Mask-Wearing Behavior towards COVID-19 Prevention

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A B S T R A C T

COVID-19 is an infectious disease caused by a coronavirus that occurs in the digitalization era and has become a global pandemic that can attack various age groups and hinder various types of activities. This study was to analyze the relationship between the behavior of wearing masks and the prevention of COVID-19. This study was a quantitative correlation with a cross-sectional design approach. 58 were applied and selected using accidental sampling. Data were collected using a questionnaire and analyzed using the chi-square and logistic regression. The results showed that knowledge (p=0.003), attitude (p=0.and 001), duration of eating at food stalls (p=0.021), personal protective equipment (p=0.041), health checks (p=0.041), behavior using masks (p=0.003) associated with the prevention of COVID-19, and of the four variables the most related is knowledge with a value of Exp (B)=11.466, p=0.033. The conclusion was obtained that the behavior of using masks is related to the prevention of COVID-19. It is hoped that the use of masks by health workers and the public in a disciplined manner during activities in public facilities or crowded places must be followed by other actions such as maintaining distance in crowded places and diligently washing hands with antiseptic soap to reduce the rate of spread and prevent transmission of the deadly virus.

A B S T R A K

COVID-19 merupakan penyakit menular yang disebabkan oleh virus corona yang terjadi di era digitalisasi dan telah menjadi pandemi global yang dapat menyerang berbagai kelompok umur dan menghambat berbagai jenis aktivitas. Penelitian ini untuk menganalisis hubungan antara perilaku memakai masker dengan pencegahan COVID-19. Penelitian ini bersifat kuantitatif korelasional dengan pendekatan desain cross sectional. 58 diterapkan dan dipilih menggunakan sampling aksidental. Data dikumpulkan dengan menggunakan kuesioner dan dianalisis menggunakan chi-square dan regresi logistik. Hasil penelitian menunjukkan pengetahuan (p=0.003), sikap (p=0.dan 001), lama makan di warung makan (p=0.021), alat pelindung diri (p=0.041), pemeriksaan kesehatan (p=0.041), perilaku menggunakan masker (p=0,003) berhubungan dengan pencegahan COVID-19, dan dari keempat variabel yang paling berhubungan adalah pengetahuan dengan nilai Exp (B) = 11,466, p = 0,033. Didapatkan kesimpulan bahwa perilaku penggunaan masker berhubungan dengan pencegahan COVID-19. Diharapkan penggunaan masker oleh tenaga kesehatan dan masyarakat secara disiplin saat beraktivitas di fasilitas umum atau tempat keramaian harus diikuti dengan tindakan lain seperti menjaga jarak di tempat keramaian dan rajin mencuci tangan dengan sabun antiseptik sehingga dapat mengurangi laju penyebaran dan mencegah penularan virus mematikan tersebut.

INTRODUCTION

COVID-19 is an infectious disease that attacks various ages, especially the age group of children, adults, and the elderly in various countries in the world including Indonesia. The high number of cases that continue to increase every day has an impact on the life sector which has led to the implementation of health protocols such as wearing masks, maintaining distance, and washing hands with antiseptic soap. Based on the World Health Organization, this COVID-19 disease was discovered at the end of December 2019 in the city of Wuhan, China until reports of deaths from the coronavirus were found (Cowling et al., 2020). COVID-19 has spread rapidly around the world, as of 6 November 2020, there have been a total of 48,196,862 cases, with a total of 1,226,813 deaths. Since there are currently approved vaccines and several treatments that have proven effective for COVID-19, the best method of controlling the virus is the adoption of primary prevention behaviors and measures such as physical distancing, wearing masks when in crowded places, and frequent hand washing (Guidry et al., 2020).

Based on the report from the COVID-19 handling task force of the Ministry of Health of the Republic of Indonesia on May 22, 2021, Indonesia showed a large number of positive cases of 1,769.40, 1,629,495 recovered and 49,205 confirmed deaths due to transmission of the disease, so a prevention and control model is needed. Based on current evidence, the transmission of the corona-19 virus can occur in direct contact with an infected person. At present, the public's response is to be directly involved in preventing the spread of COVID-19 by following the government's recommendation to implement health protocols that are not optimal, especially wearing masks when leaving the house, gathering and eating together (Lazarus et al., 2021).

