

# The role of sanitarians in monitoring the implementation of health protocols on prevention of covid-19 pandemic a study on traditional and modern markets in municipaliti

*By Dita Hasni*

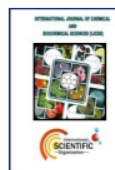


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## The role of sanitarians in monitoring the implementation of health protocols on prevention of covid-19 pandemic: a study on traditional and modern markets in municipalities around capital city of indonesia

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### Abstract

The aim of this research is to determine the role of sanitarians in supervising the implementation of health protocols in traditional and modern markets to prevent the COVID-19 pandemic. This research design is a mixed method. This research uses qualitative and quantitative methods. The population in this research is all traders in traditional and modern markets. There were 100 respondents to the research. We conducted the sampling using non-probability sampling. The primary data in this research is questionnaire data from interviews. We conducted data analysis in this study descriptively using univariate analysis and bivariate analysis. The research results indicate that traders in traditional markets feel like sanitarians due to the higher frequency of meetings. Market managers dominate the role of sanitarians in modern markets. Traders in traditional markets do not implement the COVID-19 health protocol as effectively as those in modern markets. Traders who do not wear masks and change them every four hours still exist; only 10% use partitions or barriers; 80% of traders always remind visitors to wear masks; and 50% of traders always remind them to keep their distance. There is a significant association at  $\alpha = 0.05$  between the role of the sanitarian and the implementation of health protocols in traditional marketplaces, as indicated by the p value of 0.01. Conversely, at  $\alpha = 0.05$ , there is no significant association between the role of the sanitarian and the use of health protocols in the contemporary market, as indicated by the p value of 0.7.

**Keywords:** Sanitarians, Health Protocols, Traditional Market, Modern Market, Covid-19.

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### 1. Introduction

COVID-19 is an issue that has gained significant attention in a number of nations worldwide. This virus was originally found in Wuhan, China, by scientists. This sickness, which was initially identified as pneumonia in December 2019, is still mysterious because the source of the case's transmission is still unknown [1]. Over 50 cases of this sickness have been documented in less than a month, and it has spread to other Chinese provinces as well as Thailand, Japan, and South Korea. A coronavirus that targets the respiratory system causes Corona Virus Disease 19 (COVID-Hasni et al., 2024

19). This coronavirus infects many animals, such as bats and camels [2]. This virus is zoonotic or can be transmitted from animals to humans and from humans to humans. When an infected individual coughs or sneezes, water droplets or splashes can be released into the air and spread from person to person [3]. This transmission pathway allowed COVID-19 to spread swiftly and fast to a number of countries in a relatively short period of time. COVID-19 was deemed a pandemic by the World Health Organization (WHO) in 2020. As of right now, COVID-19 has spread to more than 200 nations worldwide, killing millions of people and accounting

for over 15 million confirmed cases. So that every country in the world pays attention to preventing COVID-19 in their country [4]. Two instances of COVID-19 were first reported to have spread throughout Indonesia in March 2020. According to the most recent statistics on August 2020, which was made available on the official government website, Indonesia handled over 90,000 confirmed cases of COVID-19, resulting in over 4,500 deaths [5]. Compared to China, where COVID-19 was initially reported, there are more confirmed cases. There is an average daily increase of 1000 cases in the number of COVID-19 positive cases. This shows that COVID-19 transmission is still quite high. East Java Province occupies the position with the highest number of positive cases, namely more than 18,500 people, followed by DKI Jakarta with the number of confirmed positive cases at more than 17,000 people [6]. Indonesia established a special task team in accordance with a March 2020 Presidential Decree to expedite the treatment of COVID-19. Among the responsibilities assigned to this Task Force include directing and coordinating the expedited management of COVID-19 in Indonesia [6]. The National Disaster Management Agency (BNPB) secretariat supports the task force during its implementation by offering administrative and technical assistance. In compliance with government regulation Number 21, Large-Scale Social Restrictions in the Context of Accelerating Handling of Corona Virus Disease 2019, Indonesia is putting large-scale social restrictions (PSBB) into effect in an attempt to manage and restore situations and conditions [7].

