



# Health Belief Associated with Adherence to Health Protocol in Preventing Coronavirus Diseases on Patients' Family

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## Abstract

**BACKGROUND:** Adherence with health protocols during the Coronavirus disease (COVID-19) pandemic is very important to prevent transmission. However, it is obtained that adherence with health protocols is still not optimal. The hospital environment is an area that is at high risk of transmission.

**AIM:** The purpose of this study is to analyze the relationship between health belief and adherence with the health protocol in the patient's family.

**METHODS:** Quantitative research is correlated with a cross-sectional approach. The sample is the family of patients at the hospital, which was taken with simple random sampling technique as many as 100 people. Research variables include perceived susceptibility, perceived severity, perceived benefits, perceived barrier, self-efficacy, and adherence with health protocols. Data collection was using questionnaire instruments. Data analysis was using Fisher test with a significance level of 95%.

**RESULTS AND DISCUSSION:** Fisher's test results obtained data that there is a relationship between health belief in the dimensions of perceived susceptibility ( $p = 0.007$ ), perceived severity ( $p = 0.027$ ), perceived benefits ( $p = 0.003$ ), perceived barriers ( $p = 0.021$ ), and self-efficacy ( $p = 0.002$ ) with adherence with health protocols in an effort to prevent the transmission of COVID-19. The patient's family will be willing to implement health protocols if they have a high health belief in efforts to prevent the transmission of COVID-19. This health belief includes the belief that COVID-19 disease is easily contagious and serious; adherence will provide benefits for health.

**CONCLUSION:** Health beliefs are significantly related to adherence with health protocols in the prevention of COVID-19 transmission in the patient's family.

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## Introduction

Coronavirus diseases (COVID-19) are still a global problem. The World Health Organization (WHO) data show that the prevalence of COVID-19 cases is still increasing. As of March 2021, the number of confirmed positive COVID-19 has reached more than 118 million cases with the number of deaths more than 2.6 million. The prevalence of COVID-19 in Indonesia is also still increasing. The WHO data as of March 10, 2021, show that the number of positive confirmed cases has reached more than 1.3 million people with more than 37 thousand deaths [1]. The impact of the COVID-19 pandemic is very widespread, not only causing problems in respiratory disorders even resulting in death, but also increasing psychological burden problems in the community [2], [3], [4].

The WHO has issued health protocols for the public as a preventive effort to avoid the transmission of COVID-19 such as the use of masks, hand hygiene, and physical distancing [5]. However, the results showed that public awareness in complying with health protocols such as the use of masks is still very low [6]. This lack of adherence can have an impact on

increasing the spread of COVID-19 in the community. Hospitals are environments that have a risk of spreading COVID-19. This spread can occur from health workers due to direct contact with patients and neglect of health protocols [7]. Not only health workers, all components in the hospital, such as the patient's family, are also at high risk of COVID-19 transmission [8]. So that efforts to prevent the transmission of COVID-19 in the hospital environment become a priority that should receive attention [9], [10].

The Health Belief Model (HBM) is a framework that explains the reasons that predict a person to perform health behaviors. Hbm construct includes perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and self-efficacy [11]. HBM underlies a person to do self-care [12]. HBM is also able to predict one's intention in making behavior changes [13]. In addition, improved health belief will be able to increase one's awareness [14].

Studies on prevention efforts to prevent the transmission of COVID-19 in the community have been conducted. However, there are still not many studies that analyze adherence with health protocols for the families of patients in the hospital environment using

the HBM approach. This study aims to analyze the relationship between health belief and the adherence of the patient's family in undergoing health protocols as an effort to prevent the transmission of COVID-19.

## Methods

The design of the study is correlated with the cross-sectional study approach. The research population is the entire family of patients who are in Mitra Delima Hospital Malang, Indonesia, numbering 400 people. Samples were taken as many as 100 people with simple random sampling techniques. The variables studied refer to the HBM consisting of perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and self-efficacy. In addition, another variable measured is adherence with health protocols. The research instrument uses a HBM questionnaire, consisting of questionnaires on perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and self-efficacy that have been modified by researchers [15]. Statements on the health belief of each dimension consist of eight items of statements with a choice of answers - strongly agree, agree, doubt, disagree, and strongly disagree. While, the adherence questionnaire consists of three questions that include adherence in the use of masks, maintaining physical distance, and diligently washing hands. The scoring results for the variable HBM are further categorized into high confidence and low confidence. Confidence is high if the score is  $\geq$  the median, the confidence is low if the score  $<$  the median. Data analysis was conducted through Fisher test with 95% significance using SPSS for Windows 25 program. The research protocol conducted an ethics test and has been approved by the Health Research Ethics Committee of the College of Health Sciences Kepanjen Malang, Indonesia with the number 176/S.Ket/KEPK/STIKesKPJ/II/2021.

## Results

The results are presented in Table 1 (characteristics of respondents), Table 2 (distribution of frequency of health belief and adherence), and Table 3 (Fisher test results).

Table 1 shows that more than half of respondents were female (58%), basically educated (58%), and half of respondents received information about COVID-19 from the mass media (49%).

Table 2 illustrates that in all dimensions of health belief most families of patients have a low level of

health belief and are entirely non-compliant in carrying out health protocols.

