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Descriptive Study: Knowledge, Attitudes, and Hygiene Sanitation Behavior of Food Handlers in Stalls Around the Health Polytechnic of the Ministry of Health Surabaya

Alisa Oriana[1], Mujayanto[2*], Taufiqurrahman[3], Ani Intiyati[4]
[1,2,3,4]Department of Nutrition, Politeknik Kesehatan Kemenkes Surabaya, Surabaya, Indonesia
*Email Corespondence: ikydho@gmail.com

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ABSTRACT

Food handlers play an sssessential role in maintaining food safety and quality through the application of sanitary hygiene principles. Preliminary research showed that sanitary hygiene practices among food handlers in stalls surrounding the Health Polytechnic of the Ministry of Health Surabaya remain relatively low. This study aims to describe the knowledge, attitudes, and behaviors of food handlers regarding sanitary hygiene. A descriptive quantitative design was employed involving 20 respondents. Data were collected through questionnaires and observations, then analyzed univariately. Results showed that the majority of food handlers had moderate knowledge (50%), moderate attitudes (45%), and good behavior (65%). Factors such as age, education, and years of service were found to influence these aspects. In conclusion, most food handlers had moderate levels of knowledge and attitudes, with good hygiene behavior. Continuous education is needed to improve their understanding and practices.

INTRODUCTION

Nutrition services in institutions cover various sectors such as hospitals, schools, Islamic boarding schools, and workplaces. These services involve activities ranging from menu planning to food distribution, with the aim of meeting consumers' nutritional needs through proper food management[1-3]. There are four types of food service systems based on their characteristics and production processes: Conventional, Commissary, Ready-to-serve, and Assembly-serve. Examples of their application are in school canteens, restaurants, and cafeterias[4]. Food hygiene and sanitation are preventive measures against food contamination that can originate from raw materials, workers, tools, and the environment. The goal is to ensure that food is safe for consumption[5-7]. Food Handlers are individuals who interact directly with food from the preparation stage to the serving stage. Although they generally have a culinary education background, not all of them can guarantee that the food served meets nutritional and food safety standards[8-9].

According to WHO (2023), approximately 600 million cases of illness and 420,000 deaths occur each year due to unsafe food consumption.According to FAO and WHO (2020), show that only about 30–50% of food handlers have adequate knowledge of food safety and sanitation hygiene. According to SPIMKer data analysis from BPOM, in 2023 there were 6,402 reported cases of drug and food poisoning. After validation, 1,722 cases were confirmed as food poisoning, including 1,110 cases

related to food. In 2023, East Java and West Java provinces were among the top five provinces with the highest number of poisoning cases.

The data The data highlights the significant public health risks in Indonesia due to poor sanitation hygiene practices, especially in home-cooked meals and mass catering. The provinces of West Java and East Java consistently have the highest number of cases—this is in line with the importance of food safety concerns in Surabaya (East Java). The economic losses resulting from poisoning incidents also provide an important perspective on the social and financial impacts of inadequate hygiene practices.

Most previous studies have focused on official institutional canteens such as hospitals, schools, or large-scale catering services (e.g., public hospitals, Islamic boarding schools, or public kitchens). However, there is still very limited research on the hygiene and sanitation behavior of food handlers in the informal sector, such as street food stalls or food stalls around the Surabaya Ministry of Health Polytechnic, even though this population is very large and in direct contact with daily consumers. The urgency of this research is to reduce the risk of food poisoning in the community and increase hygiene awareness among micro-business operators. Aims to determine the knowledge, attitudes, and hygiene behaviors of food handlers in food stalls around the Surabaya Ministry of Health Polytechnic.

MATERIALS AND METHODS

This study uses quantitative descriptive design with cross sectional approach method. The research was conducted in stalls around the health Polytechnic of the Ministry of Health Surabaya, precisely in Kertajaya Village, Gubeng District, Surabaya, in the period from January to June 2025. The study population included all food handlers in 10 stalls, with a total number of 20 people. The sampling technique used is saturation sampling, which takes all members of the population as a sample.

Research tools in the form of questionnaires to measure knowledge (10 Questions), attitudes (10 questions), as well as observation sheets to assess behavior (10 observations). The questionnaire used was self-made using a combination of questionnaires by other researchers, which had been tested for validity and reliability. If the question is answered correctly, the score is 1; if answered incorrectly, the score is 0. Assessment of knowledge, attitude, and behavior variables are categorized into three, namely good (76-100%), medium (56-75%), and less (0-55%). This research has obtained permission from the East Java provincial government (BAKESBANPOL), the Surabaya city government (DPM-PTSP and Health Office), and the local community health center.

