

Conference Paper

Factors Affecting Community Compliance in Preventing COVID-19 Based on the Health Belief Model

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Abstract.

COVID-19 cases in Indonesia are increasing. This has been caused by several factors, such as the lack of compliance and the negative perception that COVID-19 is not a dangerous disease. This study used the health belief model to analyze the factors influencing community compliance in preventing COVID-19. This was a descriptive quantitative study with a cross-sectional approach. The participants included 130 residents of Saronggi District, Sumenep Regency. Data were collected through a questionnaire about compliance and perceptions based on the health belief model. Perceptions of vulnerability, seriousness, benefits, barriers and actions were examined, along with their association with COVID-19 prevention compliance. The data were analyzed using an ordinal regression test. Compliance in preventing COVID-19 was measured as obedient in 75 people (57.69%), quite obedient in 17 people (13.07%), and not obedient in 38 people (29.24%). Meanwhile, based on the findings, the dominant factors that influenced compliance were perceived benefits ($p = 0.001$), perceived barriers ($p = 0.023$), and perceptions of action ($p = 0.003$). Public education about the dangers and prevention of COVID-19 needs to be improved by involving community leaders as role models so that community compliance will increase.

Keywords: perception, compliance, health belief model, COVID-19

1. INTRODUCTION

Since December 2019, precisely at the end of the year, a disease outbreak appeared in China's Wuhan area. The recently emerged SARS-CoV-2 wreaked havoc in China and caused a pandemic situation in populations worldwide, leading to an outbreak of the disease that has not been controlled to date. It even has a significant effect on the international economy and health [1-3]. Covid-19 is still a health problem since the number of positive cases of Covid-19 increases day by day. The news that appears tends to be scary. News presented with clickbait titles. So this creates fear and distrust of the public regarding Covid-19 information.

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Based on the World Health Organization (World Health Organization) declared Covid-19 as a global pandemic. To date, more than 30.6 million cases of Covid-19 and 950.000 deaths. On September 25, 2020, the number of confirmed cases had reached 32.029.704 million, and confirmed deaths had reached 979.212 [4]. Meanwhile, the number of cases in Indonesia on September 25, 2020, confirmed positive for Covid-19 reached 266.845 and confirmed deaths of 10.218 [5]. Based on data from the Sumenep District Health Office, on January 12, 2021, 1.421 positive Covid-19 cases were confirmed, and 80 deaths were confirmed, while 1.233 patients had recovered [6]. Meanwhile, according to data from the Saronggi District Health Center, which consists of Dusun Baratan, 96 confirmed positive Covid-19 cases and ten confirmed deaths, while 84 patients who have recovered have been confirmed.

Several factors are causing the increasing number of positive cases of Covid-19 in Sumenep due to the low level of public confidence in the existence of Covid-19 [4]. Community compliance is also related to their perception. That consists of perceived barriers to self-awareness of the dangers of Covid-19, a complex environment to change, the habit of using masks, keeping a distance, washing hands, and doing a health check to the doctor is expensive. According to [2], the obstacle is a perception about everything that becomes an obstacle in implementing and adopting a new behavior.

Based on observation by researchers in October 2020, people don't believe in Covid-19 because the symptoms are the same as the common cold. Thus, people carry out activities like regular days, for example, leaving the house without wearing masks, even the facilities for washing hands are still rarely seen in public. People still don't get used to washing their hands after every activity because they are not used to it and are troublesome. Many people do not keep their distance when in public places, the cultural factor of the Sumenep community, which is religiously attached to believe that everything comes from God. People trust and obey clerics or community leaders more than government regulations or health workers regarding health protocol appeals. So there needs to be good cooperation and socialization by scholars and community leaders regarding the dangers of Covid-19 to change existing statements.

The failure to prevent Covid-19 is still a significant problem in Indonesia. This failure needs to be identified as the cause. The HBM has been used to explain and predict individual changes in health behaviors and may also be important in understanding preventive behaviors in the COVID-19. According to the Health Belief Model (HBM) theory, individuals take health actions to prevent or take treatment and improve health status. That is influenced by factors, such as susceptibility to disease, perceived severity or seriousness of the illness, perceived benefits, cost or barriers, felt, and cues for action.

The health belief model is a concept that conveys the reasons for individuals to be willing or unwilling to perform healthy behavior [7, 8].

Research results [9] adherence to behavioral precautions (e.g., social distancing) can primarily affect the effectiveness of measures in avoiding the spread of Covid-19. The application of the health belief model to COVID-19 prevention behavior correlated with four HBM factors (i.e., perceived severity, perceived benefit, perceived barrier, and cues to action) and two general beliefs (i.e., social cynicism and rewards for adoption) at different levels.

This study aims to analyze factors that influence adherence to Covid-19 prevention using a health belief model approach. Although there have been several similar studies, specifically the HBM factors that work best may differ in each behavior and according to the socio-cultural conditions of the community.

