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MORALITY BEFORE KNOWLEDGE

Analysis of the relationship between attitudes, training, and perceptions of food handlers on supervision and the implementation of personal hygiene among food handlers

Vina Rahmalia[1*]
[1] *Public health, Faculty of Public Health, Andalas University, Padang, West Sumatera 25163, Indonesia.*
*Correspondence: vinarahmalia06@gmail.com

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ABSTRACT

Background: Poor personal hygiene can affect the cleanliness of food provided to patients. A preliminary study conducted at XX Hospital Nutrition Installation found that five food handlers failed to use complete personal protective equipment (PPE), and two food handlers engaged in conversation while preparing food. This research aims to identify factors influencing the implementation of personal hygiene among food handlers at XX Hospital Nutrition Installation. **Method:** This quantitative study employed a cross-sectional design from November 2019 to March 2020. The sample included 43 food handlers selected through total sampling. Data analysis utilized SPSS and Chi-square tests. **Results:** The study indicated that 48.8% of food handlers exhibited inadequate personal hygiene, 41.9% had limited knowledge, 53.5% demonstrated negative attitudes, 60.5% did not receive training, and 51.2% perceived inadequate supervision from their superiors. Significant correlations were observed between knowledge (p=0.004), attitude (p=0.000), training (p=0.000), and perception of supervision (p=0.004) with the implementation of personal hygiene. **Conclusion**: Attitude, training, and perception of supervision significantly influence the adherence to personal hygiene among food handlers at XX Hospital 's Nutrition Installation. It is recommended that the Nutrition Installation enhance supervision of food handlers' personal hygiene and conduct certified training programs on food hygiene and sanitation. **Novelty/Originality**: This study provides new insights into the relationship between knowledge, attitudes, training, and perceptions of supervision with implementing personal hygiene in the context of hospital food handlers. The findings suggest that although multiple factors influence individual hygiene, a better training and supervision-based approach can significantly improve compliance with hygiene practices, which is an essential contribution to managing food quality in the hospital environment.

KEYWORDS: food handlers; hygiene supervision ; hygiene training; nutrition installation; personal hygiene.

1. Introduction

Based on H.L. Blum's theory, the degree of health is influenced by four factors: environmental factors (40%), behavioral factors (30%), healthcare services (20%), and genetic factors (10%). Health behavior is a response (organism) to stimuli or objects related to illness and disease, the healthcare system, food and drink, and the environment (Notoatmodjo, 2010). According to Law No. 36 of 2009, to achieve optimal health for the community, national development in the health sector must be implemented. Hospitals are public places that provide health services to the community, with core activities in medical

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services conducted through a promotive, preventive, curative, and rehabilitative approach. To support medical services for patients, hospitals require proper food processing that meets hygiene and sanitation standards (Razi & Ariani, 2010).

The hospital nutrition installation manages health services for both inpatients and outpatients, including nutritional care, food service, and research/development activities (Widyawati, 2017). Hospital food service involves activities from menu planning to food distribution to patients, including recording, reporting, and evaluation, to achieve optimal health status through appropriate diet provision. Hygienic and healthy food service is fundamental because it serves patients who are vulnerable to pathogenic microorganisms (Osman et al., 2021). Food handlers' hygiene, known as personal hygiene, involves maintaining cleanliness in food handling to ensure safe and healthy food (Moghnia, 2021). Several practices must be adhered to by food handlers, such as handwashing with soap followed by rinsing as needed, wearing clean clothes, and using clean work attire or aprons without patterns to make contamination visible (Ernawati et al., 2021). Food handlers should wear clean, closed shoes and head coverings to prevent hair from falling into the food. Food handlers who are sick with flu, fever, or diarrhea should not be involved in food processing until symptoms disappear. Food handlers with body wounds must cover them with waterproof protection. Personal hygiene among food handlers can be achieved if they understand the importance of maintaining personal health and cleanliness (Moghnia et al., 2021).

