecting data from all food handlers and a sample of students at Hang Tuah 1 Senior High School Jakarta. Sanitation assessments were conducted using observation checklists, while food handlers' knowledge and hygiene practices were measured through structured questionnaires and observations. Student satisfaction was assessed using a validated satisfaction questionnaire. Data were analyzed using Chi-square tests and logistic regression to determine associations and predictors. The Chi-square test showed no significant association between the food handlers' level of knowledge and their hygiene practices ($p=0.464$). Additionally, there was no significant association between the food handlers' hygiene practices and students' satisfaction with canteen food ($p=0.073$). Improvements in hygiene practices and canteen facilities are more urgently needed than knowledge enhancement among food handlers to increase student satisfaction with canteen food. Strengthening monitoring, facilities, and food handlers' compliance with hygiene standards should be prioritized in the school canteen management system.

Keywords: *School canteen sanitation, Food handlers' Hygiene practices, Student satisfaction*

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non-Commercial-Share Alike 4.0 license, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.
©2025 Sanitas

INTRODUCTION

Food hygiene and sanitation remain significant public health challenges in Indonesia, with the country ranked as the third with the poorest hygiene and sanitation globally (1). Poor hygiene and sanitation practices increase the risk of food contamination by pathogenic microorganisms, including viruses, bacteria, and parasites, leading to gastrointestinal infections such as diarrhea, vomiting, and abdominal pain, which can escalate into foodborne poisoning if left unaddressed (2,3).

Data from the Indonesian Ministry of Health indicate that there were 163 reported foodborne outbreak incidents in 2017, followed by 122 cases in 2018 and 133 cases in 2019. These outbreaks were predominantly linked to the consumption of ready-to-eat processed foods. Investigations revealed that inadequate hygiene and sanitation practices during food processing were among the contributing risk factors for these foodborne outbreaks (4). This situation indicates that school canteens serve as critical control points in providing safe and quality food for students (5, 6). School canteens play a strategic role in fulfilling students' dietary needs during school hours, particularly for those who do not bring meals from home during extended learning periods. However, poorly managed canteen environments can serve as potential sources of foodborne disease transmission, adversely impacting students' health and learning activities (2,4,7).

Monitoring food quality in school canteens requires attention not only to nutritional adequacy but also to hygiene and food safety standards (2,4). Food safety in schools is closely linked to overall sanitation conditions, including facility cleanliness, access to clean water, and effective waste management. Inadequate sanitation creates an environment that fosters food contamination, making it a critical issue that requires serious attention from school management to protect students' health and ensure food safety (6,7,9).

Food handlers play a critical role in ensuring the safety of food consumed by students (2,4); however, knowledge alone is insufficient without the consistent application of hygienic practices. A study by Frikunnisa (2024) found a significant association between food handlers' knowledge and their personal hygiene practices in elementary school

canteens (8). Other studies have also indicated that although food handlers may possess adequate knowledge regarding hygiene and sanitation, this does not always translate into consistent hygienic behavior in daily practices (2,10,11).

The quality and safety of food served in school canteens are also associated with student satisfaction as primary consumers. Students are more likely to feel comfortable and confident consuming food from canteens that maintain high standards of cleanliness and hygiene (4,6). Ensuring food quality requires the commitment of both food handlers and school canteen management. The implementation of good hygiene practices by food handlers, coupled with consistent monitoring and supervision by canteen management, is essential to maintaining food safety and meeting hygiene standards (2,10). Research has shown that student satisfaction with canteen food is significantly influenced by the sanitation quality of the canteen and the hygiene practices of food handlers, with students showing a preference for consuming food from canteens that are clean and well-managed (5,7). Therefore, continuous efforts to improve hygiene practices among food handlers, supported by effective management oversight, are crucial in ensuring the provision of safe and high-quality food that meets students' expectations within the school environment (2,6).