The WHO has declared COVID-19 a pandemic, making this PSBB a potential alternative for handling the virus. Other countries affected by COVID-19 previously implemented a lockdown system, closing all access both in and out of their country. The government's strategy in efforts to restrict areas during the COVID-19 pandemic has developed until several new terms have emerged, such as the Implementation of Community Activity Restrictions (PPKM) Java-Bali, up to PPKM level 4 [8]. In an interview, Mr. Joko Widodo, the President of the Republic of Indonesia, stated that communities need to be able to coexist with COVID-19. The President also clarified that the phrase "side by side" does not imply giving up on the situation, but rather that society must be able to adjust by putting in place strict, orderly, appropriate, and correct health protocols as advised in order to continue leading productive lives in the midst of the pandemic. So living side by side with COVID-19 is known as a new order of life, or new normal. The term new normal was then narrated as "adaptation to new habits" so that it could be more accepted by the wider community [9]. Adaptation to new habits requires people to carry out daily activities by strictly adhering to health protocols. This health protocol is a preventive measure against the transmission of COVID-19. The Ministry of Health issued Ministerial Decree specifically to discuss health protocols in public places and facilities [10]. People must adhere to health protocols, such as wearing masks, providing hand-washing facilities using soap, and maintaining distance in market areas. During the implementation of adapting to new habits, it is crucial to actively involve the government and health practitioners who have a better understanding of health protocols. So the government and the authorities contribute to each other with different efforts according to their main tasks and functions [11].

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The sanitarian community health center must ensure community understanding within their area of responsibility. Research has shown that outreach and distribution of masks by volunteers have a significant impact on public awareness [13] can enhance traders' understanding of complying with health protocols during the COVID-19 pandemic. Sanitation workers can maximize their role in preventing and breaking the chain [12]. As written in the technical manual for community health center services during the COVID-19 pandemic, sanitarians have made several efforts, including counseling, environmental health inspections, environmental health interventions, and waste management [13]. So it is necessary to take a picture of the actual field conditions at the traditional and modern market public facilities and how consistent [13] traders' discipline is in complying with health protocols during the COVID-19 pandemic [14]. According to Minister of Health Regulation Number 32 concerning the Implementation of Work, sanitarian workers are anyone who has graduated in the field of environmental health in accordance with statutory provisions [15]. Sanitarian workers must have a certificate of competency in accordance with statutory provisions to obtain a registration certificate. Sanitarians, also called sanitation officers or environmental health officers, must have seven areas of ability to carry out their duties. The description of the role, duties, and functions of a sanitarian derives these competencies [16]. In carrying out their duties, sanitarians provide services to solve problems that can be solved by addressing environmental health. These problems originate from complaints from the public or individuals and the observations or experiences of sanitarians in residential health service facilities, public facilities, workplaces, and recreation areas [16]. In dealing with problems, sanitarians go through stages from identification to monitoring and evaluation [17]. Sanitarians identify problems through inspection and counseling as well as measuring the quality of environmental media both in the field and in the laboratory, which is converted to environmental health quality standards and health requirements [18]. The results of the identification are then carried out through a risk analysis, and steps are then determined to resolve the problem. The list of environmental sanitation problems is divided into two categories: problems originating from service users and problems often encountered by sanitarians.

