
CHARACTERISTIC OF TRADERS AND SANITATION CONDITIONS OF TRADITIONAL MARKET IN PALEMBANG

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ABSTRACT

Background: Poor sanitation conditions in the market can cause various diseases. Supervision of market sanitation needs to be carried out continuously by various parties as an effort to minimize the transmission of diseases and environmental health problems. The objective of the study was to analyze the market sanitation conditions and characteristics of traders in Palembang city markets. **Methods:** This study is an observational study with a cross-sectional design. This study was conducted in February-May 2024. The research sample was 54 traders and market conditions at Pasar 3-4 Ulu Palembang. Data were collected using questionnaires by means of observation. **Results:** The results of this study obtained that the sanitation conditions of Market 3-4 Ulu were in the category of not meeting requirements (59.0%), such as water for hygiene sanitation needs, toilets, and handwashing places. The characteristics of traders aged 51-56 who were still productive working 31 (57.4%) were that many were also female 36 (66.7%), working hours were ≥ 8 hours 14 (25.9%), and the lowest education was 38 (70.4%) traders. The level of knowledge of traders was low 21 (38.9%). **Conclusion:** The sanitation conditions of traditional markets in Palembang City were found to be substandard, and the majority of traders were women with low levels of knowledge regarding market sanitation.

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INTRODUCTION

The World Health Organization (WHO) reported that sanitation is an effort made to monitor physical environmental factors that have the potential to influence physical development, survival, and human health (Nainggolan, 2021). Health issues and sanitation conditions are closely related, so it is a global concern listed in the sustainable development goals. The health goal of the SDGs is listed in point three, which states to ensure healthy lives and promote well-being for all people at all ages and has various targets. The sanitation goal is at point six, which states ensuring the availability and sustainable management of clean water and sanitation for all. So that the target of equitable and adequate sanitation for all is achieved. Currently, there are approximately 2.4 billion people worldwide who do not use adequate sanitation (Suparyanto dan Rosad, 2020).

Poor sanitation is associated with cholera, diarrhea, dysentery, hepatitis A, typhoid, poliomyelitis, increased stunting, and encouraged malnutrition. Around 827,000 people in developing or low- and middle-income countries die each year due to lack of adequate water, sanitation, and hygiene coverage. Inadequate sanitation is estimated to be the cause of 432,000 deaths. Public places and facilities can be a means of environmental pollution, disease transmission, and health disorders; therefore, supervision of public health sanitation needs to be improved (Firdanis et al., 2021).

In ASEAN countries, it is reported that countries with the best sanitation access include Singapore, Malaysia, and Thailand, which is 100%, while countries with poor sanitation access are Myanmar (74%), Indonesia (75%), Cambodia, and Laos (77%) (PPAS, 2017). Based on data from the Health Profile, Indonesia has around 78,832 registered public places and facilities spread across 34 provinces, and only 47,331 public facilities have undergone environmental health inspections. Even so, nationally the percentage of public facilities that were supervised according to standards in 2021 was 60%, which has reached the target of the 2021 Renstra. The provinces with the highest percentage of public facilities are Bengkulu (84.3%), West Sumatra (76.5%), and DKI Jakarta (75.9%), while the provinces with the lowest TFU achievements are DI Yogyakarta (17.0%), Riau Islands (23.5%), and Aceh (24.0%). The target achievement and percentage of public facilities in South Sumatra Province is 28.7%.

Strategic Plan of the Directorate of Environmental Health 2020-2024, the priority scope of public facility supervision is focused on three loci, namely schools, health centers, and markets (Kemenkes RI, 2021). According to the Regulation of the Minister of Health No. 17 of 2020, a healthy market is a condition of a clean, safe, comfortable, and healthy people's market that meets the Environmental Health Quality Standards and Health Requirements and supporting facilities and infrastructure by prioritizing the independence of the market community. In order to organize 3 Healthy Markets, every People's Market Manager is required to meet the Environmental Health Quality Standards and Health Requirements to ensure the quality of the People's Market environment. These quality standards include water, air, land, food, facilities and buildings, and vectors and disease-carrying animals.