In the environmental health paradigm, contamination of food and beverages can make them disease vectors. According to the World Health Organization (WHO), foodborne diseases are illnesses or poisonings caused by microbes or agents entering the body through consumed food (Gatti et al., 2009; Thompson & Darwish, 2019; Robert et a., 2017). In 2019, a food poisoning case in a UK hospital resulted in 6 deaths due to bacterial infection from contaminated hospital food (Notoatmodjo, 2010). In Indonesia, in 2017, 5,293 people were exposed to food poisoning outbreaks, with 2,041 illnesses (an attack rate of 38.56%) and 3 deaths (a case fatality rate of 0.15%). The highest food poisoning outbreaks in 2017 occurred in Bali Province, with 12 incidents. The agents causing food poisoning outbreaks in 2017 were microbiological (45.28%), chemical (5.66%), and unknown causes. Food poisoning in hospital nutrition installations can originate from clean water used, eating utensils, food sources, food processing methods, and the behavior of food handlers and distributors (Notoatmodjo, 2010). Several factors can affect the implementation of personal hygiene among food handlers in nutrition installations, including behavioral factors and non-behavioral factors. Behavioral factors affecting personal hygiene among food handlers include knowledge, attitudes, hygiene training, and perceptions of supervision (Tessema et al., 2014; Abdi et al., 2020).

Knowledge is the result of knowing, and it occurs after a person senses an object. Attitude is a closed response to stimuli or objects (Notoatmodjo, 2010). Personal hygiene training is a learning process, affecting cognitive, affective, and behavioral dimensions (McLay et al., 2021; Singh et al., 2021). Food handlers' perception of supervision is their view of the supervisory activities conducted by management. Personal hygiene checks were not routinely performed, and training was ineffective in improving food handlers' knowledge, with many exhibiting poor behavior during handling (Putri & Susanna, 2021). Research by Firsta (2018) found that 50% of food handlers had poor attitudes, and 62.5% of food handlers exhibited poor personal hygiene practices.

XX Hospital is a type B hospital under the government of West Sumatra. XX Hospital has made various efforts to support patient care, including nutritional services, which are as important as medical or other health services. XX Hospital nutritional services include food processing, serving, and distributing food to patients. The workforce at the Nutrition Installation of XX Hospital consists of 61 people: 14 nutritionists, 43 food handlers, and 4 warehouse staff. The food handlers include 21 food processors and 22 food distributors, serving over 150 patients daily. A preliminary study conducted in November 2019 through interviews and observations revealed that food handlers did not properly implement personal hygiene. Five food handlers did not use complete PPE, and two were seen talking

while processing food. According to the head of the nutrition installation at XX Hospital, no hygiene sanitation training for food handlers or routine health checks had been conducted in the past year.

2. Methods

This research is a survey study with an analytical nature using a cross-sectional design, which is an instantaneous approach and is not followed over a specific period, to determine the factors related to the implementation of personal hygiene among food handlers in the Nutrition Installation of XX Hospital in 2020. The population in this study consists of all food handlers in the Nutrition Installation of XX Hospital in 2020, totaling 43 people. The sample in this study uses the entire population, which includes all food handlers in the Nutrition Installation of XX Hospital in 2020, totaling 43 people.

The sample size is necessary to ensure that the conclusions drawn from the research have the desired level of confidence. In this study, the minimum sample size was determined using the Stanley Lemeshow formula with a 95% confidence level. To anticipate dropouts, a reserve sample of 10% of the sample size, which is 3 people, was prepared. Therefore, the minimum sample size required for this study at $\alpha = 0.05$ and 95% CI is 43 people.

The sampling technique used in this study is total sampling. Total sampling is a technique where the number of samples equals the population. The reason for using total sampling is due to the small population size, which is less than 100. The data processing techniques in this study involve several stages, namely editing, coding, data entry, and data cleaning. Meanwhile, the data analysis techniques used are two types: univariate analysis and bivariate analysis.

3. Results and Discussion

3.1 Univariate analysis

Based on the results of the questionnaire, the distribution of attitudes among food handlers in the Nutrition Installation of XX Hospital in 2020 can be described as shown in Table 1 shows that 37.2% of respondents agree that food handlers should bathe at least once a day, 20.9% of respondents agree that food handlers can wear rings while handling food, and 14% of respondents state that food handlers can eat, drink, chat, and smoke in the workplace.