## 2. Materials and methods

This research design is a mixed method. This mixed- The process of gathering, evaluating, and combining quantitative and qualitative methods in a study or set of studies to comprehend the issues in the research is known as methodologies research design. The purpose of this study was to investigate the function of sanitarians in both traditional and modern marketplaces during the COVID-19 epidemic using qualitative methodologies. In the meanwhile, concerns regarding the application of health standards by traders in traditional and contemporary markets as well as opinions regarding the function of sanitarians in managing the COVID-19 pandemic in traditional and modern markets were addressed in this study using quantitative approaches. A population is an area for generalization made up of items or people chosen by the researcher to be researched based on specific attributes and traits from which inferences can be made. The dealers in both traditional and modern markets

comprise the population under study. The samples in this research were traditional and modern market traders. The researchers rounded up the number of trader respondents in this research to 100, including both traditional market traders and modern market traders, based on sample calculations. The researchers carried out the sampling using non-probability sampling, which allowed for the selection of the sample population based on chance or other planned factors. Primary data are those that researchers have directly got or gathered from the data source. Original or up-to-date fresh data are other names for primary data. Interview questionnaire data serve as the main source of data for this study. Information gathered by scholars from a variety of current sources. Data on the evolution of COVID-19 victims in Indonesia were used as secondary data in this study and were retrieved from the Task Force for the Acceleration of Handling COVID-19 in Indonesia's official website. Researchers carried out data analysis in this study using descriptive univariate and bivariate analysis. In processing the data that has been obtained, researchers use several statistical software programs, including Microsoft Excel and SPSS. Microsoft Excel is used for calculations and also for creating tables of research results, and SPSS is used to process the data that has been obtained so that conclusions and interpretations can be drawn from the results of the processed data. Researchers also used triangulation tables to analyze data from interviews with sanitarians.

### 3. Results and Discussions

Bivariate analysis in this research was used to determine the interaction of two variables, namely the role of sanitarians in supervising the implementation of health protocols for traditional market traders and Table 1 presents a comparative analysis of the ways in which traders in traditional and modern marketplaces apply health protocols, along with the supervision provided by sanitarians from community health centers during this process. In conventional markets, out of the traders observed, 24% executed health protocols poorly, and the function of sanitarians was also subpar. In contrast, 76% of the traders demonstrated good execution of health protocols, despite the fact that the role of sanitarians was still subpar. In this instance, statistical analysis reveals a substantial association ( $p\text{-value} = 0.001$  with  $\alpha = 0.05$ ) between the role of sanitarians in conventional market surveillance and merchants' implementation of health procedures. When community health center sanitarians were involved, the observed data indicated that 26% of the total traders monitored at the modern market had inadequate implementation of health protocols, and the sanitarians themselves were also considered inadequate. Meanwhile, as many as 74% of other traders in the modern market complied well with the health protocols, although the role of sanitarian community health centers was still considered less than optimal. But, according to the statistics, there isn't enough proof to show that there is a statistically significant link between the community health center's role as a sanitarium and traders following health protocols in the modern market ( $p\text{-value} = 0.63$ ,  $\pm = 0.05$ ). Thus, there is a quite striking difference in the relationship between the role of sanitarians and the implementation of health protocols in traditional markets and modern markets, where traditional markets show a statistically stronger relationship compared to modern

markets. Sanitarians is an element that has an important role in implementing COVID-19 prevention. Sanitarians, as health workers who are at the forefront of facing a pandemic, of course have a quite influential role in maintaining the quality of public health. According to another research, there is a substantial correlation between community involvement in the Community Health Center's work area the Stop Open Defecation triggering activity and the knowledge, attitudes, and roles played by health workers. Putting environmental health initiatives into action is one of a sanitarian's responsibilities. Conducting field-based environmental health inspections is one of these initiatives.