The inclusion criteria for respondents were active food handlers working in food stalls/outlets around the Surabaya Ministry of Health Polytechnic, aged ≥18 years (adults), willing to be

respondents by signing an informed consent form. The exclusion criteria for respondents were food handlers who were not present during the data collection process (not active during the observation/questionnaire period) and respondents who refused to participate or did not complete the questionnaire. The Data were analyzed using univariate analysis. The data was analyzed using SPSS 16.0 software.

RESULTS

Table 1 Characteristics of food handlers in stalls around the health Polytechnic of the Ministry of Health Surabaya in 2025

Variabel	n	%
Gender		
Female	11	55,0
Male	9	45,0
Total	20	100
Ages		
20-35 Years	7	35,0
35-45 Years	4	20,0
>45 Years	9	45,0
Total	20	100
Education History		
Elementary school	6	30,0
Junior High School	6	30,0
Senior High School	8	40,0
Total	20	100
Long Time Working		
<10 years	9	45,0
10-25 years	8	40,0
>25 years	3	15,0
Total	20	100

Source: Primary Data 2025

Most of the respondents were women (55%). The age of respondents was predominantly >45 years (45%). Education respondents mostly high school/vocational school (40%) and long work <10 years (45%).

Table 2 Knowledge of sanitary hygiene of food handlers in stalls around the health Polytechnic of the Ministry of Health Surabaya in 2025

Knowledge	Total	
	n	%
Good	7	35,0
Medium	10	50,0
Less	3	15,0
Total	20	100

Source: Primary Data 2025

Based on Table 2 above explains that at the level of knowledge with the highest number is a medium level of 10 people (50%) while the good category of 7 people (35%), and the category of less 3 people (15%).

Table 3 Sanitary hygiene attitudes of food handlers in stalls around the health Polytechnic of the Ministry of Health Surabaya in 2025

Attitude	Total	
	n	%
Good	7	35,0
Medium	9	45,0
Less	4	20,0
Total	20	100

Source: Primary Data 2025

Based on Table 3 above explains that the attitude aspect obtained by the attitude of the good category as many as 7 people (35%), the attitude is 9 people (45%), less attitude 4 people (20%).

Table 4 Sanitary hygiene behavior of food handlers in stalls around the health Polytechnic of the Ministry of Health Surabaya in 2025

Behavior	Total	
	n	%
Good	13	65,0
Medium	7	35,0
Less	0	0
Total	20	100

Source: Primary Data 2025

Based on Table 4 above explains that the behavioral aspects of the highest number is good as many as 13 people (65%), the level is 7 people (35%).

DISCUSSION

Based on Table 1 describes the characteristics of food handlers by gender, age, education history and length of work. More female food handlers are 11 people (55%), while men are 9 people (45%). This proportion indicates that women have a greater role in the work as food handlers. The existence of the possibility associated with the stigma inherent in society that women are more responsible for the processing and presentation of food in either the household sector or the food industry. Women are generally considered to be more thorough, neat, and careful in preparing and serving food, which is an important characteristic in maintaining food hygiene and sanitation standards. A similar achievement was found in a study by Inayah (2024), namely the number of female workers is more than male workers. This is caused by food handlers tend to have better sanitary hygiene habits[12]. Susanti et al. (2021) states that women are more consistent in washing their hands and keeping kitchen utensils clean than men[13].

Age distribution shows that respondents aged >45 years is the largest group of 9 people (45%), followed by a group of 20-35 years as many as 7 people (35%). The dominance of the age group >45 years shows that there are still many food handlers who have entered middle age or more. Can be caused by several factors such as more work experience, loyalty to the profession or limited ability to work in other fields. Younger age groups (20-35 years), although fewer in number, generally have a higher level of adaptation and access to information and are more open to training and

changes in work practices. Research conducted by Mayasari (2018) obtained the highest proportion of age in the elderly category of 51.9%[14]. This study also shows compliance with research that has been carried out by Baringbing (2023) with the results of the majority of respondents aged >40 years[15].

Most of the respondents have the last education of senior high school as many as 8 people (40%), the rest are evenly divided between junior high school and elementary (30% each). This distribution shows that the work as a food handler is still dominated by individuals with primary to secondary educational backgrounds. The high proportion of primary school graduates indicates that this profession is still largely filled by workers with low education, possibly because formal requirements are not too high. A fairly large proportion of high school/vocational school graduates indicate the involvement of a young workforce or those who have completed secondary vocational education in a related field, such as catering or food service. The results of the same study conducted by Ulfa (2021) are food handlers with basic education by 25%, secondary education by 55%, higher education by 20%[14]. The level of Education has an effect on a person's process to accept the latest facts and apply them in their routine[15].