The same thing also happened in the South Sulawesi region, namely Makale, Tana Toraja Regency. Based on the results of an interview with the COVID-19 Task Force Team for the area, he said that even though there had been a program to prevent the spread of COVID-19, such as distributing free masks, wearing masks when leaving the house, and giving the advice to wash hands and avoid crowds, there were still people who do not heed the appeal as there are still people who do not wear masks. A comprehensive measure to prevent and limit the spread of COVID-19 is the use of masks (Laine, Cotton, & Moyer, 2021). However, the use of masks alone is not effective in having an impact on primary and secondary prevention. Because of this, it is also necessary to adopt healthy behaviors to suppress the spread of COVID-19, such as adherence to using masks to prevent the spread of the Corona-19 virus from person to person.

Based on these problems, it is hoped that there will be action with a new model in urging the public to follow the given mask usage regulations. Social media can be a means of communication and promotion of alternative programs to provide information to the public as a measure to prevent the transmission of COVID-19 (Abolfotouh, Almutairi, Banimustafa, Hagras, & Jeraisy, 2021). The study of knowledge, attitudes, and actions toward communicable diseases can gather information about what a given population knows, believes, and does and helps predict outcomes. In addition, this research is important because readiness to fight infectious diseases such as COVID-19 begins with adequate knowledge, a positive attitude, and safe practices. On the contrary, it is believed that inadequate knowledge, negative attitudes, and unsafe actions against COVID-19 lead to unnecessary chaos that facilitates the rapid spread of infection, thereby complicating efforts to prevent the spread of the disease especially not using masks. Data on knowledge of attitudes and actions regarding the prevention of COVID-19 in the community is still lacking. At a critical time when these cases increase, it is mandatory to carry out such research to understand public awareness and preparedness to fight and suppress the spread of the coronavirus, such as wearing a mask at a minimum. Therefore, this study aims to analyze the relationship between the behavior of using masks and the prevention of COVID-19.

METHODS

The study was analytic with a cross-sectional approach. This study involved a sample of 58 productive age people. Sampling was carried out by accidental sampling in Makale, Tana Toraja Regency with research questionnaire guidelines and data processing and analysis using the chi-square test and logistic regression. The results of data analysis are presented in the form of tables accompanied by explanations.

RESULTS AND DISCUSSION

Table 1.
Distribution of Respondent Characteristics

Variable	n	%
Gander		
Male	7	12,1
Female	51	87,9
Total	58	100,0
Aged group (years)		
≤ 21-24	9	15,5
25-28	30	51,7
29-32	5	8,6
33-36	3	5,2
37-40	5	8,6
41-44	2	3,4
45-48	2	3,4
≥ 49	2	3,4
Total	58	100,0
Education level		
Primary school	10	17,2
Junior high school	34	58,6
Senior high school	10	17,2
Higher education	4	6,9
Total	58	100,0
Employment		
Not working	10	17,2
Private employee	7	12,1
Motocycle taxi dirver	15	25,9
Driver	11	19,0
Trader	8	13,8
Civil officer	7	12,1
Total	58	100,0

Table 1 shows that of the 58 samples, the majority was female (87.9%), the highest in the 25-28 year age group was 51.7% and the lowest in the 41-44, and 45-48 age groups. ≥ 49 years each with 3.4%, the highest education level was the

junior high school with 58.6% and the lowest with higher education with 6.9%, and the highest type of work was motorcycle taxi drivers with 25.9% and the lowest were private employees and civil servants respectively each by 12.1%.

