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Knowledge with sanitation and hygiene behavior among food traders in traditional market, Surakarta City

Fadilah Rolavi Jannah*, Rezania Asyfiradayati

Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: fadilahrolavi000@gmail.com

Abstract

Background: Traditional markets are markets that are always visited by everyone who will shop for daily needs, therefore the market must be clean from all diseases caused by garbage and dirt around the market. Based on a preliminary study conducted in three traditional markets in Surakarta, the majority of traders in sick conditions still carry out selling activities without using personal protective equipment, the majority of traders do not implement personal hygiene behavior starting from not providing clean water and not providing trash bins. This can potentially contaminate food so that it transmits disease through food or is transmitted directly to consumers.

Purpose: To know the relationship of knowledge with sanitary hygiene behavior toward food traders.

Method: The study used a quantitative. The design used is an analytical survey with a cross-sectional approach. The study population was 85 traditional market traders in five Surakarta City Traditional Markets, namely Kleco Market, Gede Market, Nangka Market, Kliwon Market, and Legi Market. The sample used was 85 respondents. The sampling technique is Total Sampling.

Results: Based on statistical analysis, a p-value of 0.000 or p-value <0.05 was obtained, so there is a relationship between knowledge and sanitary hygiene behavior towards food traders.

Conclusion: The local government should routinely provide information related to food sanitation hygiene in traditional markets. It is expected that market traders should maintain personal hygiene and food while selling in the market so that the food sold is maintained in quality and safety.

Suggestions: For further researchers, it is necessary to conduct further research on sanitary hygiene behavior in market traders, so that other related factors can be known.

Keywords: Knowledge; Merchant; Sanitary Hygiene; Traditional Market.

INTRODUCTION

The market is a place where sellers and buyers meet to make transactions to determine the price of goods or services. However, the market can also be interpreted as a process of interaction between sellers and buyers to determine the market equilibrium price. From this statement, it can be concluded that the market is a process where sellers and buyers meet directly or indirectly to transact goods/services and determine the agreed price (Thabroni, 2021). Traditional markets have a complex nature, so they can pose various risks that

have a significant impact on health, especially public health. These risks and factors can also vary (Naguib, Li, Ling, Grace, Nguyen-Viet, & Lindahl, 2021). However, hygienic conditions in the region are often not optimal, potentially driving the emergence and spread of zoonotic diseases (Ghatak, Srinivas, Milton, Priya, Das, & Lindahl, 2023).

The traditional market is a market that is always visited by everyone who will shop for daily necessities, therefore the market must be clean from

all diseases caused by garbage and dirt around the market. The market in Indonesia is known for poor sanitation facilities and the hygiene behavior of market residents and cleaners, Ignorance about the benefits of sanitation among the community, especially market residents results in people lacking in efforts to live clean and healthy. So that in the end, it produces a market environment that has a dirty, disgusting, and garbage market image that can cause disease (Masyhuda, Hestningsih, & Rahadian, 2017).

Four factors must be considered in the application of sanitation, namely place factors, equipment factors, food factors, and human factors. However, based on observations, many traders process until the presentation of food, there are still many handlers who do not wear plastic gloves, also many handlers do not wear aprons or aprons, do not wash their hands in running water in processing foodstuffs and there are still food places with poor hygiene conditions, this, of course, increases the risk of food will be contaminated (Swamilaksita, & Pakpahan, 2016).

The implementation of environmental health requirements in public places is part of the efforts that must be made to improve the degree of public health (Marinda & Ardillah, 2019). Food is a very important need for human life. Food provides the energy and materials needed to build and replace tissues, to work, and to maintain the body's defenses against disease. Along with the progress of the times, society now demands ease in obtaining food. This fact encourages the growth of food traders such as restaurants, catering services, and street food vendors. Fulfillment of hygienic food needs is one of the requirements to achieve optimal health. However, it should be noted that food is one of the media for transmitting infectious diseases and can cause food poisoning if the handling of food, environmental conditions and equipment used are not clean and can cause food contamination by bacteria through the physical and biological environment (Kusumawati, & Yudhastuti, 2013).