Table 1. Description of the Frequency Distribution of Attitudes Among Food Handlers in the Nutrition Installation at XX Hospital

No	Statement	Answer			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	The health examination for food handlers in the Nutrition Installation is conducted periodically as a certification of personal health and freedom from disease, within the optimal time interval. (+)	21 (48,8%)	20 (46,5%)	2 (4,7%)	0 (0%)
2.	Food handlers wear work clothes when handling food. (+)	15 (34,9%)	28 (65,1%)	0 (0%)	0 (0%)
3.	Food handlers should not eat, drink, converse, or smoke in the workplace (-).	0 (0%)	6 (14%)	26 (60,5%)	11 (25,6%)
4.	The handler uses a mask and gloves when handling food, according to the type of food to be cooked (+).	10 (23,3%)	32 (74,4%)	1 (2,3%)	0 (0%)
5.	The handler washes their hands before/after work (+).	10 (23,3%)	32 (74,4%)	1 (2,3%)	0 (0%)

6.	Handlers must bathe at least once a day (-).	0 (0%)	16 (37,2%)	25 (58,1%)	2 (4,7%)
7.	Food handlers regularly wash their hair with shampoo or soap at specific times.(+)	9 (20,9%)	30 (69,8%)	4 (9,3%)	0 (0%)
8.	The handler has long, dirty, and unclean nails when handling food (-).	0 (0%)	1 (2,3%)	33 (76,7%)	9 (20,9%)
9.	Food handlers use rings while handling food. (-)	0 (0%)	9 (20,9%)	28 (65,1%)	6 (14%)
11.	Food that has finished cooking is placed in containers according to their type of cooking and covered.(+)	19 (44,2%)	23 (53,5%)	1 (2,3%)	0 (0%)
12.	Food handlers use water that is colored, flavored, scented, and turbid (-).	0 (0%)	0 (0%)	13 (30,2%)	30 (69,8%)
13.	Cleaning of equipment is performed by soaking, scrubbing with detergent, rinsing with clean water until clean, disinfecting, and drying (+)	15 (34,9%)	26 (60,5%)	2 (4,7%)	0 (0%)
14.	Work attire is thoroughly washed and neatly ironed (+)	14 (32,6%)	28 (65,1%)	1 (2,3%)	0 (0%)
15.	Separate areas for handwashing, food materials, and equipment (+)	15 (34,9%)	26 (60,5%)	1 (2,3%)	1 (2,3%)

Based on Table 2, out of the 43 respondents surveyed, it is evident that the majority of food handlers in the Nutrition Installation of XX Hospital have never participated in personal hygiene training (60.5%). Based on Table 3, out of 43 respondents surveyed, it is found that more than half of the food handlers in the Nutrition Installation of XX Hospital have a poor perception of supervision by their superiors (51.2%).

Table 2. Frequency Distribution of Personal Hygiene Training adn Supervision Perception among Food Handlers in the Nutrition Installation of XX Hospital

Training	Frequency (f)	Percentage (%)
Never	26	60,5
Ever	17	39,5
Total	43	100
Supervisory Perception	Frequency (f)	Percentage (%)
Poor	22	51,2
Good	21	48,8
Total	43	100

The distribution of supervision perception among food handlers in the Nutrition Installation of XX Hospital in 2020 can be detailed in Table 3. Based on Table 3, it is known that 14% of respondents believe that supervisors do not need to inspect the food handlers' workspace every day during working hours, 9.3% of respondents think that supervisors do not need to conduct direct observations on-site before food preparation activities are carried out, and 7% of respondents feel that supervision from supervisors does not increase the motivation of food handlers to implement personal hygiene while working.

Table 3. Description of Frequency Distribution of Supervision Perception among Food Handlers at the Nutrition Installation of XX Hospital

No	Question	Answer			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	The leader must conduct on-site inspection (direct supervision) of food handlers.	14 (32,6%)	27 (62,8%)	2 (4,7%)	0 (0%)
2.	The leader must inspect the food handler's workspace daily during working hours.	23 (53,5%)	14 (32,6%)	6 (14%)	0 (0%)

3.	The leader must conduct on-site observations before food preparation activities commence.	21 (48,8%)	18 (41,9%)	4 (9,3%)	0 (0%)
4.	The leader must supervise by correcting any mistakes in the work.	24 (55,8%)	17 (39,5%)	2 (4,7%)	0 (0%)
5.	The leader must impose strict sanctions for violations committed by food handlers.	23 (53,5%)	20 (46,5%)	0 (0%)	0 (0%)
6.	Supervision from leaders can enhance food handlers' motivation in implementing personal hygiene while working.	20 (46,5%)	20 (46,5%)	3 (7%)	0 (0%)
7.	The leader mandates that food handlers undergo health examinations by qualified doctors at least once every year.	16 (37,2%)	27 (62,8%)	0 (0%)	0 (0%)

