Public Perception in Implementing Health Protocols as Precaution Against COVID-19 On Health Belief Model Theory

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Article Info	ABSTRACT
  Corresponding Author: Meri Susanti, Lecturer of Universitas Islam Sumatera Utara, Indonesia Email: merisusanti7724@gmail.com	Various Efforts Have Been Made to Prevent COVID-19, But They Have Not Made Us Utterly Free From COVID-19 And Can We Live Normally Again as Before the Pandemic? An Integrated Model Is Needed to Improve Public Health Behavior in Preventing COVID-19 Through Increasing Public Awareness, Health Services, and Appropriate Legal Regulations. Analytics uses cross-sectional methods. The quantitative data measuring public health behavior is based on a health belief model questionnaire with a sample of 235 people. Correlation Analysis Between Variables Obtained Correlation Results with A Weak Relationship (R = 0.21-0.40), Namely Perceptions of Vulnerability, Severity, Self-Ability, Instructions for Action, And Knowledge Meanwhile, the perception of benefits and barriers has a moderate correlation (R = 0.41-0.60). The Results of Multivariate Correlation Showed Only Four Variables That Have a Correlation, Namely Perceptions of Obstacles, Benefits, Instructions for Action, And Knowledge. Health Services Through Preventive, Promotive, and Curative Measures Are Classified as Good, But the Application of Legal Regulations Still Needs to Be Improved, So the Results Are Not Optimal. Efforts to improve legal regulations must consistently increase public awareness about preventing COVID-19 in Batubara Regency. *Keywords:* COVID-19, Health Behavior, Health Belief Model

1. INTRODUCTION

The Covid-19 pandemic has hit us for almost two years, but public awareness of the application of health protocols is still minimal; this is shown by the many people who leave their homes without wearing masks, swarm in the markets, restaurants, tourist attractions, wedding parties, art competitions, sports, and others.[1]. The government has taken various preventive measures against Covid-19 to suppress the rate of its spread. However, until now, there is no appropriate method to reduce the incidence of infection with this virus. Mass vaccination to all levels of society has not ensured that we are free from this virus, so the most crucial thing in prevention efforts is the implementation of health protocols, likely wearing masks, washing hands, maintaining distance, and staying away from crowds. [2]

However, these various efforts will not mean anything if community behavior changes do not accompany them, so it becomes the main task for all of us to increase public awareness to implement health protocols. Batubara Regency is one of the areas in North Sumatra with the highest risk of spreading Covid-19 because it is geographically located on the coast and directly adjacent to the State of Malaysia, making it easier for outsiders to enter through small ports in the area. [3]

It's to overcome various problems related to efforts to improve health behavior; a model called the health belief model (HBM) was developed, which is a concept that analyzes a person's perception of a disease and the available means to avoid an infection. HBM was designed to explore a person's compliance behavior in health through philosophical, medical, and psychological approaches. HBM theory argues that achieving behavior change is optimal if it successfully targets perceived benefits, self-efficacy, barriers, and health threats. [4]

Handling the spread of the Covid-19 virus is not only the government's responsibility. Still, it is the responsibility of all parties, including the community, as the fundamental element of the most significant change agent in health

behavior supported by the provision of good health service facilities and infrastructure as well as regulatory policies made by the government. Everything must be integrated well so that this pandemic can be controlled.[5]

Based on this description, the researchers attempted to analyze the problems related to this Covid-19. Issues will be integrated to examine public health behavior in dealing with the new order of life during the COVID-19 pandemic. The results of this study are expected to obtain an effective handling model to improve public health behavior toward Covid-19 prevention measures in dealing with the new order of life during the Covid 19 pandemic. [9]

How are efforts to improve public health behavior towards Covid-19 prevention measures in the face of a new life order during the Covid-19 pandemic in Batubara Regency, North Sumatra. This research aims to obtain an effective model for preventing Covid 19, especially in the Batubara Regency of North Sumatra.The specific objectives of the research are To identify the description of public health behavior in Batubara Regency, North Sumatra, towards Covid-19 prevention measures based on the Health Belief Model : to identify Health Services for Covid 19 through preventive, promotive, and curative activities and to obtain an overview of the implementation of health policy and law regulations in handling Covid-19.