Palembang has 91 markets spread across eighteen sub-districts. Of the total number of registered markets, only 40, or 38.9%, meet health requirements. Sub-districts that have markets that meet health requirements consist of Sukarami, Kalidoni, and Kemuning sub-districts. Meanwhile, the sub-districts with the lowest market percentage are Ilir Timur I Sub-district at 4%, Jakabaring Sub-district, the working area of the Opi Health Center at 20%, and Ilir Timur III Sub-district at 25%. (Dinkes Kota Palembang, 2021). The results of the study at the Winenet Market in North Sulawesi showed poor market sanitation conditions, including scattered garbage and poor drainage systems, dark market buildings, and slippery floors, some of which were found in traditional markets that paid little attention to basic sanitation, which has the potential to become a place for the transmission of various diseases (Johannes, F, 2020).

Research on the condition of sanitation facilities in Penfui Market, Kupang City, shows that the condition of building sanitation facilities is in the good category (86%), the condition of waste management sanitation facilities is in the poor category (50%), the condition of toilet sanitation facilities is in the poor category (56%), the condition of clean water sanitation facilities is in the poor category (63%), and the condition of wastewater drainage sanitation facilities is in the poor category (25%). So that the condition of sanitation facilities is something that is recommended to be given more attention and supervision by market managers or related agencies (Hermanus, 2021).

Based on research on the analysis of environmental sanitation implementation in KM.5 Market Palembang, it states that the availability of clean water is not yet sufficient, there are not enough trash boxes, etc., so it is concluded that the availability of facilities and infrastructure is not sufficient. With the results obtained, it is recommended to compare environmental sanitation in markets in Palembang City with different

places (Ruru & Septiawati, 2020). Based on the preliminary study conducted, the sanitation conditions are not good, such as a lot of garbage scattered around the market, no handwashing facilities available, and stagnant water in the market. Therefore, the study was to analyze the sanitation conditions of the market and the characteristics of traders in the Palembang City market.

METHODS

This study is an observational study with a cross-sectional design. This study was conducted in February-May 2024 at the 3-4 Ulu market in Palembang. The sample size was calculated using the Slovin formula with a sample size of 54 traders. Data were collected using a checklist from the Minister of Health Regulation No. 17 of 2020 concerning Healthy Markets by means of observation, while trader data were collected using a questionnaire by means of interviews. Data were analyzed univariately and presented in the form of a frequency distribution table.

RESULTS

The results of data processing and analysis are presented in the table below:

Table 1
Sanitation Conditions of Traditional Market in Palembang 2024

No	Variables Sanitation Inspection	Criteria
1	Water for sanitation hygiene needs	Not eligible
2	Bathroom and toilet	Not eligible
3	Waste management	Not eligible
4	Sewage drainage channel	Not eligible
5	Wastewater Treatment Plant	Not eligible
6	Hand washing facilities	Not eligible
7	Control of vectors and disease-carrying animals	Not eligible
8	Market disinfection	Not eligible

From the observation results at the 3-4 Ulu market, it does not meet the requirements for healthy market sanitation with a total value of 23 (59.0%), referring to the Minister of Health Regulation No. 17 of 2020 concerning healthy markets, with a minimum score of $\geq 70\%$. Findings that contain aspects that do not meet the requirements include water for sanitation hygiene needs 1/5 (20%), bathrooms and toilets 5/11 (45.5%), wastewater drainage 2/4 (50%), handwashing places 0/4 (100%), control of vectors and disease-carrying animals 3/5 (60%), and market disinfection 1/2 (50%).

Table 1
Characteristics of Respondent at Traditional Market in Palembang 2024 (n=54)

Variables	n	Persentase (%)
Age Groups		
1. ≤ 50 years	23	42.6
2. > 50 years	31	57.4
Gender		
1. Male	18	33.3
2. Female	36	66.7
Education Level		
1. Low	38	70.4
2. High	16	29.6
Length of Working		
1. ≤ 8 hours/day	14	25.9
2. > 8 hours/day	40	74.1
Knowledge		
1. Not Good	37	31.5
2. Good	17	68.5

DISCUSSION

Market Sanitation

Based on the researcher's findings, Pasar 3-4 Ulu does not meet the sanitation requirements for a healthy market, with a total value of 23 (59.0%) referring to Health Regulation No. 17 of 2020 concerning Healthy Markets, with a minimum score of $\geq 70\%$. The supervision variables that do not meet the requirements include water for sanitation hygiene needs, bathrooms and toilets, waste management, wastewater drainage, handwashing places, control of vectors and disease-carrying animals, and market disinfection.

Based on the researcher's findings, Pasar 3-4 Ulu does not meet the sanitation requirements for a healthy market, with a total value of 23 (59.0%) referring to Health Regulation No. 17 of 2020 concerning Healthy Markets, with a minimum score of $\geq 70\%$. The supervision variables that do not meet the requirements include water for sanitation hygiene needs, bathrooms and toilets, waste management, wastewater drainage, handwashing places, control of vectors and disease-carrying animals, and market disinfection. Previous studies reported that market sanitation conditions are related to market waste management (Yunus 2020).