The canteen at SMA Hang Tuah 1 Jakarta, located in South Jakarta, serves as the primary facility for providing food and snacks to students during the first and second breaks. Students are not permitted to purchase food from outside vendors during school hours. Observations conducted at this canteen revealed several hygiene and sanitation issues that require attention. In several food stalls, food handlers were found not wearing complete personal protective equipment (PPE) during food preparation and serving processes, which may increase the risk of contamination. Additionally, a staff member reported that both the overall cleanliness of the canteen and the hygiene practices of food handlers still need improvement, particularly during food handling and preparation activities. In response to these issues, this study aims to assess the knowledge levels of food handlers, their hygiene practices, and the relationship of these factors with student satisfaction regarding the food provided at the SMA Hang Tuah 1 Jakarta canteen.

MATERIAL & METHODS

This cross-sectional study was conducted in Hang Tuah 1 high school located at Ciledug Raya street, Kebayoran Lama, South Jakarta, Indonesia from April to Mei 2025. The population included all food handlers and students of Hang Tuah 1 high school at year XI, who aged 15-17 years old. Thirty food handlers and seventy five students participated in this study which determined using simple random sampling. Criteria of research subject were food handlers who actively engaged in food preparation, food production and food serving and students with ability to communicate effectively during the data collection process. To collect data of food handlers' knowledge and students' satisfaction, subjects were interviewed using questionnaire adapted from the Indonesian Ministry of Health Guidelines on School Canteen Hygiene and Sanitation (2020), while food handlers' hygiene practises data were carried out through observation. Chi-square test were performed to analyse the association of knowledge and hygiene practises of food handlers' and students' satisfaction using statistical software of SPSS. Univariate analysis was used to analyzed data of students and food handlers' characteristic including sex, education and length of worked. Ethical clearance of this study was obtained from The Health Research Ethics Commission of the Jakarta Health Polytechnic II (KEPK-PKJ II) with approval number DP.04.03/I/KE/31/124/2025.

RESULT & DISCUSSION

Table 1 showed basic characteristic of food handlers who participated in this study, and the majority of them (56,7%) were female, who have length of service in mid-level (76,7%), primary education level (63,4%), good hygiene practises (66,&%) food handlers knowledge were same each poor and good level (50%), while students characteristics with majority (51,3%) female and satisfaction level were satisfied.

As can be seen from Table 2, most of food handlers with a high level of hygiene and sanitation knowledge (66,7%) were demonstrated poor personal hygiene practises. Statistical analysis showed a p-value of 0.464 ($p > 0.05$), indicating no statistically significant association between knowledge level and food handlers' hygiene practices.

Table 1. Characteristics of Food handlers and Students

Characteristic	Study participants	
	Number	Percentage (%)
Food Handlers		
Sex		
Male	13	43,3
Female	17	56,7
Length of Service		
Junior	7	23,3
Mid-level	23	76,7
Education level		
Primary	19	63,4
Secondary	11	36,7
Knowledge level		
Poor	15	50,0
Good	15	50,0
Hygiene practises		
Poor	10	33,3
Good	20	66,7
Students		
Sex		
Male	36	47,4
Female	39	51,3
Satisfaction level		
Not satisfied	26	34,7
Satisfied	49	65,3

This finding suggests that food handlers' knowledge alone has not been translated into the implementation of good hygiene practices in daily activities. Several other factors may have a greater influence on hygiene practices, such as established work habits, workplace culture, time constraints, unsupportive environments, as well as lack of supervision and work motivation. For example, during busy periods with many customers, food handlers may neglect hygiene practices despite understanding their importance. Additionally, a lack of awareness may also hinder the application of good hygiene behaviors, even among those with sufficient knowledge.

This study was in line with the study conducted by Saputra (2023), which reported no significant relationship between knowledge and attitudes of food handlers and the implementation of hygiene practices among food handlers in Minang Street Food in Bangkinang City, Riau (12). Similarly, Baringbing, Rini, and Putri (2022) emphasized that poor hygiene behavior among food handlers, caused by insufficient knowledge and improper habits, can adversely affect food quality (13).

