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Relationship the Availability of Infrastructure and the Behavior of Preventing Covid-19 in Indonesia

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ABSTRACT

The availability of infrastructure and the use of its in public have become the norm around the world since the outbreak of the 2019 coronavirus (COVID-19) pandemic. This study aims to determine the relationship between the availability of infrastructure and behavior of preventing Covid-19. Quantitative research with descriptive correlation design using a cross sectional approach. The independent variable in this study is the availability of infrastructure with the dependent variable being the Covid-19 prevention behavior. Data collection was carried out directly through the online method using Kobotoolbox. The sample in this study were residents of the community around the student's residence who were able to read and write and were willing to become respondents with a total of 2,700 respondents. The data obtained were tested for normality first by looking at the significance value on the results of the Kolmogorof Smirnov data normality test. Furthermore, the bivariate test was carried out using the Spearman Rank test. Bivariate test using Spearman's Rank Test between the variables of access to infrastructure and prevention behavior obtained the results of 0.272 with a p value of 0.000 (p value <0.05), with a correlation coefficient that is significant. very strong/perfect. There is a relationship between the availability of infrastructure and Covid-19 prevention behavior. The public must always pay attention to health protocols as an effort to prevent Covid-19.

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INTRODUCTION

High transmission of Covid-19 is still affecting most countries and has paralyzed the world, causing the World Health Organization to declare the Covid-19 virus a pandemic in March 2020 (Zhou et al., 2020). Various challenges emerged, such as intense pressure on the global health system, social isolation and psychological trauma and unprecedented effects. The COVID-19 pandemic shocked the world when the incidence of confirmed cases and deaths increased beyond

expectations. By the end of 2021, COVID-19 had infected more than 300 million people and caused more than 5 million confirmed deaths worldwide (Ministry of Health, 2021). As of 30 June 2022, there have been 544,324,069 confirmed cases of COVID-19, including 6,332,963 deaths reported to the World Health Organization (WHO) (Ministry of Health, 2021).

The spread of COVID-19 can be through media that are around humans, as well as spread through droplets originating from coughs and sneezes. Touch by hand to mouth and nose and not washing hands can result in a potential risk of contracting disease (Yu et al., 2020). Many prevention strategies have been implemented around the world to control the COVID-19 pandemic, including the COVID-19 vaccine (World Health Organization (WHO), 2020). As a new infectious disease, COVID-19 has rapidly spread acute respiratory syndrome in humans (Zhou et al., 2020).

The government must maintain a high level of vigilance and change the handling of relatively fixed action procedures into an adaptive mode ([OECD] Organisation for Economic Cooperation and Development, 2020). Reducing cases of the spread of COVID-19 can be done with non-pharmaceutical measures, including individual screening, tracing transmission from closest people and implementing social restrictions. Previous research in Korea found government instructions to prevent local transmission by practicing good personal hygiene such as wearing masks, washing hands, and not participating in gatherings (Kim et al., 2020)

This has created the need for references to formulate adaptive countermeasures (Huang et al., 2021). Therefore, effective assessment of a community's vulnerability to COVID-19 is critical in designing adaptive responses that support the WHO public health axiom of "detect, protect and treat".

Vulnerability is seen as the vulnerability to harm to people and assets if exposed to a hazard event resulting from the impact of COVID-19. Supporting facilities increase the sense of security and calm for the community when facing COVID-19. The results of previous studies stated that the availability of facilities and means was significantly related to the behavior of preventing COVID-19 (Sari & Budiono, 2021) (Wahyuni et al., 2021).

Handwashing has always been one of most effective ways of keeping diseases at bay. It is a simple act that pays in dividends when it comes to keeping ourselves healthy and safe. Handwashing is also one of the key cornerstones of COVID-19 prevention. Now more than ever as we embrace the new normal and live with COVID-19, hand hygiene needs to become an integral part of our daily routine and our lives, as we live through this pandemic, and beyond, to protect us from diseases. Promoting hand hygiene at all levels of health care is also critical. Hand hygiene, a very simple action, is well accepted to be one of the primary modes of reducing health care-associated infection and of enhancing patient safety (World Health Organization (WHO), 2020.). This study aims to determine the relationship between the availability of infrastructure and the behavior of Covid-19 prevention.