2.   METHODS

This study uses a analytics cross sectiona. The study was conducted in Batubara Regency by randomly selecting several sub-districts distinguished by urban and rural areas. The time required for data collection is about three months, namely from October-December 2020.The Batubara Regency was used to choose the study's population. The population in Batubara Regency is 416,493 people.The research sample consisted of two samples, namely quantitative research samples and qualitative research samples. The quantitative research sample is the people of Batubara Regency, who were selected using the convenience sampling technique with a large selection according to the following formula calculation:

$$n = \frac{N \ (Z_{1-\alpha/2})^2 \ p.q}{(N-1)d^2 + (Z_{1-\alpha/2})^2 \ p.q}$$

Description: n = Minimum sample size

$Z_{1-\alpha/2}$ =The value of the standard normal distribution (table Z) at a certain, in this study, 1.96
P =The price of the proportion in the population, based on the reference of 0.845 (84.5%)
d =Error (absolute) that can be tolerated, in this study, of 0.05
N = The population size in this study amounted to416,493 person

Based on the formula above, the quantitative research sample size is at least 201 people. The researcher decided to increase the sample size to 250 people so that the minimum number of calculations for the sample size could be met. The dependent variable in this study is COVID-19 Prevention Measures, while the independent variables are Health Behavior, Health Services for COVID-19, and health law policy regulations.It was carried out using a questionnaire to analyze the relationship between health behavior and COVID-19 prevention measures based on the Health Belief Model. Researchers provided directions for filling out and distributing questionnaires to health cadres and community leaders. The distributed questionnaires will be given a time limit for filling out for 1 week, then the data obtained will be tabulated for quantitative analysis. The data obtained both quantitatively and qualitatively were analyzed simultaneously. Quantitative data will be analyzed based on the measured variables, while qualitative data will be analyzed based on predetermined themes and topics according to the research objectives. All data obtained will be analyzed to describe the model of public health behavior in Batubara Regency in preventing COVID-19.

3.   RESULTS AND DISCUSSION

Description of Respondents Characteristics.
Respondents who filled out the questionnaire were 250 people, but only 235 people filled out the questionnaire completely and correctly, so the respondents obtained still met the minimum sample requirements that had been set, namely 201 respondents. The description of the sample characteristics based on the demographic data obtained can be seen in the following table;

Table 1. Characteristics of Respondents

Variable	f(%)
Age	
Teenagers (11-25 years)	46 (19.6)
Adult (26-45 years)	142 (60.4)
Elderly (46-65 years)	45 (19.1)
Seniors (>65 years)	2 (0.9)

Gender	
Man	70 (29.8)
Woman	165 (70.2)
Work	
civil servant	24 (10,2)
Entrepreneur/Trader	54 (23.0)
Teacher/Lecturer	1 (0.4)
Fisherman	3 (1,3)
Farmer/Farming	6 (2.6)
Workers/Employees/Employees	6 (2.6)
Housewife	93 (39.6)
Etc	48 (20.4)
Religion	
Islam	213 (90.6)
Christian Protestant	8 (3,4)
Catholic Christian	14 (6.0)
Respondent's Location	
Rural	116 (49.4)
urban	119 (50.6)

Source: Primary Data (2022)

The characteristics of respondents who filled out the questionnaire had a mean age of 35 years with the youngest age being 13 years old and the oldest being 70 years old. Women were the most common gender who filled out the questionnaire (70.2%). Based on the occupations held by the respondents, the majority were housewives (39.6%), followed by entrepreneurs/traders (23.0%) and others (20.4%). The majority of respondents' religion is Islam (90.6%).

Univariate Analysis

The public's perception of COVID-19, both from perceptions of threats, expectations, self-efficacy, instructions for action, knowledge to actions, is illustrated in table 2 below.