Table 2. Knowledge Level and Food handlers' Hygiene Practises

Knowledge Level	Food Handlers' Hygiene Practises						P value
	Poor		Good		Total		
	n	%	n	%	n	%	
Poor	8	53,3	7	46,7	15	100	0,464
Good	10	66,7	5	33,3	15	100	
	18	60,0	12	40,0	30	100	

A high level of knowledge regarding food sanitation is expected to encourage appropriate behavior during food handling processes. Conversely, low knowledge may result an inappropriate hygiene practice, ultimately reducing consumer trust in canteen services. This aligns with the findings of Lestari and Aprianti (2019), who reported a clear link between food handlers' knowledge, attitudes, and personal hygiene practices. Good knowledge fosters positive attitudes, which in turn motivate proper hygiene behavior (14).

Table 3. Food handlers' Hygiene Practises and Students Satisfaction Level

Food Handlers' Hygiene Practises	Satisfaction Level						P value
	Not Satisfied		Satisfied		Total		
	n	%	n	%	n	%	
Poor	12	66,7	6	33,3	18	100	0,073
Good	4	33,3	8	66,7	12	100	
	16	53.3	14	46.7	30	100	

Based on the data analysis, the majority of student respondents reported dissatisfaction with food served by food handlers who demonstrated poor hygiene practices (66,7%). Conversely, most of students expressed satisfaction with food provided by food handlers categorized as having good hygiene practices. However, the Chi-Square test

yielded a significance value of 0.073 ($p > 0.05$), indicating that there is no statistically significant association between food handler hygiene practices and student satisfaction.

Although the statistical test does not show a significant relationship, the practical implications of the findings remain relevant. These results are consistent with a study by Suryanegara (2022), which found that hygiene and sanitation practices influenced consumer satisfaction among street food vendors (angkringan) in Karawang Regency (15). Similarly, a study by Pajomayo (2024) demonstrated a significant relationship between hygiene practices and customer satisfaction in ready-to-eat food services (16).

Most students at SMA Hang Tuah 1 Jakarta reported satisfaction with food services at the school canteen. This satisfaction was not only from hygiene aspects but also from other factors, such as friendly and fast service, affordable food prices, and acceptable taste. However, several students expressed dissatisfaction, particularly with cleanliness issues—for example, food not being properly covered, increasing the risk of contamination, and food remnants scattered on tables or display counters. These conditions often occurred due to the rushed nature of service during break times, when a large number of students were being served.

In general, food handlers at the school canteen demonstrated an understanding of hygiene and sanitation principles. Nevertheless, the implementation of these principles was often suboptimal. Contributing factors included time constraints, high service demand, and entrenched work habits that did not prioritize hygiene. Furthermore, the location of the canteen at the edge of the school compound resulted in poor air circulation in several food stalls, creating discomfort for food handlers. As a result, some were reluctant to wear personal protective equipment (PPE), such as masks and head coverings, during food preparation and service.

This situation is further exacerbated by the lack of regular supervision from the school administration regarding compliance with established hygiene and sanitation standard operating procedures (SOPs). The health belief model provides a relevant theoretical framework, suggesting that perceived barriers—such as discomfort while working—can reduce an individual's motivation to perform preventive health behaviors,

including proper hygiene practices (17). In this context, food handlers with good knowledge but lacking strong internal motivation or facing environmental barriers may fail to apply hygiene standards consistently. As such, behavior is not solely influenced by knowledge, but also by workplace culture, environmental support, and perceived benefits versus costs (18).

Although no statistically significant relationship was found between food handlers' hygiene practices and student satisfaction, descriptive results showed that better hygiene was associated with higher student satisfaction. This indicates that improving hygiene, may enhance students' perceptions of food safety, and trust in the canteen.

CONCLUSION

Consumer satisfaction serves as a key indicator of food safety within the school environment. Therefore, to enhance hygiene and sanitation at SMA Hang Tuah 1 Jakarta, it is recommended to implement regular training for food handlers collaborate with local health authorities and academic institutions, as well as consistent monitoring and supervision. Adequate facilities and ongoing coaching can further ensure compliance with hygiene standards and improve overall satisfaction in the school canteen.