A total of 9 people (45%) of respondents have worked <10 years and 8 people (40%) with a length of work of 10-25 years, which indicates quite a lot of new workers or who have not been in this field for too long. Only 3 people (15%) have worked >25 years. The largest number is in the <10 years group, which indicates the possibility of high work mobility or the regeneration of the workforce in the informal culinary business sector. Many individuals move from one type of informal business to another due to economic factors, time flexibility, or due to social pressures. This is in line with research by Marfuah (2021), namely the majority of respondents with work experience >6 years as many as 17 people (85%)[16]. Many of the new workers could come from young age groups or from non-food processing backgrounds who see culinary business opportunities as a relatively easy form of entrepreneurship to enter.

Based on Table 2 obtained the results of the level of knowledge of most food handlers is a medium level of 10 people (50%), less knowledge of 3 people (15%) and good knowledge of 7 people (35%). This indicates that the majority of food handlers have adequate knowledge of the basic principles of sanitary hygiene, even though they have not reached optimal levels. Meanwhile, there are 7 people (35%) who have good knowledge, which reflects the presence of some respondents who have understood and may also apply knowledge related to food safety and hygiene better.However, there are still 3 people (10%) who are in the lack of knowledge category, indicating that there are still food handlers who do not understand well the basic principles of food hygiene and sanitation, potentially increasing the risk of contamination and health problems for consumers. The average level of knowledge is moderate because most food handlers only have an elementary to high school education and none have attended college.

Another study conducted by Muna and Ekayanti (2016) obtained consistent results, namely 56.9% of respondents had a good level of understanding and 43.1% of food handlers had a sufficient level of understanding[17].

Based on Table 3, the results obtained by 7 people (35%) showed good attitude in the category, which reflects the high awareness of individuals in applying the principles of personal hygiene, equipment, and work environment during the food handling process. Individuals in this category show a tendency to consistently adopt hygienic behaviors for example, washing their hands before processing food, maintaining nail hygiene, and wearing personal protective equipment such as gloves and headgear. A total of 9 people (45%) were in the moderate attitude category, which indicates that despite an understanding of the importance of food hygiene and sanitation, the application of such attitudes is not fully optimal and is still situational or dependent on external supervision. The majority of moderate attitudes may be caused by educational factors, as the average food handler only has an elementary to high school education. This study is in line with research obtained by Romadon (2024) the attitude of respondents to sanitary hygiene which is classified as a good category of 54.7% and a moderate attitude of 45.3%[18].

Based on Table 4 obtained the results of food handlers with good sanitary hygiene behavior as many as 13 people (65%) and moderate behavior as many as 7 people (35%). The results of 65% of good behavior is obtained from the observation of food handlers who have been good on average such as already using aprons, using gloves or other aids when serving food, not smoking while working and others. Good behavior in sanitary hygiene is essential to prevent cross-contamination and foodborne illness. No food handlers showed behavior in the less category. This indicates that the majority has a good awareness and understanding of the importance of maintaining hygiene and sanitation in the food processing process. Factors causing the low value of sanitary hygiene behavior in food handlers is the lack of awareness in using masks and using closed footwear. Based on Hidayah's research (2023), it was found that most of the respondents had adequate sanitary hygiene practices, namely 47.1%[19]. Behavior is a real manifestation of a person's attitude[20]. Therefore, regular refresher training is very important to maintain and improve the competence and quality of food handlers ' work behavior, regardless of their length of Service[21].

Research bias can occur because respondents lie about their answers or do not understand the questions, resulting in incorrect answers. This study is limited to describing the knowledge, attitudes, and hygiene behaviors of food handlers.

CONCLUSION

The majority of food handlers in the stalls around the health Polytechnic of the Ministry of Health Surabaya showed a level of knowledge and attitude that was classified as moderate, while their behavior in sanitary hygiene was classified as good. Continuous educational efforts are needed to improve knowledge and attitudes, so that the implementation of sanitary hygiene behavior can be maximized.

Food handlers are advised to always practice personal hygiene and sanitation, such as wearing masks, gloves, and aprons, and washing their hands regularly. Local governments are advised to provide education on food hygiene and sanitation and personal hygiene and sanitation.

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