RESEARCH METHOD

This research is a quantitative research using a correlation descriptive research design using a cross sectional approach. Correlation descriptive research design aims to describe the variables and determine the relationship between the variables studied. The variables in this study consist of the independent variable (infrastructure) and the dependent variable (preventive behavior). Research data collection was carried out directly via the online method using Kobotoolbox by semester 5 students of the Faculty of Health, Dian Nuswantoro University Semarang Academic Year 2021/2022.

The questionnaire regarding the availability of infrastructure consisted of 11 question items, while the questionnaire regarding preventive behavior consisted of 10 question items. The sample in the study were community members around the student's residence who were able to read and write and were willing to be respondents with a total of 2,700 respondents. The collected data will

be presented univariately and bivariately. The data obtained was tested for normality first by looking at the significance value in the results of the Kolmogorof Smirnov data normality test because the total data was <100.

If the data is normally distributed, the relationship test between variables is continued using the Chi-Square test, whereas if the data is not normally distributed, the bivariate test is performed using the Rank Spearman test. This study uses health research ethics and has passed an ethical test from the Health Research Ethics Committee, Faculty of Health, Dian Nuswantoro University with the title "Community Behavioral Diagnostics of Covid-19 in Indonesia" number 272/EA/KEPK-Fkes-UDINUS/VI/2022 on June 16, 2022.

RESULTS AND DISCUSSIONS

Access to prevention infrastructure is the ability of respondents to access, own, or obtain everything needed in implementing preventive behavior against covid-19. The infrastructure in this study included face masks, hand sanitizers, places to wash hands, information media about Covid-19 and health care facilities during the Covid-19 pandemic. Univariate test for access to Covid-19 prevention infrastructure facilities can be seen in figure 1.

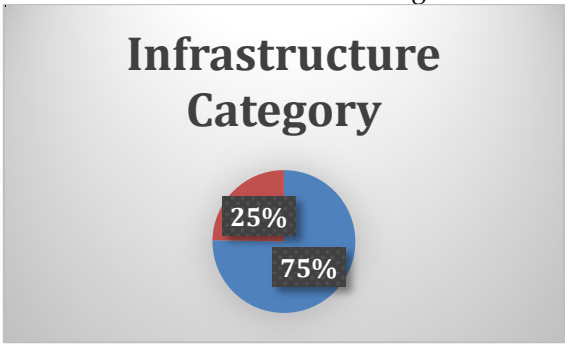

Figure 1. Univariate Test Result Diagram for Access to Covid-19 Prevention Infrastructure Facilities

Figure 1. shows that the majority of respondents (75%) have easy access to infrastructure for preventing Covid-19. The infrastructure that is easiest for respondents to do in an effort to prevent Covid-19 is the convenience of buying face masks around their residence. Infrastructure is a factor supporting success in implementing the Covid-19 Prevention Protocol which includes the availability, adequacy and appropriateness of information signs, facilities and transportation to support the health protocol in an effort to prevent Covid-19. Adequate infrastructure can support individual behavior to become more obedient to a policy (Yuliyanti et al., 2021). Face masks, hand sanitizers, places to wash hands, information media about Covid-19 and health service points during the Covid-19 pandemic are facilities that must be available in implementing health protocols during the Covid-19 pandemic (Sánchez-Arenas et al., 2021).

Several factors influence the behavior of preventing the implementation of the Covid-19 health protocol including predisposing factors (predisposing factors) which include knowledge, attitudes, beliefs and values, enabling factors (enabling factors) which include the physical environment, availability or unwillingness of facilities health facilities or facilities as well as reinforcing factors which include the attitude and behavior of health workers or other officers who are a retention group of community behavior (C. Herawati et al., 2021). Prevention behavior by respondents in this study can be seen in Figure 2.