**Table 1: Respondent characteristic**

Characteristic	Frequency (n)	Percentage
Sex		
Male	42	42
Female	58	58
Education		
High	4	4
Moderate	38	38
Basic	58	58
Information Source		
Mass Media	49	49
Village officer	17	17
Internet	13	13
Family	21	21
Total	100	100

Table 3 shows that the entire dimension of health beliefs is significantly correlated with compliance with the running health protocol. P-value results found that self-efficacy has the greatest significance to compliance with health protocols.

**Table 2: Health beliefs and adherence to health protocol (n = 100)**

Variable	Category	Frequency (n)	Percentage
Health beliefs			
Perceived susceptibility	High	17	17
	Low	83	83
Perceived severity	High	15	15
	Low	85	85
Perceived benefits	High	15	15
	Low	85	85
Perceived barriers	High	14	14
	Low	86	86
Self-efficacy	High	13	13
	Low	87	87
Adherence			
Adherence to health protocol	Yes	9	9
	No	91	91

## Discussion

Coronavirus diseases (COVID-19) are highly contagious. Compliance with health protocols is one of the main keys to avoid transmission of this virus. The results of this study found that compliance with health protocols such as the use of masks, maintaining distance, and discipline of hand washing is still very low. This low compliance is associated with low health beliefs owned by the patient's family, such as self-efficacy, perceived benefit, perceived susceptibility, perceived barrier, and perceived severity.

**Table 3: Result of Fisher test**

Variable	Adherence				p-value
	Yes		No		
	n	%	n	%	
Perceived susceptibility	5	29.4	12	70.6	0.007
	4	4.8	79	95.2	
Perceived severity	4	26.7	11	73.3	0.027
	5	5.9	80	94.1	
Perceived benefits	5	33.3	10	66.7	0.003
	4	4.7	81	95.3	
Perceived barriers	4	28.6	10	71.4	0.021
	5	5.8	81	94.2	
Self-efficacy	5	38.5	8	61.5	0.002
	4	4.6	83	95.4	

Self-efficacy is the confidence of the patient's family to be able to behave in a disciplined manner in using masks, keeping distance, and avoiding crowds and washing hands. Low self-efficacy is significantly associated with low compliance. Self-efficacy is influenced by emotional responses. Self-efficacy has a very large role in determining the coping strategy used by a person in dealing with the problems faced. High self-efficacy will cause a person to have an adaptive coping strategy. Coping strategy affects health behavior [16]. Other studies show that self-efficacy is the main predictor of disease prevention behaviors [17]. High self-efficacy is associated with good adherence to health behaviors [18]. High self-efficacy accompanied by good social support will have a positive impact on one's behavior [19]. Efforts to improve self-efficacy can be done by providing education with a health belief approach [20].

Perceived benefits in this study are significantly related to compliance undergoing health protocols. The results found that most of the benefits showed it was still very low. This illustrates that the patient's family does not feel any meaningful benefit to him when they comply in undergoing health protocols. The benefits felt so that patients avoid the transmission of COVID-19 look still very low. So this becomes one of the factors related to the low compliance of the patient's family. Perceived benefits can affect a person's knowledge so this will be beneficial in improving health behaviors [21]. Another study found that perceived benefits will cause a person to make a visit to the health service to address the health problems they experience [22].

Perceived susceptibility describes the vulnerability felt by the patient's family to the possible risk of contracting COVID-19. The results showed that the families of patients were mostly considered to have a low risk of contracting Covid-19. This is one of the factors associated with low compliance in undergoing health protocols. Another study found that perceived susceptibility is influenced by narcissistic traits [23], [24]. Perceived susceptibility is significantly related to disease prevention behavior [25], [26]. The study was also supported by other studies that resulted in perceived susceptibility moderating disease screening behavior [27]. Family history is one of the factors associated with a person's susceptibility to disease [28], [29].

Perceived barriers in this study were also obtained significantly related to compliance with the running of health protocols. Perceived barriers are still very low in the patient's family. This indicates that the patient's family has high barriers to adherence to health protocols such as feeling discomfort when using a mask. This discomfort causes the patient's family to have low compliance. There are many factors that affect the perceived benefit in a person [30]. Lack of knowledge and low awareness are factors that affect the perceived barrier. So to lower the perceived barrier, it is necessary to provide interventions in the form of health education

in order to increase knowledge and awareness [31]. Culture and social environment can also be a perceived barrier for a person [32]. Intervention development programs are needed to lower the perceived barrier [33].

Perceived severity of the patient's family is significantly related to compliance with the health protocol. The patient's family feels that COVID-19 is a serious disease so this can result in their low compliance of. Individuals with low perceived severity will result in low behavior changes. Meanwhile, individuals with high severity perceived result in a high change in behavior. This suggests that psychological responses affect a person's response to behavioral changes [34]. Other studies have also shown that perceived severity affects emotional response [35]. Perceived severity moderates the relationship between consciousness and intention [36]. Age and gender are also affected by perceived severity [37].

Health belief is a very important component in influencing the patient's quality of life, improving health behavior, and disease management. A person who has perceived susceptibility, perceived severity, and high perceived benefits shows a high level of adherence to health behaviors [38].

## Conclusion

Perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and self-efficacy have a significant effect on compliance with health protocols in efforts to prevent the transmission of COVID-19. The practical implication of this study is that health workers can promote health with a health belief approach to be able to improve the compliance of the patient's family in carrying out health protocols, namely, by the discipline of wearing a mask, maintaining a distance of at least 1 m and diligently washing hands.

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