3.1.2 Bivariate analysis

Based on statistical tests on the data collected in the field, a relationship was found between the level of knowledge and the implementation of personal hygiene among food handlers. Based on Table 4, it is shown that respondents with poor personal hygiene are higher among those with a low level of knowledge (77.8%) compared to those with a high level of knowledge (28%). The statistical test results show a p-value of 0,004 (p-value < 0.05). This indicates a significant relationship between the level of knowledge and the implementation of personal hygiene among food handlers at the Nutrition Installation of XX Hospital.

Table 4. Relationship between Knowledge Level and Implementation of Personal Hygiene Among Food Handlers at the Nutrition Installation of XX Hospital

Level of Knowledge	Personal Hygiene				Total		P Value
	Fair		Good				
	f	%	f	%	f	%	
Low	14	77,8	4	22,2	18	100	
High	7	28	18	72	25	100	0,004
Total	21	48,8	22	51,2	43	100	

In Table 5, it is shown that respondents with poor personal hygiene are higher among those with a negative attitude (82.6%) compared to those with a positive attitude (10%). The statistical test resulted in a p-value of 0.000 (p-value < 0.05), indicating a significant relationship between attitude variables and the implementation of personal hygiene among food handlers at the Nutrition Installation of XX Hospital.

Table 5. Relationship Between Attitude and Implementation of Personal Hygiene by Food Handlers in the Nutrition Installation of XX Hospital

Attitude	Personal Hygiene				Total		P Value
	Fair		Good				
	f	%	f	%	f	%	
Negative	19	82,6	4	17,4	23	100	0,000
Positive	2	10	18	90	20	100	
Total	21	48,8	22	51,2	43	100	

Based on statistical tests conducted on the collected field data, the relationship between hygiene training and the implementation of personal hygiene among food handlers is detailed in the following Table 6. Table 6 shows that respondents with poor personal hygiene are higher among those who have never undergone hygiene training (76.9%) compared to those who have undergone hygiene training (5.9%). The statistical test resulted in a p-value of 0.000 (p-value < 0.05), indicating a relationship between hygiene

training and the implementation of personal hygiene among food handlers at the Nutrition Installation of XX Hospital.

Table 6. Relationship between Hygiene Training and Implementation of Personal Hygiene among Food Handlers in the Nutrition Installation of XX Hospital

Training	Personal Hygiene				Total		P Value
	Fair		Good				
	f	%	f	%	f	%	
Never	19	82,6	4	17,4	26	100	0,000
Ever	2	10	18	90	17	100	
Total	21	48,8	22	51,2	43	100	

Meanwhile, based on Table 8, it shows that respondents with poor personal hygiene are higher among those who have a negative perception of supervision (72.7%) compared to those who have a positive perception of supervision (23.8%). The statistical test resulted in a p-value of 0.004 (p-value < 0.05). This indicates a significant relationship between the perception of supervision variables and the implementation of personal hygiene among food handlers at the Nutrition Installation of XX Hospital.

Table 8 Relationship between Supervision Perception and Implementation of Personal Hygiene by Food Handlers in the Nutrition Installation of XX Hospital

Perception of Supervision	Personal Hygiene				Total		P Value
	Fair		Good				
	f	%	f	%	f	%	
Poor	16	72,7	6	27,3	22	100	0,004
Good	5	23,8	16	76,2	21	100	
Total	21	48,8	22	51,2	43	100	

3.2 Discussion

3.2.1 Attitude

The results of the study indicate that more than half of the respondents (53.5%) have a negative attitude towards personal hygiene. The negative attitude of food handlers can be influenced by factors such as the length of time they have worked in food processing, low internal awareness of the importance of good personal hygiene, and the fact that not all handlers have participated in certified food hygiene and sanitation training. This study's findings align with research conducted at RS Islam Siti Aisyah Madiun, where it was found that more than half of the respondents (76.5%) had a poor attitude towards implementing personal hygiene (Widyawati, 2017). However, these results contrast with research at RSUDAM in Lampung Province, which found that more than half of the respondents (57.1%) had a positive attitude towards personal hygiene practices. In a previous study, respondents strongly agreed with wearing work clothes, including aprons and head coverings, washing hands before and after work with soap, handling food with tools or gloves, and regularly undergoing health check-ups (Indriyani et al., 2018).