Table 2.
The Relationship between Mask-Wearing Behavior and COVID-19 Prevention

Variable	COVID-19 Prevention				Total	p-value
	Are not conducted		Conducted			
	n	%	n	%		
Knowledge						
Less	30	76,9	9	23,1	39	0,003
Good	7	36,8	12	63,2	19	
Behavior						
Slow response	32	76,2	10	23,8	42	0,001
Fast response	5	31,3	11	68,8	16	
Duration of eating at food stalls						
≥ 1 hour	24	77,4	7	22,6	31	0,021
< 1 hour	13	48,1	14	51,9	27	
Personal protective equipment						
Tidak Menggunakan	20	54,1	17	45,9	37	0,041
Menggunakan	17	81,0	4	19,0	21	
Medical examination						
Never	20	54,1	17	45,9	37	0,041
Ever	17	81,0	4	19,0	21	
Mask Wearing Behavior						
Do not use	17	48,6	18	51,4	35	0,003
Use	20	87,0	3	13,0	23	

Table 2 shows that of the 39 samples who had less knowledge about using masks, there were 76.9% did not do COVID-19 prevention and 23.1% did it. Meanwhile, of the 19 samples who had good knowledge about the use of masks, there were 36.8% did not do COVID-19 prevention and 63.2% did it, with a p=0.003. This shows that there is a relationship between knowledge and the prevention of COVID-19. Of the 42 samples that were slow to respond to the use of masks, there were 76.2% of them not doing COVID-19 prevention and 23.8% doing it. Meanwhile, of the 16 samples who had a quick response attitude regarding the use of masks, there were 31.3% of them not doing COVID-19 prevention and 68.8% doing it, with a value of p = 0.001. This shows that there is a relationship between attitude and the prevention of COVID-19. Of the 31 samples that stated that the duration of eating at the food stall was ≥ 1 hour, 77.4% did not carry out COVID-19 prevention related to the use of masks and 22.6% did so. Meanwhile, of the 27 samples that stated that the duration of eating at the food stall was <1 hour regarding the use of masks, 48.1% did not do prevention of COVID-19 and 51.9% did so, with a value of p = 0.021. This shows that there is a long-standing relationship between eating at food stalls and preventing COVID-19. Of the 37 samples who stated that they did not use personal protective equipment, especially use of masks, 54.1% did not do COVID-19 prevention and 45.9% did it. Meanwhile, of the 21 samples who stated that they used personal protective equipment, especially the use of masks, there were 81.0% of them did not do COVID-19 prevention and 19.0% did it, with a value of p = 0.041. This shows that there is a relationship between personal protective equipment and the prevention of COVID-19. Of the 37 samples who stated that they had never had health checks related to the use of masks, 54.1% had not carried out COVID-19 prevention and 45.9% had done so. Meanwhile, of the 21 samples who stated that they had had health checks related to the use of masks, there were 81.0% of them not doing COVID-19 prevention and 19.0% did it, with a value of p = 0.041. This shows that there is a relationship between health checks and the prevention of COVID-19. Of the 35 samples that stated the behavior of not using a mask 48.6% did not do COVID-19 prevention and 51.4% did it. Meanwhile, of the 23 samples that stated the behavior of using a mask 87.0% did not do COVID-19 prevention and 13.0% did it, with a p-value = 0.003. This shows that there is a relationship between the behavior of using masks and the prevention of COVID-19.

Table 3.
Multivariate Analysis of Mask-Wearing Behavior Against COVID-19 Prevention

Variable	B	Sig	Exp (B)	95% C for EXP (B)	
				Lower	Upper
Knowledge	2,439	0,033	11.466	1,216	108,086
Behavior	1,510	0,122	4,527	0,669	30,639
Duration of eating at food stalls	0,543	0,482	1,721	0,379	7,813
Personal protective equipment	-0,675	0,458	0,509	0,086	3,026
Mask Wearing Behavior	-2,870	0,016	0,057	0,006	0,581
Constant	-1,874	0,258	0,154		