2. METHODS

2.1. Study Design and Ethical Approval

This study was designed as a cross-sectional observation analytical study. It was approved by the research and ethical committee of the Medical Faculty, University of Muhammadiyah Malang (No.E.5.a/097/KEPK-UMM/V/2021). The independent variable in this study was a perception based on the health belief model theory that consists of perceived vulnerability, perceived seriousness, perceived benefit, perceived barrier, and perception of action. In contrast, the dependent variable is covid-19 prevention compliance.

2.2. Participants

The study was conducted in January – Juli 2021 at Saronggi District-Sumenep, East Java, Indonesia. The population in this study were all residents of Saronggi District, Sumenep Regency. The samples were collected based on an accidental sampling technique, with as many as 130 respondents. In this study, the inclusion criteria were patients over 18 years old and cooperative. All participants signed an informed consent form and were assured that their name and address would remain confidential.

2.3. Instrument

The health belief model questionnaire using the Rosenstock questionnaire consists of five aspects of the health belief model, with a closed statement form based on a Likert scale with stratified answer choices, namely strongly agree, agree, neutral, disagree, and disagree. This questionnaire contains 38 questions, namely perceptions of vulnerability, perception of seriousness, perceived benefits, perceived barriers, and perceptions of action. In this study, the researcher also adopted and modified several questions from [10, 11]. The questionnaire scoring system uses the Likert scale method with scores for positive questions 1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly agree. As for the negative questions, the score is 5: strongly disagree, 4: disagree, 3: neutral, 2: agree, 1: strongly agree. The data scale uses an ordinal scale. The scores were categorized as 1). perceived vulnerability (not vulnerable 6-13; moderate 14-21; vulnerable 22-30), 2). perceived seriousness (not seriousness 6-13, moderate 14-21; seriousness 22-30), 3). perceived benefit (benefit 6-13; moderate 14-21; less benefit 22-30), 4) perceived barrier (not barrier 10-19; moderate 20-34; barrier 35-50), 5). perception of action (action 35-50; less action 20-34; not action 10-19). This questionnaire has been tested for validity and reliability with the results of KMO (Kaiser-Meyer Otkin) 0.85, Cronbach alpha 0.73, and 0.86 [9]. Cronbach coefficient for each perception of risk, severity, benefit, and constraint is 0.676, 0.723, 0.789, and 0.747 [11].

The second questionnaire is Covid-19 prevention compliance. That is adherence to health protocols, including wearing masks, washing hands, and social distancing.

2.4. Statistical Analysis

Data were analyzed by the Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics conducted sociodemographic characteristics (mean, standard deviation, frequency, and percentage). An ordinal regression test was utilized to analyze a perception based on the health belief model theory (perceived vulnerability, perceived seriousness, perceived benefit, perceived barrier, and perception of action) toward covid-19 prevention compliance.

3. RESULTS

The total of participants was 130 people. Arrange of age 19 to 60 years ($M = 33,22$; $SD: 10.29$). 41 person of male (31.5 %) and female 89 (68.5 %). Most of the participants

have a level of education senior high school 80 (61.5%). About 128 (98.5%) participants got information about Covid-19 from health workers 50 (38.5%). The majority participant status is not people under monitoring 124 (95.4%) (Table 1). People under monitoring are 1). people who have fever or symptoms of respiratory distress, 2). have a history from abroad or within the country where the area has confirmed coronavirus cases.

TABLE 1: Characteristics of Participants.

No	Karakteristik	Jumlah n (%)
1	Gender Male Female	41 (31.5) 89 (68.5%)
2	Age (years old)	M = 33.22 ; SD= 10.29, minimum=19, maximum=60
3	Level of education Elementary school Junior high school Senior high school Bachelor No Education	8 (6.2%) 16 (12.3%) 80 (61.5%) 25 (19.2%) 1 (0.8%)
4	Job-status Soldier/Police/Government Employees Entrepreneur Private sector employee Health workers Unemployed Others	5 (3.8%) 36 (27.7%) 7 (5.4%) 3 (2.3%) 51 (39.2%) 28 (21.5%)
5	Get information about Covid-19 Ever Not yet	128 (98.5%) 2 (1.5%)
6	Covid-19 information from Newspaper, bulletin Internet Health workers Television	0 (0 %) 34 (26.2%) 50 (38.5%) 46 (35.4%)
7	Screening 'people under monitoring'. Not Yes	124 (95.4%) 6 (4.6%)

The majority of Participants are obedient in Covid-19 prevention around 75 (57.69%) (Table 2). Based on the results of statistical tests (table 3), the dominant factors that influence compliance are perceived benefits (p-value 0.001), perceived barriers (p-value 0.023), and perceptions of action (p-value 0.003).

TABLE 2: Covid-19 Prevention Compliance.

Prevention Compliance	n (%)
Obedient	75 (57.69)
Quite obedient	17 (13.07)
Not obedient	38 (29.24)
Total	130 (100)

4. DISCUSSION

In this study, the majority of respondents felt quite vulnerable. Meanwhile, respondents' compliance in preventing COVID-19 is in the category of non-compliance and sufficient. However, there is no statistically significant effect between the variables of perceived vulnerability and compliance. Likewise, there is no effect between perceived seriousness and adherence to prevention. Some respondents felt that suffering from Covid-19 could be deadly and shorten my life. Suffering from Covid-19 could hinder my daily life,

TABLE 3: Perception Based On The Health Belief Model Theory And Covid-19 Prevention Compliance.