The results of the study by the Department of Environmental Health, Faculty of Public Health, Airlangga University, Surabaya on Hygiene and Sanitation of Street Vendors of Nasi Tempe Penyet on Karangmenjangan Street, Surabaya, illustrate that the behavior of food handlers/processors is that

67% do not wash their hands after handling money, 33% do not wash their hands after removing nasal discharge, 33% still wear jewelry when processing food, 75% do not wear work clothes, 92% do not wear aprons and 67% do not wear head coverings (Minister of Health of the Republic of Indonesia, 2015).

Several other microbiological agents are suspected causes of Extraordinary Food Poisoning Events including *Vibrio cholera*, *Escherichia coli*, and *Pseudomonas aeruginosa*. Risk factors for Extraordinary Events of Food Poisoning in the market are suspected because food that is processed and served without paying attention to the aspects of good sanitary hygiene from traders and the period between processing and serving is relatively long can affect risk factors for contamination from pathogenic microorganisms. In addition, the atmosphere in the market is very crowded with many people coming in and out of the market with conditions that have been exposed to dust and microorganisms in the air (Lamatokan, Sari, Nurhayati, & Pramodjati, 2023).

The provision of clean water is also an important thing that needs to be considered by market hawker traders to wash their hands after doing activities with consumers, the habit of food traders who do not routinely wash their hands can be a source of contaminants that are quite influential on food (Islamy, & Sumarmi, 2018). Less traders' hygiene behaviors such as coughing and sneezing in the presence of food can be a way of disease transmission, so it is necessary to implement food sanitation hygiene practices including hand hygiene practices, food handling training, and regular monitoring of food handling practices (Mengist, Mengistu, & Reta, 2018).

RESEARCH METHOD

This research is a type of quantitative research with an analytical survey approach using a cross-sectional study design. The variables in this study consist of dependent variables, namely the sanitary hygiene behavior of traders, and independent variables, namely knowledge. The population in this study was all heavy food traders such as meatballs, chicken noodles, soup, and fried chicken located in 5 traditional markets in Surakarta City with as many as 85 respondents with total sampling techniques. The

Fadilah Rolavi Jannah*, Rezania Asyfiradayati

Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: fadilahrolavi000@gmail.com

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research instrument used was a questionnaire with knowledge consisting of 21 questions and behavior consisting of 20 questions. This research was conducted for approximately 3 months and was carried out in five Surakarta City Traditional Markets including Kleco Market, Gede Market, Nangka Market, Kliwon Market, and Legi Market. The study was approved by the ethics committee of Muhammadiyah of University Surakarta under the number: 580/C.8-/FIK/III/2024.

The collected data is the result of interviews and filling out questionnaires to food traders by means of observation using interviews and questionnaires to obtain data on the Knowledge and Behavior of Hygiene Sanitation of Food Traders. then analysis and evaluation of all stages of the research that have been carried out. The scores given are 0 poor and score 1 good, For the trading period category, it is

said to be a new trading period if the trading period is 1-5 years and it is said to be a long trading period if the trading period is >5 years.

Univariate analysis is used to explain or describe each variable studied. The information presented uses a frequency distribution with a percentage or proportion measure of the dependent variable (food vendors' hygiene and sanitation actions) and the independent variable (food vendors' knowledge and behavior), and Bivariate analysis was conducted to determine the relationship between independent variables and dependent variables using the chi square test with a 95% confidence level ($\alpha = 0.05$). If $p \leq 0.05$ then there is a relationship between the independent variable and the dependent variable. While if $p > 0.05$ then there is no relationship between the independent and dependent variables.

RESEARCH RESULTS

Table 1. Characteristics of Respondents (N=85)

Variable	Results
Age (n/%)	
(Mean±SD) (Range) (Years)	(47.65±12.832) (17-67)
Late Adolescence (17–25 years)	6/7.0
Early Adulthood (26–35 years)	9/10.6
Late Adulthood (36–45 years)	19/22.3
Early Elderly (46–55 years)	24/28.2
Late Elderly (>56 years)	27/31.9
Has Been Food Traders (Year)(n/%)	
1–5 Years	9/10.6
>5 Years	76/89.4
Education (n/%)	
Elementary School	2/2.3
Junior High School	2/2.3
Senior High School	61/71.8
Diploma Degree	12/14.1
Bachelor Degree	8/9.5
Knowledge (n/%)	
Low	25/29.4
High	60/70.6
Sanitation and Hygiene Behavior (n/%)	
Poor	14/16.5
Good	71/83.5