Table 3 shows that the knowledge variable is the factor most related to the prevention of COVID-19 with a wald value of 14.142 and a significance of 0.033. Thus knowledge is a factor causing the use of masks to prevent COVID-19 in Makale, Tana Toraja Regency. Three variables give no significant value, namely the attitude variable, the length of time eating at the food stall, and personal protective equipment, these variables are described as follows: attitude, with a value of B=4.527, p=0.122 with a risk assessed Exp(B) = 4.527, this value means that the attitude experienced during the slow response to the use of masks is not significant (p = 0.122) for the prevention of COVID-19 with the magnitude of the risk being times greater than the attitude of the sample who responds quickly. Length of time eating in food stalls with a value of B = 1.721 p = 0.482 with a large risk assessed Exp (B) = 1.721, this value means that the duration of eating in a food stall ≥ 1 hour experienced while not using a mask has a significant effect (p = 0.482) on the prevention of COVID-19 with a magnitude times the risk is greater than the sample frequency of eating in food stalls < 1 hour, personal protective equipment with a value of B = 0.509, p = 0.458 with a risk assessed as Exp (B) = 0.509, this value means that the personal protective equipment experienced while not using a mask has a non-significant effect (p = 0.458) on the prevention of COVID-19 with a risk of 0.108 times greater than those who use masks, the behavior does not using a mask with a value of B = 0.057, p = 0.016 with a large risk assessed Exp (B) = 1.052, this value means that the behavior of using masks experienced during the COVID-19 pandemic has a significant effect (p = 0.016) on preventing covid -19 with a risk greater than the sample using a mask during the COVID-19 pandemic. From these results, it was found that 2 variables (knowledge, and behavior in using masks) were the causes that determined the use of masks in preventing COVID-19. And of the four most related variables is knowledge.

One of the ways to prevent and ward off COVID-19 is compliance and discipline in using masks. The use of masks needs to be known and understood as a means of preventing COVID-19 to prevent transmission of the COVID-19 virus. Respondent's knowledge of preventing COVID-19 by complying with the use of masks has an important role in anticipating the repeated spread of the virus. Based on the results of the study, it was found that some respondents had very little knowledge regarding COVID-19 starting with the definition of COVID-19 disease, its causes, symptoms and signs, ways of transmission, Covid-risk groups, prevention, and treatment. This situation occurs due to the lack of information about the threat of COVID-19 received by the community so people are indifferent and do not trust the information because of the large amount of hoax news. Knowledge of using masks can contribute to reducing the risk of transmission of the COVID-19 virus because the virus is transmitted through direct contact with positive sufferers of COVID-19. Suggestions for implementing health protocols, especially the use of masks at every meeting or other activity that involves many people or for traveling to crowded places that are considered to be attended by many people (Pratama & Hidayat, 2020).

Health protocols that regulate relationships with direct contact with people such as wearing a mask when leaving the house, not talking at close range, washing hands diligently, and carrying a hand sanitizer when leaving the house. This research is in line with the research of Zhong et al. (2020) in China shows that respondents who have low knowledge regarding the use of masks have an impact on preventing COVID-19 with a value of OR=0.75-0.90, p=0.001<0.05.

This research is also followed by AlRasheed et al. (2021) in Saudi Arabia which revealed that overall 98.6% of workers have a positive attitude toward safety and security by implementing a minimal health protocol using masks to prevent COVID-19. This is also in line with research that has been conducted in Indonesia in 34 provinces by Yanti et al. (2020) found that 70.7% of respondents have a good attitude regarding the prevention of COVID-19.

In our study, the positive attitude and high level of confidence of participants may have built on the Government of Indonesia's previous experience in responding to Avian Influenza in 2012, which helped the country restore better public health warning systems and infection control policies. Thus, the experience gathered from fighting Avian Influenza places Indonesia on a high level of awareness and readiness to take instant and drastic action to curb the spread of COVID-19 (Algaissi, Khalaf, Hassanain, & Hashem, 2020).

Policymakers mainly use normative measures to reduce an individual's risk of exposure to COVID-19 (Ramanathan et al., 2021). This is also in line with the results of Oliva and Favato (2021) in Italy showing the risk of exposure to COVID-19 by eating out in cases of long visit duration. To what extent this risk can be mitigated in a dining center with a high prevalence, by using a mask and maintaining hand hygiene in a crowded dining environment, it is still uncertain how to prevent COVID-19 (12). The number of people attending food stalls or restaurants and their proximity to and within dining facilities may be contributing factors to the lack of protective effect for mask use.