Additionally, 20.9% of respondents agreed that food handlers could wear rings while handling food. Interviews revealed that respondents were often reluctant to remove jewelry when preparing food. Jewelry can harbor dirt from dust, sweat, and other contaminants. Moreover, hands adorned with jewelry are harder to clean thoroughly, as the crevices of the jewelry and the covered skin surface may not be properly sanitized. This can lead to food contamination, posing a risk to patients. According to Newcomb in Notoatmodjo (2010), attitude is a willingness or willingness to act and does not necessarily result in the execution of a specific motive. Attitudes function as a predisposition to behavior (closed reaction) rather than as an overt action (open reaction) or activity (Notoatmodjo, 2010).

From the research findings, it can be concluded that more than half of the food handlers have a negative attitude towards personal hygiene. This result is inconsistent with previous study, where more than half of the respondents had a positive attitude towards personal hygiene practices. A good attitude among food handlers is correlated with hygienic behavior in food processing, as it is assumed that they have a thorough understanding of food hygiene and sanitation. Furthermore, attitude can be influenced by past experiences and common cultural practices (Indriyani et al., 2018). Therefore, the researchers recommend that the Nutrition Installation of XX Hospital conducts training on food hygiene and sanitation for all food handlers to enhance their knowledge, which, in turn, will affect their attitudes towards their work. Additionally, it is crucial to implement supervision and strict penalties for handlers who violate regulations, such as issuing warnings or reprimand letters. It is hoped that these measures will increase the awareness and commitment of food handlers to maintain hygiene and sanitation while working.

3.2.2 Training

Based on the research findings, more than half of the respondents (60.5%) have never participated in personal hygiene training. This result indicates a lower percentage compared to the study conducted by Tengku (2016) at XX Hospital, where all food handlers at the nutrition installation had undergone personal hygiene training (Mulyani, 2014). Training is essential and mandatory for all employees in a company. Through training, employees' knowledge and skills can significantly improve. Training can be provided before starting work by showing training certificates, or after becoming an employee, organized by the company. It is important to note that all workers involved in handling products must receive training, including mechanics, contractors, and cleaning services (van Assen, 2020; Nielsen & Shepherd, 2022).

According to the research findings, the personal hygiene training attended by food handlers includes handwashing with soap training (CTPS), kitchen hygiene and sanitation training, cough etiquette, and clean and healthy living behavior (PHBS). This aligns with the Regulation of the Minister of Health of the Republic of Indonesia No. 1096/MENKES/PER/VI/2011 regarding food sanitation hygiene, which requires all food handlers in the food service industry to have a food sanitation hygiene certificate, be in good health, and free from communicable diseases (Yuniar et. al., 2023). From this research, it can be concluded that more than half of the food handlers at XX Hospital have never received training. This finding contrasts with the study conducted by Tengku, where all food handlers had undergone training. This difference is due to the fact that XX Hospital has not implemented a food sanitation hygiene training program for food handlers. However, such training could significantly improve food handlers' knowledge and awareness in implementing good personal hygiene practices. Therefore, the researchers recommend that the Nutrition Installation at XX Hospital promptly implement certified food sanitation hygiene training for all food processing personnel. This training could encompass various aspects such as job nutrition training, food hygiene and sanitation training, as well as work procedures and awareness of foodborne illnesses. The implementation of this training is expected to enhance the performance of food handlers at XX Hospital and improve the food safety provided to patients.

3.2.3 Perceptions of Food Handlers' Supervision of Leadership

Based on the research findings, more than half of the respondents (51.2%) perceive poor supervision from their superiors. Additionally, 14% of respondents disagree that supervisors should inspect food handlers' workspaces daily during working hours. Respondents argue that daily inspections would disrupt their focus and productivity. Moreover, 7% of respondents believe that supervision from superiors does not enhance food handlers' motivation to adhere to personal hygiene practices while working. These findings indicate that factors related to the hygiene and sanitation of food handlers at the

Nutrition Installation of the Swadana Kudus Hospital Unit indicate that effective supervision from superiors does not necessarily increase the motivation of food handlers to maintain personal hygiene.