Water for sanitation hygiene needs

Water for sanitation hygiene needs is water used for daily needs such as washing, cooking, bathing, and so on. The water used in Pasar 3-4 Ulu comes from the regional drinking water company (PDAM Tirta Musi), which is sufficient in quantity and has good physical quality. However, the water is not tested for water quality every 6 months because, according to the market manager, the water from PDAM has met the applicable water quality requirements before reaching customers. This study is in line with market sanitation related to the clean and healthy living behavior of traders (Feli and Ratih, 2021)

Conditions of Traditional Fish Markets in Kluwut Village, Bulakamba District, are such that the aspect of clean water that does not meet the requirements is that water testing is not carried out every 6 months because health workers have never tested it and there are no complaints about the water because the water used is already clean (Khajjah & Pramitasari, 2023). According to the researcher's assumption, market managers assume that PDAM water has met the requirements and does not need to be tested again due to a lack of knowledge and awareness of the importance of periodic water quality testing and minimal coordination between market managers, PDAM Tirta Musi, and the health office regarding water quality testing.

Bathroom and toilet

The rooms and toilets at Pasar 3-4 Ulu are not separated between men and women, and the number available does not comply with applicable regulations because Pasar 3-4 Ulu only has 1 toilet with 41 male and 77 female traders. Where, according to the requirements, the number of toilets should be 1:40 for men and 1:25 for women. Other things that do not meet the requirements are the absence of a place to wash hands and soap, no trash cans, ventilation $< 30\%$ of the floor area, and no toilet lights. This study is in line with Nainggolan, Esra (2022), entitled Analysis of Market Sanitation and Knowledge of Street Vendors and Density of Flies at Sei Sikambing Market, Medan City, explaining that the toilet does not provide a place to wash hands equipped with running water and soap, and the floor is slippery, crusty, and smelly.

Another study conducted by Indah Prameswari and Elanda Fikri (2023) found that women's and men's toilets are not separate, the water reservoir is made permanent (not using a bucket) but is free from larvae, and no closed trash containers are found in each toilet cubicle. According to the researcher's assumption, poor sanitation conditions in Pasar 3-4 Ulu can affect the health of traders and market visitors by providing additional toilet facilities such as handwashing facilities, soap, trash bins, and adequate lighting.

Waste management

The waste management aspect in Pasar 3-4 Ulu has met the requirements; waste from Pasar 3-4 Ulu, Palembang City, is transported every day by officers who work. This study is in line with Kahfi (2017), which states that the existence of routine waste transportation can prevent waste accumulation in the market area. Waste accumulation can be a source of disease and reduce environmental quality. The existence of excessive and piled-up waste quantities will become a breeding ground for pathogenic microorganisms that are harmful to human health and also become a nest for flies, rats, and other wild animals.

According to the researcher's assumption, that relatively large market waste has its own problems, where most of the market waste is wet waste, so that during the collection of these piles it becomes a nest for flies, rats, and insects, becomes a source of soil, water, and air pollution, and aesthetically will cause odor and be unpleasant to look at.

Sewage drainage channel

The wastewater drainage channel in the 3-4 Ulu market does not meet the requirements because the drainage conditions in this market are not closed, and liquid waste cannot flow smoothly because it is clogged with garbage. However, the SPAL is not equipped with a control tank as a separator for dirt deposits in the wastewater drainage system. The wastewater drainage channel in Margahayu Market is directly connected to the river/river near the market without passing through a control tank or wastewater treatment plant (Indah Prameswari and Elanda Fikri, 2023). According to the researcher's assumption, market managers are negligent in maintaining and cleaning market drainage, there is a lack of awareness of traders and market visitors to maintain environmental cleanliness, and there is minimal supervision from the authorities regarding the fulfillment of sanitation standards in the market.

Hand washing facilities

Based on the findings of researchers conducted by researchers at the 3-4 Ulu market, it can be classified as not meeting the requirements because it does not have handwashing facilities. In line with Anggraeni & Aslamiyah (2018), the results of the environmental sanitation assessment at the Balmbangan Market, Banyuwangi, showed that in the East Blambangan market there was no place to wash hands for traders or visitors. Traders wash their hands only with running water in the hose that has been provided and do not use soap. In addition, there are many animals that transmit disease vectors, such as rats, flies, cockroaches, and others.