25% of traders in traditional markets conducted environmental health inspections, while the remaining 75% reported that they did not. However, the sanitarian stated that he had collaborated with the health center's division to carry out inspections. Traders may have received incomplete information. The modern market also experiences incomplete information. The sanitarian stated that they had carried out environmental health inspections, but only 85% of traders answered that there were no environmental health inspections from the sanitarian. Apart from the role of sanitarians as environmental health managers, other aspects of their roles are as teachers, trainers, and community empowers. Based on the research results, it is known that 30% of respondents in traditional markets stated that sanitarians had provided education and counseling. Meanwhile, sanitarians stated that they had carried out education. Meanwhile, in the modern market, 72% of respondents stated that they did not receive education or counseling. Sanitarian also stated that he had carried out education or counseling for traders at the modern market. There are also leaflets containing COVID-19 information for traders, either directly or through the management. The availability of supporting facilities and infrastructure to prevent transmission is essential for the implementation of COVID-19 prevention. According to other studies, washing hands is the best and most basic way to prevent and control infections. For this reason, as a place with a fairly high risk of transmission, the market must have adequate CTPS available. Based on the research results, 19% of traders in traditional markets stated that sanitarians had built CTPS facilities to support the prevention of COVID-19 in the market area, while 80% of traders said there were none. The results of interviews with sanitarians revealed that the community health center did not set up CTPS facilities because they were already available as grants or gifts from several parties. Meanwhile, 80% of traders at the modern market stated that there had been no construction of CTPS facilities or facilities that support prevention from sanitarians or health centers. According to sanitarians, the market manager had already provided these facilities, which is why they were not provided again. Single-use masks and other personal protective equipment (PPE) can contribute to new environmental health problems during the COVID-19 pandemic. Single-use masks and other personal protective equipment (PPE) can pose new environmental health problems. Research conducted in the Summarecon Serpong area indicates that the inclusion of infectious waste, such as masks and other personal protective equipment, has led to an increase in the prevalence of inorganic waste in the waste distribution. However, does the sanitarian focus on this matter, which in fact is one of the main tasks?

Based on the results of research at traditional markets, it is known that 81% of traders stated that sanitarians or health centers did not process waste during the pandemic. The results of interviews with sanitarians are unknown because the interviewees did not participate. Meanwhile, 88% of respondents at modern markets stated that there was no waste processing or training from sanitarians or health centers. Sanitarians revealed in interviews that they handed over waste processing to a third party, thereby avoiding interference from health center or market managers. The government carries out these duties as a partner in managing the modern market. In this case, the government delegated the authority to transport waste to the Department of Hygiene and the Environment, test merchandise in minilabs by the Food and Drug Supervisory Agency, and check and regulate the accuracy of measuring instruments using standards or reject measures (calibrate). Based on the technical guidelines for community health services during the COVID-19 pandemic, one of the sanitarian's duties is counseling. Sanitarians provide counseling to people without symptoms (OTG) and people under monitoring (ODP) by integrating it with treatment or care. However, the research results showed that none of the traders who answered had ever been classified as OTG or ODP. The results of interviews with sanitarians revealed that sanitarians did not provide counseling because there were no OTGs or ODPs who worked as traders at the modern market. Meanwhile, the sanitarian stated that he had provided counseling to OTGs and ODPs who work as traders. The Republic of Indonesia's Ministry of Health has actively promoted community health in relation to COVID-19 prevention by putting in place safety measures that allow people to go about their daily lives without risk during the pandemic. Among other things, the health protocol specifies how traders should use it before leaving for work, during work, and after work. When going to work, traders should ensure their personal health by checking their body temperature and coughing or sneezing frequently. Based on the research results, it is known that 80% of traders who were respondents at the modern market stated that they always check their health before going to work. Meanwhile, in traditional markets, 55% of traders stated that they always check their health. The market is one of the places where the virus spreads with a moderate risk. Therefore, both visitors and traders must always strictly enforce the use of masks. Based on the research results, it is known that all traders at the modern market stated that they always wear masks when working at the market. Meanwhile, 82% of traders at traditional markets stated that they always wear masks. Based on research, it is known that using a mask can reduce the efficiency of virus transmission. Protective face masks can control the spread of the Corona virus. Using masks can indeed prevent the transmission of diseases such as influenza, influenza-like illness, and Corona viruses in humans. Masks can prevent the spread of droplets from contaminated people, as stated. Therefore, WHO Indonesia recommends using masks to reduce transmission of the COVID-19 virus.