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Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: fadilahrolavi000@gmail.com

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Based on Table 1. it is known that most respondents are aged Early Elderly, namely 46-55 years, as many as 25 respondents (29.1%), and respondents are at least Late Adolescents, 17-25 years, as many as 6 respondents (7%). Respondents who had a new trading period were 9 people (10.5%) and old trading period as many as 77 people (89.5%). Most respondents had the last high school education as many as 52 people (60.5%) and respondents had at least 2 elementary education levels (2.3%) and 2 respondents (2.3%) junior high school education levels. The majority of respondents have good knowledge as many as 60 respondents (70.6%) and the majority of respondents have good behavior as many as 71 respondents (83.6%).

In this study, a chi-square analysis was conducted to determine the relationship between knowledge and sanitary hygiene behavior in food traders in several traditional markets including the Kleco market, big market, jackfruit market, kliwon market, and Legi market with a total of 85 respondents.

Table 2. Chi-Square Test Table of Knowledge Relationship (N=85)

Variables	Sanitation and Hygiene Behavior		p-value
	Poor (n=14)	Good (n=46)	
Knowledge (n/%)			
Low	14/100	11/23.9	0.000
High	0/0	60/130.4	

Based on Table 2. the majority of respondents were categorized as having good knowledge and good behavior as many as 60 respondents (130.4%) in this study. Based on analysis using chi-square, a p-value of 0.000 is smaller than 0.05, which means that it can be concluded that there is a significant relationship between knowledge and behavior.

Table 3. Sanitary Hygiene Behavior

Behavior	Percentage of Positive Behavior (%)
Washing Your Hands Properly Every Time You Want to Handle Food	100
Covering Your Mouth Not While Smoking	100
Contact with Food Not While Smoking	95.3
Using Food Serving Tools (Not Using and Sneezing)	95.3
Using Head Coverings	94.1

Based on table 3 the majority of respondents apply sanitary hygiene behavior based on Decree of the Minister of Health of the Republic of Indonesia No 942, which includes washing hands properly every time they want to handle food, using head coverings, contact with food not while smoking, covering the mouth when coughing and sneezing, and using aids in serving food (not using bare hands).

DISCUSSION

Food sanitation is a preventive measure taken to reduce the possibility of pathogenic and toxigenic microorganisms through sanitation practices, both

surface and equipment sanitation, garbage disposal, and pest or vector disease control (Knechtges, 2015). Personal hygiene in food handlers is the responsibility of every individual who processes food and beverages, supported by basic knowledge about the importance of cleanliness in a person. For example, washing hands, applying coughing and sneezing, using protective clothing, paying attention to nail hygiene, covering the head, and paying attention to nail hygiene (Kusmiyanti, 2021).

The implementation of sanitation hygiene can be a guarantee of food safety produced by food traders. Food safety can be realized, one of which is through the implementation of sanitation. The implementation

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Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: fadilahrolavi000@gmail.com

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of sanitation prevents consumer losses and reduces food waste (Agustina, 2018). The implementation of good hygiene procedures in traditional markets also requires support between the parties involved, including training in safe food processing, traders' ignorance can endanger the safety of consumers as a whole (Sekoai, Feng, Zhou, Ngan, Pu, Yao, & Habimana, 2020).

Hygiene behavior is influenced by three factors, namely facilitating factors (knowledge, attitudes, traditions, social level, economic level, culture, and so on). This factor, especially the positive factor facilitates the realization of behavior, so it is often called the facilitating factor (Permatasari, Handajani, Sulandjari, & Faidah, 2021). The most important factors determining the prevalence of foodborne illness are lack of knowledge on the part of food handlers and indifference to safe food management. Knowledge of personal hygiene is very important because good knowledge can improve health (Purwanto, & Astrawinata, 2018).

Based on the results of the study, it is known that most respondents have good knowledge and have good sanitation hygiene behavior. This can be seen through statistical tests. The results of the statistical test obtained a p-value of 0.00 (<0.05) so it can be concluded that there is a significant relationship between knowledge and sanitation hygiene behavior of food traders in traditional markets in Surakarta City. This study is in line with other studies, namely by using the chi-square test, a p-value of 0.001 (<0.05) was obtained, indicating a relationship between knowledge and sanitation hygiene practices of street food traders in Kotamara, Nganganaumala Village, Baubau City (Amiruddin, Taswin, & Putri, 2021).