Table 2. Distribution of the Frequency of Public Perception of Covid-19

Variable	F(%)	Median (Category)	Min-Max
Vulnerability Perception			
Low	14 (6.0)	15	
Enough	73 (31.1)	(Tall)	6 – 18
Tall	148 (63.0)		
Severity Perception			
Low	17 (7.2)	12 (Height)	
Enough	99 (42.1)		5 – 15
Tall	119 (50.6)		
Perception Barriers			
Low	201 (85.5)	7	
Enough	24 (10,2)	(Low)	6 – 18
Tall	10 (4,3)		
Benefits Perception			
Low	4 (1.7)	17	
Enough	55 (23.4)	(Tall)	6 – 18
Tall	176 (74.9)		
Perception of Self-Ability			
Low	21 (14.5)	7	
Enough	51(16.2)	(Tall)	3 – 9
Tall	163 (69.4)		
Instructions For Action			
Low	34 (14.5)	10	5 – 12
Enough	38 (16.2)	(Tall)	
Tall	163 (69.4)		
Knowledge About Covid-19 Symptoms			
Low	235 (100.0)	0	0 – 7
Enough	0 (0,0)	(Low)	
Tall	0 (0,0)		
Covid-19 Precautions			
Low	26 (11.1)	17	7 – 21

Enough	47(20,0)	(Tall)
Tall	162 (68.9)	

Measurements of public perceptions of Covid-19 prevention measures were obtained that are as follows: public perceptions of threats, namely perceptions of vulnerability and perceptions of severity are high, meaning that the people of Batubara Regency consider Covid-19 a dangerous and threatening disease. [10] People think they have the ability to prevent the transmission of Covid-19 and people think there are no obstacles in preventing it. Measures to prevent the spread of Covid-19 are considered useful in order to avoid being infected with Covid-19. [11] This is evidenced by the Covid-19 prevention measures which are considered good to be carried out, but knowledge of the symptoms of Covid-19 is still considered low. [12]

Table 3. COVID-19 Precautions

Action	Seldom		Sometimes		Often	
	F	%	F	%	F	%
Cover your nose when you sneeze	16	6.81	64	27.23	154	65.53
Using a mask	12	5.11	39	16.60	184	78.30
Keep the distance	18	7.66	101	42.98	115	48.94
No shaking hands/hugging	41	17.45	110	46.81	84	35.74
Don't leave the house unless it's urgent	29	12.34	100	42.55	106	45.11
Washing hands	19	8.09	96	40.85	119	50.64
Don't touch your eyes/mouth	43	18.30	110	46.81	82	34.89

In general, preventive measures against COVID-19 carried out by the community in Batubara Regency have been carried out well. Although there are still some COVID-19 transmission measures that cannot be avoided properly, such as not shaking hands/hugging, and not touching your eyes/mouth when outside the house. [13] The actions of keeping a distance, not leaving the house (except for urgent needs), washing hands are still not significant for the community to do. [14] This can be seen from the high number of these actions to be taken. Based on these data, it can be said that preventive measures have not been optimally carried out by the community in Batubara Regency. Only the act of wearing a mask and covering the nose when sneezing has been significantly good for the community. [15]

Bivariate Analysis

The relationship between knowledge and public perception of COVID-19 with COVID-19 prevention measures is carried out by analyzing each of these variables separately. This aims to see what variables affect COVID-19 prevention measures in the community.

Table 4. Analysis of Community Perception Correlation Based on Health Belief Model, Fatalistic Belief and Knowledge With COVID-19 Precautions

Variable	Covid-19 Precautions	
	R	P
Vulnerability Perception	0.339	0.0001
Severity Perception	0.254	0.0001
Perception Barriers	-0.498	0.0001
Benefits Perception	0.419	0.0001
Perception of Self-Ability	0.314	0.0001
Instructions For Action	0.313	0.0001
Fatalistic Belief	-0.010	0.879
Knowledge about COVID-19	-0.274	0.0001

*) Spearman Correlation Test

The correlation test results on each variable show that knowledge and public perceptions based on the Health Belief Model have a significant correlation with Covid-19 prevention measures ($p < 0.05$). Only the fatalistic belief variable did not have a substantial correlation with Covid-19 prevention measures ($p > 0.05$). Based on the correlation coefficient from the test results, it can be seen that perceptions of vulnerability, severity, self-ability, instructions for action, and knowledge belong to a weak correlation ($r = 0.21 - 0.40$) and are positive except for knowledge of Covid-19 symptoms. The results of the correlation test between knowledge about Covid-19 and Covid-19 prevention measures can be interpreted as the higher a person's knowledge, the lower the preventive action he takes, and vice versa.