The use of masks during a pandemic must also be considered. As recommended, replace the mask after 4 hours

of use. Likewise, if the mask is damp or wet, replace it immediately. According to the study, medical masks should be replaced every 4 hours. The benefit of changing the mask is that the user remains protected from viruses that may be in the mask they are wearing. Based on the research results, it is known that some traders in traditional markets stated that they always change their masks after 4 hours of use. Meanwhile, 75% of traders at modern markets stated that they always change their masks. It can be seen that this information has not been received evenly by the public, so it is not considered very important. Apart from wearing a mask, maintaining distance can also reduce the efficiency of virus transmission. Other research indicates that maintaining physical distance and social interaction can reduce the risk of transmitting MERS and COVID-19, but it must be complemented by other measures such as wearing a mask, washing hands with running water and soap, avoiding crowds, and practicing personal hygiene. The research discovered that 80% of traders in traditional markets stated that they always maintained a distance of 1 meter from customers. Meanwhile, 90% of traders who were respondents at modern market stated that they always maintained a distance of 1 meter while working. Apart from maintaining distance from customers, traders can also use partitions/barriers to avoid direct contact. Based on research results, only 10% of respondents in traditional markets use partitions or barriers. Market conditions may have been renovated, making it impossible to use barriers. Traders were seen putting up partitions and barriers, namely kiosks selling jewelry and pharmacies. Meanwhile, in the modern market, some use partitions or barriers, and others say no. The market manager indeed facilitated the partition. Meanwhile, kiosks or traders that do not use partitions or barriers are eating places or kiosks located outside the market building. When market conditions are busy with visitors, it can be difficult for traders to always implement health protocols. This can be anticipated by using a face shield so that traders can work freely and still feel safe. The results of research using simulations of spraying aerosols containing influenza viruses were that 70%–95% could be contained using a face shield at a distance of 46 cm from the cough source and immediately after coughing, depending on the droplet diameter. Based on research results, it is known that 18% of traditional traders stated that they use a face shield when it is difficult to keep their distance from visitors. Meanwhile, in the modern market, there are 20% of traders who use a face shield when it is difficult to maintain distance. It is possible that traders do not often use face shields because the frequency of visitors to the market is not as high as before the pandemic. In addition to maintaining health protocols, traders should also remind visitors to comply with them, including wearing masks and maintaining distance when shopping. Based on the research results, it is known that 80% of respondents at modern markets stated that they always remind visitors to wear masks, and 50% of respondents always remind visitors to keep their distance while shopping. Meanwhile, in traditional markets, it is known that 80% of respondents always remind visitors to wear masks, and 50% of respondents always remind them to keep their distance.

**Table 1:** Relationship between the Sanitarian's Role and the Implementation of Health Protocols in Traditional and Modern Markets

Market	Not Good		Good		Total		Value
	n	%	n	%	N	%	
Traditional Market	12	24	38	76	50	100	0.001
Modern Market	13	26	37	74	50	100	0.63