Good knowledge can be influenced by several factors such as sources of information, educational factors, and environmental factors (Marwanto, 2019). The more information a person obtains from the family environment, neighborhood environment, health workers, and print media, the more it will affect a person's level of knowledge. Knowledge is a predisposition or factor that makes it easier for a person to behave (Permatasari et al., 2021). If a person has good knowledge, then he will be able to apply it to everyday behavior. Based on research, several factors that influence the hygiene of food handlers in restaurants in the Padang Port Health

Office work area are knowledge ($p = 0.030$), attitude ($p = 0.030$), and training ($p = 0.010$) (Hidayati, 2022).

Food handlers are people who are in direct contact with food and its equipment, from the preparation, cleaning, processing, transportation, to serving stages. Personal hygiene of street vendors in the market that is not observed can cause the transmission of foodborne diseases (Maftukhah, 2024). Food traders who have poor personal hygiene can be influenced by a lack of knowledge and awareness of the importance of personal hygiene. One of the factors that causes bacteria to appear is through lack of hand washing, not drying hands using towels, and not wearing aprons. In addition, contact with food contaminated with pathogenic microorganisms and then touching uncontaminated food can result in cross-contamination. Hygiene conditions are also one of the main factors associated with the occurrence of microbiological contamination of food. This can result in an increased prevalence of pathogenic microorganisms in food and contribute to an increase in food-related diseases (López, Burgos, Vanegas, Álvarez, Mendez, & Quinteros, 2023).

Food traders who have good knowledge of personal hygiene, but do not apply personal hygiene measures due to lack of awareness which causes respondents' hygiene measures the category less (Nildawati et al., 2020). Food and health knowledge is very important to learn because knowledge about food and health is an internal factor that affects snack consumption (Rukmansyah, Mutthalib, Baharuddin, & Rahman, 2022).

Traders' knowledge of good food hygiene and sanitation affects good behavior as well, this is shown from the results of research that traders who understand food hygiene and sanitation behavior during buying and selling activities are also good. This behavior is shown by many traders who wash their hands with soap before touching food, use tongs/equipment when touching food, and do not sell or take off work when suffering from infectious diseases, traders also use aprons when buying and selling. Knowledge has a very important role in implementing food sanitation hygiene, to reduce the risk of contaminated food poisoning (Maulana, & Porusia, 2020).

Personal hygiene of market hawker vendors that are less considered can cause the transmission of

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Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: fadilahrolavi000@gmail.com

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foodborne diseases. The Decree of the Minister of Health of the Republic of Indonesia Number 942 of 2003, states that in carrying out snack food handling service activities must meet requirements which include traders not suffering from infectious diseases such as diarrhea, influenza, or cough; maintaining personal hygiene such as nail and hand hygiene, hair hygiene, clothing hygiene, wash hands every time handling food, do not cough and sneeze in front of snack food served and use tools when touching food (Ministry of Health of Republic of Indonesia, 2003). Less traders' hygiene behaviors such as coughing and sneezing in the presence of food can be a way of disease transmission, so it is necessary to implement food sanitation hygiene practices including hand hygiene practices, food handling training, and regular monitoring of food handling practices (Mengist et al., 2018).

CONCLUSION

There is a significant relationship between knowledge and sanitary hygiene behavior of Surakarta traditional market traders.

SUGGESTIONS

For further researchers, it is necessary to conduct further research on sanitary hygiene behavior in market traders, so that other related factors can be known. Market traders should still maintain personal hygiene and food while selling in the market so that the food sold is maintained in quality and safety.

For the Health Office should routinely provide information related to food sanitation and hygiene in traditional markets. Efforts to provide information can be made by regular training or pasting warning posters around the market. In addition, related parties can also conduct surprise inspections related to sanitary hygiene in the market area.

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Fadilah Rolavi Jannah*, Rezanisa Asyfiradayati

Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta
Corresponding author: *E-mail: fadilahrolavi000@gmail.com

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