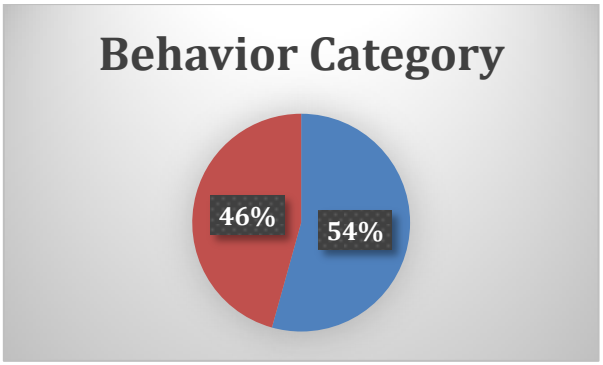

Figure 2. Univariate Test Result Diagram for Covid-19 Prevention Behavior

Figure 2. shows that the majority of respondents (54%) often carry out Covid-19 prevention behaviors such as using masks and hand sanitizers; frequent hand washing; carry out social distancing both to family and friends; reduce touching the face area; cleaning frequently touched objects; and reducing the interaction of eating outside the home. The behavior for preventing Covid-19 that is often carried out by respondents is the behavior of wearing a mask (40%), while the behavior that is difficult to do is reducing the interaction of eating outside the home (6.6%).

Research by Keshtkar-Jahromi et al. (2020) stated that the use of masks and signs of physical distancing are facilities that must be provided in implementing health protocols as an effort to prevent the transmission of Covid-19 disease because the transmission of the Covid-19 virus is very fast and the high risk of each individual being infected without symptoms, especially the use of places -public places so this behavior is very easy and often done. This is also supported by the research of Shereen et al., (2020) which states that the Covid-19 virus can be transmitted from individual to other individuals through infected individuals, so it is important to apply the behavior of keeping a minimum distance of 1 meter between people in order to reduce the transmission rate of Covid-19.

Table 1. Data Normality Test for Infrastructure Variables

	Statistic	df	Sig.
Kolmogorov-Smirnov	.170	2700	0.000
Shapiro Wilk	.859	2700	0.000

a. Lilliefors Significance Correction

Table 1 shows that the variable data for infrastructure facilities are not normally distributed because the sig value in the Kolmogorov Smirnov statistical test p value <0.005. The statistical test results from the data normality test used the results of the Kolmogorov Smirnov analysis because the data totaled 2700 (total data > 50) (L. Herawati, 2016).

Because the data were not normally distributed, a bivariate test between variables was performed using the Spearman's Rank test (Nuryadi et al., 2017).

Table 2. Correlation Test of Access to Infrastructure Variables with Preventive Behavior

			Infrastructure	Behavior
Spearman's rho	Infrastructure	Correlation Coeffisient	1.000	.272**
		Sig (2 tailed)		.000
		N	2700	2700
	Behavior	Correlation Coeffisient	.272**	1.000
		Sig (2 tailed)	.000	
		N	2700	2700

**Correlation is significant at the 0.01 level (2-tailed)

Table 2 shows the results of the bivariate test to see the correlation coefficient using the Spearman Rank Test between the variable access to infrastructure and prevention behavior, the result is 0.272 with a p value of 0.000 (p value <0.05). This shows that there is a significant correlation between access to infrastructure and prevention behavior variables, with a very strong/perfect correlation coefficient.