After working in the market, a place with high risk, traders should clean themselves by taking a shower and changing their clothes, as advised. Among the things you need to pay attention to during a pandemic situation is maintaining personal hygiene. Other research suggests that personal hygiene closely relates to the emergence of dangerous disease<sup>4</sup> that can originate from food, people, objects, or places. Based on the research results, it is known that all traders in both traditional and modern markets always clean themselves after work from the market and also change their clothes. Markets are public facilities that are always busy with visitors from a variety of regional origins and economic statuses. Based on observations, modern market visitors are more varied. So traders who spend most of their activities in the market must always remain alert while working in the market during a pandemic like now. Traders who spend most of their activities in the market must coordinate with various parties, including health workers, to create a safe working atmosphere during the pandemic. Health workers, including sanitarians, play a crucial role during the pandemic in creating a society ready to adapt to new habits during and after the pandemic. As a small example, namely monitoring the implementation of health protocols for traders, visitors, and market managers. This change in behavior requires the intervention of health workers to create a conducive environment. Several studies have examined the role of sanitarians in promoting healthy environments. The results show that there is a strong link between visits from sanitarians and healthy homes in the regions that taken as object in this study ( $p$ -value = 0.04). A  $p$ -value of 0.012 was obtained in statistical test findings indicating a strong correlation between the ownership of a healthy residence and the involvement of health professionals in East Peureulak sub-district, East Aceh district. According to the aforementioned research, sanitarians are responsible for keeping an eye on health regulations in traditional marketplaces. The results of statistical tests indicate that there is a substantial correlation between the adoption of the trader health protocol in conventional markets and the participation of sanitarians in supervision ( $p$ -value = 0.001 in  $\alpha = 0.05$ ). This is also known from the results of interviews with sanitarians who have carried out various environmental health service efforts during the COVID-19 pandemic, such as implementing mass vaccination of traders, environmental health inspections, and counseling. However, research yielded other results regarding the role of sanitarians in implementing health protocols in modern markets. The findings of statistical tests indicate that the association<sup>13</sup> between the function of sanitarians in monitoring and the

application of the COVID-19 health protocol for traders in contemporary markets is not significant, with a  $p$ -value of

0.63, meaning that  $\alpha = 0.05$ . Based on the findings of observations, it is known that market managers have implemented a number of promotional and preventive measures. These include installing body temperature checkers, building hand washing stations with soap, dividing traders' shops, and using billboards or posters to remind people to always follow health precautions when at the market. In accordance with what was conveyed by the health center sanitarian, the management had provided many interventions so that the sanitarian or health center only complemented them. Previous research shows that the form of partnership between developer and the dominant manager in the modern market includes cleanliness, security, routine checking of every security device in the market, and so on. So this is illustrated as reported in the press release by Sinarmas Land, which has held vaccinations in coordination with the company for traders and visitors at the modern market.

#### 4. Conclusions

Traders in traditional markets feel the role of sanitarians more due to the greater frequency of meetings. Market managers dominate the role of sanitarians in modern markets. The implementation of the trader health protocol in the modern market seems to be going quite well, including traders always wearing masks and most changing them every four hours; some use partitions facilitated by the management; always remind visitors to keep their distance and use masks; and always maintain personal hygiene both before leaving and after work from the market. Compared to modern markets, the trader health regimen appears to be less well implemented in traditional markets. There are still traders who do not wear masks and replace them every four hours; only 10% employ barriers or partitions; 80% of dealers constantly advise customers to wear masks; and 50% of traders constantly remind customers to maintain a safe distance. There is a significant association at  $\alpha = 0.05$  between the role of the sanitarian and the implementation of health protocols in traditional marketplaces, as indicated by the  $p$  value of 0.01. Conversely, when  $\alpha = 0.05$ , there is no significant association between the role of the sanitarian and the use of health protocols in the contemporary market, as indicated by the  $p$  value of 0.63. Some suggestions that researchers would like to convey are implementing the COVID-19 health protocol as recommended by the government at the market, such as always checking your body condition before going to the market, maintaining personal

hygiene, wearing a mask, and keeping your distance from visitors. Always update information regarding conditions and situations during the pandemic, which can be obtained easily either through social media, news broadcasts on television, or other media. Always remind visitors who do not comply with health protocols that the transmission of the COVID-19 virus must be prevented not only in one direction but by working together for the common good. Always maintain good communication and cooperation between traders and managers, health workers, or officials to prevent wider transmission of the virus. Maintain good coordination <sup>18</sup> communication with market managers so as to maximize the prevention of COVID-19 transmission in the market. Providing more equitable interventions, such as education and training, as an effort to empower traders so that the information received by traders is maximized. Working with various partnerships to create a pandemic-ready market. It is necessary to carry out further observations or research on whether traditional and modern markets will continue to implement health protocols after the pandemic ends.

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ORIGINALITY REPORT

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# 13%

SIMILARITY INDEX

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