The same results were shown in the two markets in South Tangerang, which still have the same problem, namely that clean water and wastewater testing has not been carried out routinely every 6 months (Efendi & Syifa, 2019). According to the researcher's assumption, human hands are often agents that carry germs and can move from one person or from the environment to another through direct or indirect contact. This can affect the health of traders and buyers because hands that are not washed with running water and soap are likely to be contaminated with bacteria, so that bacteria on the hands can cause diseases such as diarrhea.

Control of vectors and disease-carrying animals

Control of vectors and disease-carrying animals in Pasar 3-4 Ulu showed that there were still many rats roaming around the market, especially the fish sales area. The fly population index did not meet the standards because the measurement results at the temporary shelter averaged 12, the fish sales area 5, the vegetable sales area 2.2, and the snack sales area 4.4. The measurement results in several places showed that the fly population index was >2 tails/fly grill; this was because disinfection was not carried out at Pasar 3-4 Ulu, Palembang City. This study is in line with the research of Rusman Efendi and Syifa (2019). Market Health Status Reviewed from the Aspects of Sanitation and Clean and Healthy Living Behavior (PHBS) at Ciputat Market and BSD Modern Market, South Tangerang City, that disease-carrying animals (vectors), namely flies, were found in the Ciputat Market and BSD Market environments; both markets had rats roaming around the market.

Another study in line with this was conducted by Feli and Ratih (2021) entitled Clean and Healthy Living Behavior of Traders and Sanitation Conditions of Traditional Fish Markets in Kluwut Village, Bulakamba District, which showed that fly density was still high, and there were pets (cats/dogs) roaming around. Based on their research, it is known that regular spraying of disinfectants was not carried out. According to the researcher's assumption, the lack of knowledge and awareness of the importance of disinfection to prevent vector breeding, minimal budget for vector and disease-carrying animal control activities, and lack of coordination between market managers, health services, and other related parties in vector control efforts.

Market disinfection

In 3-4, Ulu Market did not disinfect the market. This is in line with Feli and Ratih's research entitled Clean and Healthy Living Behavior of Traders and Sanitation Conditions of Traditional Fish Markets in Kluwut Village, Bulakamba District in 2021, where disinfection was also not carried out in the market. In accordance with applicable regulations regarding healthy markets, control of vectors and pests must be carried out by disinfection. According to the researcher's assumption, market managers do not yet understand the importance of disinfection to maintain the health of the market environment, lack knowledge about proper and safe disinfection methods, and lack supervision from the authorities regarding compliance with healthy market regulations.

Based on the description above, it is known that Pasar 3-4 Ulu has a healthy market value of YES 23 (59%), which shows that the results do not meet the minimum value of a market to be said to be healthy, which is $\geq 70\%$, so that Pasar 3-4 Ulu is said to be an unhealthy market.

Respondent Characteristics

From the results of the study, it was found that the gender of female traders was 36 (66.7%) and male traders was 18 (33.3%). Differences in gender can affect a person's behavior and actions because there are differences in thinking patterns between men and women. Usually women are more sensitive and receptive to input, especially input related to health that motivates them to maintain personal hygiene and the hygiene of those around them (Shakoroni, 2012 in Davita, 2022). This study is in line with Juwita's (2021) research at Sekip Ujung Market, Palembang City, which stated that there were fewer male traders, namely 20 (29.9%), with 47 female traders (70.1%). According to the researcher's assumption, female traders usually take better care of their personal hygiene and their trading place and support efforts to maintain overall market cleanliness and accept input and education about the importance of sanitation and health. Meanwhile, male traders may be less involved in efforts to maintain overall market cleanliness and require a different educational approach and strategy to increase awareness of sanitation and health.

Based on age, it is known that traders with an age range of 30-40 years are 10 (18.5%), traders aged 41-50 years are 13 (21.4%), and traders aged 51-65 years are 36 (57.4%). aged 36-72 years are 72 (81.8%). One of the factors that influences a person's biological and psychological function is age. In old age, there is a reduction in the efficiency of organ systems, including the heart, lungs, and circulatory system, as well as changes in the sensory area and the process of perception of mental functions, including memory, learning, and intelligence (Nova, 2013). According to the researcher's assumption, understanding the differences in trader behavior based on age can help in designing more effective strategies to improve sanitation and health in traditional markets. Education and interventions targeted at groups of traders with different ages can maximize the positive impact on their behavior and actions related to cleanliness.