To prevent the transmission of foodborne diseases, effective supervision and guidance of food handlers are essential (Levy et al., 2022). Despite the mandatory requirement for food handlers to maintain cleanliness and health, supervision from superiors is necessary to ensure food handlers are in good health while on duty. Based on the research conducted, it can be concluded that less than half of the food handlers perceive supervision from superiors negatively. This finding is consistent with Ely Agustina's research at RSUD Unit Swadana Kudus. Supervisors should conduct regular supervision of food handlers to ensure adherence to established Standard Operating Procedures (SOPs).

Therefore, it is recommended that the head of the Nutrition Installation at XX Hospital implement daily routine supervision during working hours. Supervision should also include bi-annual internal audits conducted by the hospital and field visits by the health department at least twice a year. Regular supervision by relevant authorities is expected to improve food handlers' perception of supervision and enhance overall compliance with hygiene standards.

3.3.4 Relationship between Attitudes and the Implementation of Personal Hygiene by Food Handlers

The research findings indicate that respondents with poor personal hygiene are higher among those with a negative attitude (82.6%) compared to those with a positive attitude (10%). Statistical analysis conducted on food handlers at the Nutrition Installation of XX Hospital showed a significant relationship between attitude and the implementation of personal hygiene, with a p-value of 0.000 (p-value < 0.05). These findings are consistent with Tengku's study (2016) at the Nutrition Installation of XX Hospital, which found a significant relationship between attitude and the implementation of personal hygiene, with a p-value of 0.000 (p-value < 0.05) (Mulyani, 2014). This is also supported by Widyawati (2017) research at the Nutrition Installation of RS Islam Siti Aisyah Madiun, which identified a significant relationship between attitude and the implementation of personal hygiene, with a p-value of 0.006 (p-value < 0.05). However, the previous study found no significant relationship between attitude and the implementation of personal hygiene, with a p-value of 0.562 (p-value > 0.05) (Indriyani et al., 2018).

The analysis indicates a trend where a positive attitude correlates with good personal hygiene practices among food handlers, whereas a negative attitude tends to lead to poorer implementation of personal hygiene. Attitude plays a crucial role in daily life; once formed, it influences behavior towards various aspects. To foster real change in attitude, supportive conditions such as facilities and encouragement are essential. Positive attitudes prompt individuals to respond positively and engage in beneficial actions, while negative attitudes may hinder such behaviors (Fathonah, 2005). Based on theory and research findings, it can be concluded that there is a significant relationship between food handlers' attitudes and the implementation of personal hygiene. Attitude contributes significantly to one's actions; thus, supervision and skill enhancement are necessary to ensure reliable performance among food handlers. Skill improvement can be achieved through certified training in hygiene and sanitation, continuing education, courses on safe food handling, and participation in seminars related to hygiene and sanitation practices during food preparation.

3.3.5 Relationship between training and the implementation of personal hygiene for food handlers

Respondents with poor personal hygiene are more prevalent among those who have never undergone hygiene training (76.9%) compared to those who have received such

training (5.9%). Statistical analysis conducted on food handlers at the Nutrition Installation of XX Hospital indicates a significant relationship between training and the implementation of personal hygiene, with a p-value of 0.000 (p-value < 0.05).

These results are consistent with Silvia's study (2013) at the Nutrition Installation of RSUD Meuraxa Banda Aceh, which found differences in food handlers' behavior before and after hygiene and sanitation training. Tengku's study (2016) and Mulyani (2014) at the Nutrition Installation of XX Hospital, found no significant relationship between training and the implementation of personal hygiene among food handlers. Training is a crucial effort to enhance the quality of human resources within an organization. Both new and existing employees benefit from training, as job demands can change due to shifts in the work environment, strategies, and other factors (Lee et al., 2020). Training programs should align with organizational goals while also addressing individual employee objectives. Leaders often support training initiatives because they enhance employees' skills and productivity, even though the time invested in training must be considered (Hosen et al., 2023).