Perception	Prevention Compliance (n, %)			Total	Significance
	Obedient	Quite obedient	Not obedient		
Perceived vulnerability					p-value 0.269
not vulnerable	26 (45.6)	7 (12.3)	24 (42.1)	57 (100)	
moderate	42 (66.7)	8 (12.7)	13 (20.6)	63 (100)	
vulnerable	7 (70)	2 (20)	1 (10)	10 (100)	
Perception of seriousness					p-value 1.81
not seriousness	3 (27.3)	2 (18.2)	6 (54.5)	11 (100)	
moderate	53 (58.2)	12 (13.2)	26 (28.6)	91 (100)	
seriousness	19 (67.9)	3 (10.7)	6 (21.4)	28 (100)	
Perceived benefits					p-value 0.001
benefit	33 (86.8)	0 [(0)]	5 (13.2)	38 (100)	
moderate	31 (52.5)	9 (15.3)	19 (32.2)	59 (100)	
less benefit	11 (33.3)	8 (24.2)	14 (42.4)	33 (100)	
Perceived barriers					p-value 0.023
no barrier	8 (61.5)	2 (15.4)	3 (23.1)	13 (100)	
moderate	58 (65.2)	9 (10.1)	22 (24.7)	89 (100)	
barrier	9 (32.1)	6 (21.4)	13 (46.4)	28 (100)	
Perception of action					p-value 0.003
not action	2 (100)	0 [(0)]	0 [(0)]	2 (100)	
less action	10 (28.6)	6 (17.1)	19 (54.3)	35 (100)	
action	63 (67.7)	11 (11.8)	19 (20.4)	93 (100)	

and suffering from Covid-19 was a severe threat to my health, so I felt that I was pretty serious about a disease compared to feeling it was not severe.

One factor influencing this compliance is age, which was dominated by productive age in this study. According to [12], positive cases of Covid-19 in Indonesia are dominated by people of productive age. Because productive age often contacts outsiders and public places, they are more susceptible to Covid-19. This finding is suitable with research conducted by [13] which also proves that the young/productive population dominates the positive cases of Covid-19. In a study conducted by [14], someone who works has a relatively more significant risk of being exposed to COVID-19 than not working because they tend to be more active outside the home.

People in Baratan village feel vulnerable, and some consider covid-19 to be a severe disease, but not all are obedient in covid prevention. Because they perceive that it is impossible to be infected or believe that they have good immunity, thus they ignore the health protocol. Moreover, people do not believe in covid-19, and their awareness is

low. According to [3], many Madurese people do not wear masks when doing activities outside. Masks are only used when on the road so so that the officers do not fine them. In addition, this is also influenced because their community or religious leaders think that COVID-19 is not a dangerous disease. People also believe that death is predestined by God, even though they adhere to health protocols.

According to Surokim [3], poverty and education have been the main problems in Madura, affecting health literacy abilities. Incredibly as long as it is not directly related to their lives, they usually take it for granted, between believing and not believing. The human development index in Madura, which tends to below, is one of the factors in the difficulty of overcoming social problems, including health problems in the community. In contrast with a study by [2], when someone believes that they have a high risk of getting a disease, they will be better at taking preventive action.

The study results show an influence between perceived benefits, perceived barriers, and perception of action on covid-19 prevention compliance: the more significant the perceived benefits, the more likely the respondent to make efforts to prevent a recurrence. This research is in line with [2], that perception in the HBM theory is believed to determine the possibility of individuals carrying out health behaviors. Individuals who follow health measures consider that the experienced can be severe and believe that the benefits outweigh the costs of actions taken to counter the threat.

A positive perception barrier means that person has knowledge and awareness about the obstacles that will be passed when implementing health protocols. That will affect the higher level of compliance in carrying out the health protocol. Each individual has a different response to obstacles. Individuals who have a positive perception of controlling the situation and overcoming these obstacles will make the individual concerned aware of and understand the situation at hand. So that the individual concerned looks for solutions to overcome these obstacles by seeking more accurate health promotion information and looking for role models who apply health protocols. In addition, it aims to provide higher motivation in implementing health protocols in the future [15].

The majority of respondents have an excellent perception of action. It can be seen in questionnaires that respondents feel it is crucial to wear masks properly, keep social distancing, and wash their hands after activity. Moreover, respondents feel themselves acting on the disease rather than feeling in action. According to (2, 15), the more positive cues to action, the higher the health protocol compliance. So it can conclude that the cue to take action becomes a solid influence to take healthy actions.

5. CONCLUSIONS

Covid-19 has still become a severe health problem, especially in Indonesia. The failure to prevent Covid-19 is a significant problem and needs to be identified as the cause and can be analyzed using the health belief model theory. Therefore, educating the community about the dangers and prevention of covid-19 needs to be improved by involving community leaders as role models to increase community compliance.

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