Since the global COVID-19 pandemic, many experts have advised against the use of masks by the public because they feel that the potential risks, such as self-contamination, can outweigh the potential benefits, and that the use of masks, in general, will lead to a depletion of the supply of masks needed by health workers. Experts then changed their thinking about the benefits of wearing masks to protect and prevent others from being infected with COVID-19. However, self-protection is the main reason for preventing and controlling COVID-19 infection it is then recommended for both health workers and the public to wear masks when leaving the house, especially in public service places that may experience respiratory infections due to the virus (Garcia, 2020).

The use of masks is recommended in crowded places, including in crowded places. However, the evidence for the effectiveness of masks during crowds varies (Benkouiten, Brouqui, & Gautret, 2014). While the study by Barasheed, Alfelali, Mushta, and Bokhary (2016) states that the use of face masks is generally effective against respiratory infections which are clinically proven relative risk RR = 0.89, 95% CI: 0.84-0.94, the endpoints of the studies vary widely. Our finding of an increased risk of respiratory symptoms among mask-wearing individuals also raises questions about the quality of masks or community use of masks. Several user factors can make masks less effective: using the wrong mask; touching the outside then touching the nose; touching the inside of the mask with unwashed hands; prolonged use or reuse of masks designed as single-use; or even sharing masks. Masks are part of personal protective equipment from exposure to the COVID-19 virus and are one of the effective media for preventing the transmission and spread of COVID-19 (Simmerman et al., 2011).

One study showed that influenza vaccination did not reduce the risk of respiratory symptoms in residents,

although two other studies demonstrated its effectiveness (Al-Ansari et al., 2021). This requires further research. It has also raised concerns about reliance on newly developed COVID-19 vaccinations to control the large-scale spread of the disease. Until a safe and effective vaccine is available, health workers and the public remain vulnerable to COVID-19. Even if you are at high risk of exposure, be properly protected and not contract the infection with the discipline of wearing a mask (Liu et al., 2020).

Our current study is conducting research on people's behavior related to the COVID-19 pandemic, and we observe a high rate of adoption of the preventive behavior of wearing masks. This potentially risky behavior is related to the male gender, type of work, and poor knowledge of COVID-19. as suggested by findings from previous studies regarding age and gender patterns of risk-taking behavior, males and late adolescents are more likely to engage in risk-taking behavior. In line with previous findings, we found a significant association between work type and potentially harmful actions against COVID-19 in this study (Ahmed et al., 2020).

During an outbreak of the infectious COVID-19 disease, primary prevention is the strongest and most effective line of defense for reducing health risks in the absence of an effective treatment or vaccine. Although direct evidence on the effectiveness of specific COVID-19 precautions is lacking, largely because of the new disease, five behavioral measures were identified; washing hands regularly, wearing masks, avoiding touching the face, covering when sneezing or coughing, and household disinfectants. Five other potential behavioral measures were also identified for potential behavioral risk associated with transmission of the COVID-19 disease. Awareness behavioral measures regarding sneezing and coughing etiquette and avoiding direct contact are the most comfortable to implement because they require little or nothing. However, it should be noted that these measures are perhaps the most challenging in terms of compliance and enforceability, as they depend on the frequent and natural modification of human behavior whose modification will require awareness and practice. Cultural patterns can be linked to behavioral intentions as well as related knowledge, awareness, and understanding of the risks of COVID-19 (Yang Chan et al., 2020). This research is an intervention based on the theory that increasing people's knowledge and awareness of certain health risks will result in positive behavior changes (Andrews & Foulkes, 2020).

CONCLUSIONS AND SUGGESTIONS

The findings in this study were that the behavior of using masks had a positive impact on preventing COVID-19. It is hoped that there will be cooperation in preventing COVID-19 by carrying out outreach efforts to provide education on socio-cultural health literacy related to wearing masks.

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