Based on theory and research findings, it can be concluded that there is a significant relationship between hygiene training and the implementation of personal hygiene. By providing certified hygiene and sanitation training to food handlers, the behavior of these individuals in implementing personal hygiene can be positively influenced (Insfran-Rivarola et al., 2022). Therefore, the Nutrition Installation of XX Hospital should organize certified hygiene and sanitation training for all food handlers, ensuring comprehensive participation. It is expected that after undergoing such training, the implementation of personal hygiene among food handlers will improve significantly.

3.3.6 The Relationship between Perceptions of Supervision and the Implementation of Individual Hygiene by Food Handlers

Based on the research conducted, respondents with poor personal hygiene are more prevalent among those who have a negative perception of supervision from their superiors (72.7%) compared to those with a positive perception (23.8%). Statistical analysis on food handlers at the Nutrition Installation of XX Hospital shows a significant relationship between perceptions of supervision from superiors and the implementation of personal hygiene among food handlers, with a p-value of 0.004 (p-value < 0.05).

According to interviews and observations with respondents, supervision from superiors is primarily carried out by the head of the nutrition installation. Supervision also includes posting pamphlets on sanitation hygiene within the premises of the XX Hospital nutrition installation. Moreover, SOPs for food processing and serving to patients, along with regulations for food handlers, are prominently displayed in the facility. These findings are contrary to Tengku's study (2016) at the Nutrition Installation of XX Hospital, which found no significant relationship between supervision and the implementation of personal hygiene among food handlers, with a p-value of 0.940 (p-value > 0.05).

Perception involves the process of receiving stimuli through sensory organs and then organizing and interpreting these stimuli to understand and become aware of them (Notoatmodjo, 2010). Supervision, on the other hand, is a systematic effort to establish performance standards, plan goals, design feedback systems, compare actual activities with predetermined standards, measure deviations, and take corrective actions to ensure the most effective and efficient use of company resources in achieving organizational goals (Rahareng, 2021).

Effective supervision isn't limited to post-activity inspections but should be continuous during operations to promptly address any deviations from standards. The goal of supervision is to ensure that planned activities become reality (Sommer et al., 2020). Based on theory and research findings, it can be concluded that there is a significant relationship between perceptions of supervision and the implementation of personal hygiene. Therefore, to improve food handlers' perceptions of supervision, in line with the Indonesian Ministry of Health Regulation No. 78/2013 on hospital nutrition

service guidelines, regular supervision should be conducted by the hospital through biannual internal audits. Additionally, in accordance with Indonesian Ministry of Health Regulation No. 1096/Menkes/PER/VI/2011 on hygiene and sanitation requirements for food services, the city health department should conduct field visits and inspections at least twice a year to assess food handlers' performance, especially in implementing personal hygiene practices.

4. Conclusions

Based on the results of research, testing, and analysis that have been carried out on the factors that influence the implementation of personal hygiene in food handlers at the Nutrition Installation of XX Hospital in 2020, it can be concluded that there is a relationship between attitudes and the implementation of personal hygiene in food handlers at the institution. In addition, there is also a relationship between training and the implementation of personal hygiene in food handlers. Finally, there is a relationship between the perception of superior supervision and the implementation of personal hygiene in food handlers at the Nutrition Installation of XX Hospital . The implication of this finding is the need to develop a more comprehensive training program that focuses on improving the attitudes and skills of food handlers. The training program should include material relevant to personal hygiene as well as effective teaching techniques to ensure that food handlers understand and implement proper hygiene practices. To ensure consistent implementation of personal hygiene, supervision by superiors needs to be strengthened. This can be done by increasing the frequency and quality of supervision and providing constructive and motivating feedback to food handlers. Recognizing the importance of a positive attitude towards personal hygiene can influence the implementation of overall hygiene practices. Therefore, efforts need to be made to improve the awareness and attitudes of food handlers through internal campaigns and activities that encourage concern for personal hygiene. Finally, existing policies in the Nutrition Installation need to be evaluated and adjusted based on the findings of this study. For example, policies regarding training and supervision can be adjusted to increase effectiveness and support better implementation of personal hygiene. By implementing these recommendations, there is expected to be an increase in the implementation of personal hygiene in the Nutrition Installation of XX Hospital , which will ultimately contribute to improving food quality and overall public health.

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Biographies of Author

Vina Rahmalia, Public health, Faculty of Public Health, Andalas University, Padang, West Sumatra, Indonesia.

- Email: vinarahmalia06@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A