Based on the length of work/hours, it is known that traders who work for 8 hours are 14 people (25.9%). According to Law No. 13 (2003), the provisions for working hours are 8 hours of work in one day or 40 hours of work in one week for five working days in a week, while traders in Pasar 3-4 Ulu mostly work every day in a week. According to the researcher's assumption, traders who work ≥ 8 hours are usually more easily tired and have less energy to maintain cleanliness and are less focused on sanitation and health regulations due to fatigue and other priorities.

Based on the last level of education, it is known that 38 (70.4%) have low education and 16 (29.6%) have high education. Education can affect a person's learning process. The more educated a person is, the easier it is for that person to receive information. This means that the higher the level of education, the greater the influence on a person's behavior. Higher education also provides motivation, attitude, discipline, and opportunities for higher productivity (Davita, 2022). This study is not in line with Nainggolan (2021) at Sei Sikambing Market because the education of traders in the high category is 48 (77.4%) and the low category is 14 (22.6%). This means that traders in Sei Sikambing Market are dominated by the high education category, while traders in 3-4 Ulu Market are dominated by the low education category. According to the researcher's assumption, traders with low levels of education need more intensive and creative education about the importance of sanitation. They need support and motivation from traders with high levels of education and market managers.

The results of the study on the knowledge of traders at Pasar 3-4 Ulu showed that out of 54 traders, 21 (38.9%) traders had a low level of knowledge about environmental sanitation. Questions asked to measure trader knowledge included clean water in the market, availability of toilets, waste management, and vectors. Traders with less knowledge in understanding the concept of sanitation were 39 (72.2%), good waste management starting from collection, sorting, disposal, and transportation, the purpose of temporary shelters (TPS) and the amount that must be available 22 (40.7%), smoking ban 17 (31.5%), and how to control vectors and pests 12 (22.2%). This study is in line with Nainggolan (2021) at Sei Sikambing Market, where the level of knowledge of traders was low at 48 (77.5%) and the level of knowledge was high at 14 (22.5%). The results of the study explain that traders' knowledge about waste management is still lacking; according to traders, dry and wet waste do not have to be separated.

This study is not in line with the results of Rangkuti & Musfirah's (2020) study on the study of knowledge, attitudes, and perceptions of traders regarding the quality of environmental health in the Giwangan Market in Yogyakarta, where the results were that 78 (76.5%) traders had good knowledge and 24 (23.5%) did not. Questions about sanitation were understood by 17 (31.5%) traders well, 16 (29.6%) traders

adequately, and 21 (38.9%) others did not understand sanitation due to lack of information or accuracy in understanding the questions. Traders' knowledge about sanitation is obtained from various available information. When someone receives information, it will increase their insight so that knowledge about sanitation increases.

According to the researcher's assumption, the low level of knowledge among traders is due to the lack of information about environmental sanitation. Therefore, counseling and empowerment are needed for traders from related agencies such as market services, healthy market development teams, market managers, health services, health center sanitation officers, and other related parties by using promotional media such as posters and brochures that describe the importance of market environmental sanitation or through participatory training on changes in hygiene and sanitation behavior. It is hoped that training with participatory methods will make traders understand market environmental sanitation so that market environmental conditions are healthier.

Research Limitations

The limitations of this study are the location of samples and variables that are lacking, so it is necessary to add a large number of samples and variables to strengthen the results of the study. This study is still limited to traders of a traditional market.

CONCLUSION

Based on the results of the study on the characteristics of traders at 3-4 Ulu Market Regarding healthy market sanitation in 2024, it can be concluded that the sanitation conditions at 3-4 Ulu Market in Palembang City are categorized as not meeting requirements at 59.0% because, based on the assessment of PERMENKES No. 17 of 2020 concerning healthy markets, the minimum percentage of markets meeting requirements is $\geq 70\%$. The majority of elderly traders who are still productive are female and have low education. Working hours are more than 8 hours with low knowledge of market sanitation as much as 38.9%.

It is necessary for related institutions to conduct regular monitoring of the sanitation conditions of the market environment and educate traders in traditional markets..

CONFLICT OF INTEREST

There are no conflict of interest in this research.

AUTHOR CONTRIBUTIONS

The roles of all authors should be listed: DA: Conceptualization, Methodology, Software, MS.: Data curation, Writing- Original draft preparation. MI: Visualization, Investigation. Jan Jansen: Supervision.: KS: Software, Validation.: MI: Writing- Reviewing and Editing

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