The correlation test between perceived barriers and benefits of Covid-19 prevention measures is sufficient ($r = 0.41 - 0.60$). However, the correlation between perceived barriers and Covid-19 prevention measures is negative, while the correlation between perceived benefits and Covid-19 prevention measures is positive. These results mean that the higher the perception of a person's barriers, the lower the preventive actions taken by that person, and vice

versa. The correlation between perceived benefits and preventive measures is that the higher a person's perceived benefit, the higher the preventive action taken by that person. [16]

Multivariate Analysis

The relationship between several perceptions, public knowledge and Covid-19 prevention measures can be tested using a multivariate test. In contrast to the bivariate correlation test above, this multivariate correlation test analyzes which variables are more influential in eliciting preventive action in the community. The results of the multivariate test below show that the variables of perceived barriers, perceived benefits, instructions for action and knowledge of Covid-19 play a role in making decisions to take preventive measures against Covid-19. It means that a person will take preventive measures against Covid-19 if he feels there is a benefit for himself in taking these preventive measures. He is given instructions (information) on how to take these preventive measures. [17]

A person will take preventive measures against Covid-19 if the barriers to carrying out these actions are low, and vice versa. However, based on these results it can also be seen that people who have high knowledge will tend not to take preventive measures against Covid-19. [27] The multivariate test above also shows that the variable that plays the most role in determining whether a person takes preventive action is the perceived barrier variable, followed by the knowledge variable, instructions for action and perceived benefits. [18].

4. CONCLUSIONS

Analysis of the behavior of Covid-19 prevention measures in the community in Batubara Regency based on the Health Belief Model by conducting a bivariate correlation test, it was found that the results in the form of all variables had a significant correlation with preventive measures. The correlation between each of these variables varied from a weak correlation (r=0.21-0.40), namely between perceptions of vulnerability, severity, self-efficacy, instructions for action, and knowledge, to sufficient correlation (r= 0.41-0,60), namely the perception of benefits, barriers. [24] When multivariate correlated, only four variables were found to be correlated, namely perceived barriers, perceived benefits, instructions for action, and knowledge. This means that the four variables have a correlation with Covid-19 prevention. [19]

The analysis of public health behavior onCOVID-19 prevention measures based on the Health Belief Model has a significant correlation (p<0.05). [20] Covid-19 health services in Batubara Regency through preventive, promotive, and curative activities have been classified as good by making a structured, systematic and integrated prevention program into several stages through 3 phases, namely the first phase of emergency response (March-May 2020), the second phase of adjustment by compiling guidelines for the New Order of Life (June-July 2020) and the third phase of health protocol law enforcement (August-present). [25] The program is carried out in an integrated manner by various parties across sectors, the government, health workers, and community leaders. [21]

Since the created regulations and sanctions have not been applied rigorously, the application of legal regulations to stop COVID-19 has not been operating properly. [26] but they still have the option of taking the form of an appeal. Cognitive interventions are carried out to increase public understanding in recognizing the signs and symptoms of Covid-19 and provide prompt confirmation to the public against false information about Covid-19 so that there is no misunderstanding of information in the community. [22] Increase public understanding that they individually play a role in improving community health. Implement educational programs related to COVID-19 prevention. [23] Conduct intensive and periodic monitoring and evaluation of the Covid-19 prevention program so that it runs well in the provision of facilities and infrastructure. Implementing programs that pay more attention to environmental and socio-cultural factors. [28].

ACKNOWLEDMENT

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