The results of this study are in line with the results of a study conducted by Agustina (2021) which found that the factors associated with the behavior of preventing COVID-19 among students at the Al-Asy'ariyyah Islamic boarding school Kalibeber, Wonosobo Regency with a total of 353 respondents were educational level (p value = 0.000), level of knowledge (p value = 0.000), perceived seriousness (p value = 0.026), perceived benefits (p value = 0.000), perceived obstacles (p value = 0.000), support from teachers and caregivers (p value =0.000), friend support (p value=0.000), Islamic boarding school policies (=0.000), access to information (p value=0.000), and availability of infrastructure (p value=0.026). The Risk Prevalence (RP) value in the variable availability of infrastructure is 1.295, which means that respondents with good availability of facilities and infrastructure will have a 1.295 times greater likelihood of implementing COVID-19 prevention behavior than respondents with poor availability of facilities and infrastructure.

Fransiska et al (2021) also found similar research results after collecting data on 196 general public in Payakumbuh City. The results showed that there was a relationship between the availability of infrastructure and family support for Covid-19 prevention behavior (p value = 0.001 <0.005). This research is also in line with the results of research conducted by Herawati, (2016) on 72 employees at PT.X which showed that there was a significant relationship between attitude (p value 0.023 < 0.005) and infrastructure (p value 0.034 < 0.005) with efforts to prevent and control Covid-19. The results of this study are in line with the basic theory developed by Lawrence Green (1991) in Notoatmodjo (2007) which states that a person's or community's health behavior is influenced by supporting factors such as the availability of health facilities and infrastructure.

The results of this study are not in line with previous research which stated that there was no relationship between facilities and infrastructure and compliance with the PSBB policy as an effort to prevent and control Covid-19 with a p value of 0.431 > 0.005 (Wiranti et al., 2020).

The results of the study (Wiranti et al., 2020) are also in line with the results of research conducted by (Amsal, 2020) which states that the habit of washing hands with water and soap will actually risk causing skin disorders. Behavior of washing hands using soap also has a negative effect. As hygiene recommendations develop during the COVID-19 pandemic and community members adopt changing practices, dermatologists are likely to see an increase in adverse skin reactions due to prolonged exposure to irritants and widespread use of antimicrobials. Frequent hand washing requires prolonged exposure to water and other chemical or physical agents, which can cause many pathophysiological changes, such as degradation of the epidermal barrier, keratinocyte damage, subsequent release of proinflammatory cytokines, activation of the skin immune system, which delayed-type hypersensitivity reactions. Adverse dermatological effects, such as excessive dryness of the skin or even contact dermatitis (particularly the irritant subtype and, to a lesser degree, the allergic subtype), may occur, especially in people with a history of atopic dermatitis.

Both differences in the results of this study are due to differences in location, metode, number and characteristics of respondents. In the research (Wiranti et al., 2020), the total number of respondents who became the research sample was 285 respondents using the direct interview method in the field. In this study, the number of respondents was 2,700 consisting of the general public spread throughout Indonesia with online data collection method. Whereas in the research conducted (Amsal, 2020) the data collection method used secondary data on the results of the Health Demographic Survey from 44 countries which contains numbers of population living in

households using an improved water source, population living in households with basic water service, population living in households with an improved sanitation facility, population with a place for handwashing was observed, population living in households with a basic handwashing facility with soap and water available, population with electricity, households possessing a television, households possessing a mobile telephone, Households with only members age 65+.

Availability of infrastructure to support efforts to prevent and control Covid-19 requires adequate facilities and infrastructure, such as a place to wash hands using soap and running water, tools to check body temperature before entering public areas of health facilities that provide free Covid-19 vaccines, PCR swab services and antigens, as well as the availability of medicines to support the recovery of Covid-19 patients.

CONCLUSION

There is a relationship between the availability of infrastructure and the behavior of Covid-19 prevention. Research on the availability of infrastructure and its relationship with regard to Covid-19 prevention behavior will greatly support efforts to reduce Covid-19 cases so that the government in general and health service facilities in particular can find out things that support efforts to reduce cases in terms of infrastructure. The government can further increase the availability of access to infrastructure so that the goal of reducing the number of Covid-19 cases can be achieved more quickly. The weakness in this study is that data collection is done online so that the diversity of the characteristics of the respondents cannot be controlled.

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