REFERENCE

1. WHO, UNICEF. Progress on Drinking Water, Sanitation and Hygiene. Denmark; 2017.
2. Astari, S., Syah, D., Mahadewi, N. Higiene dan Sanitasi Kantin Sekolah serta Hubungannya dengan Keamanan Pangan Jajanan Anak Sekolah Dasar di Kota Denpasar. *Jurnal Gizi dan Pangan*. 2020;15(3):179–188.
3. Ningsih, R.S., Putri, S.R., Handayani, D.P. Pengetahuan dan Praktik Higiene Sanitasi Penjamah Makanan di Sekolah Dasar di Jakarta Selatan. *Jurnal Kesehatan Lingkungan Indonesia*, 2024;23(2):110–118.
4. Kementerian Kesehatan Republik Indonesia. Pedoman Hygiene Sanitasi Kantin Sekolah. Jakarta: Direktorat Kesehatan Lingkungan, Direktorat Jenderal Kesehatan Masyarakat; 2020.
5. Damayanti, R., Hapsari, R., Sari, N.P. 2020. Higiene Sanitasi Pengelolaan Makanan dan Kejadian Diare pada Siswa Sekolah Dasar. *Jurnal Kesehatan Masyarakat Andalas*. 2020;14(1):34–42.

6. FAO/WHO. Sustainable Healthy Diets-Guiding Principles. Rome: Food and Agriculture Organization of the United Nations and World Health Organization; 2019.
7. WHO. WHO Estimates of the Global Burden of Foodborne Diseases: Foodborne Disease Burden Epidemiology Reference Group 2007–2015. Geneva: World Health Organization; 2015.
8. Frikunnisa, F. Hubungan Pengetahuan dengan Praktik Higiene Penjamah Makanan di Kantin Sekolah Dasar. *Jurnal Gizi dan Kesehatan Indonesia*. 2024;19(2), 101–109.
9. Azizah, A.N., Oktanova, M.A. Higiene dan Sanitasi Kantin Sekolah Dasar. *Jurnal Kesehatan Lingkungan*. 2018;15(2):615–622.
10. Clayton, D.A., Griffith, C.J., Price, P., & Peters, A.C. Food Handlers' Beliefs and Self-Reported Practices. *International Journal of Environmental Health Research*. 2002;12(1):25–39.
11. Seaman, P., & Eves, A. (2006). The Management of Food Safety—The Role of Food Hygiene Training in the UK Service Sector. *International Journal of Hospitality Management*. 2006;25(2):278–296.
12. Saputra, A. Hubungan Tingkat Pengetahuan dan Sikap Penjamah Makanan dengan Penerapan Hygiene Sanitasi Makanan pada Ampera di Bangkinang Kota. *Jurnal Ilmiah Ilmu Kesehatan*. 2023;2 (1):405–415.
13. Baringbing, I.J, Rini, W.N.E, Putri, F.E. Faktor-faktor yang Berhubungan dengan Perilaku Higiene Penjamah Makanan pada Pangan Industri Rumah Tangga di Kecamatan Geragai Tahun 2022. *Jurnal Kesmas Jambi*. 2023;7(1):31–40.
14. Lestari, W. Aprianti. Hubungan Body Image, Tingkat Pengetahuan dan Sikap terhadap Praktik Personal Hygiene Tenaga Penjamah Makanan. *Jurnal Riset Pangan dan Gizi*. 2019;2(1):37–47.
15. Suryanegara, R. Penerapan Higiene Sanitasi dengan Kepuasan Konsumen Pedagang Angkringan di Kabupaten Karawang. *Jurnal Ilmu Gizi dan Pangan Indonesia*. 2022;5(3),113–120.
16. Pajomayo, S.N.S., Tamos, C.F., Lobis, F.B. The Impact of Street Food Handling on Customer Satisfaction. *The Research Probe*. 2023;4(1):93–100.
17. Rosenstock, I.M., Strecher, V.J., Becker, M.H. Social Learning Theory and the Health Belief Model. *Health Education Quarterly*, 1988;15(2):175–183.
18. Glanz, K., Rimer, B.K., Viswanath, K. *Health Behavior and Health Education: Theory, Research, and Practice* 4th ed. San Francisco: Jossey-Bass; 2008. p. 24-40.