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Determinants of COVID-19 Prevention Behavior in School Students - A Cross-sectional Study

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Abstract

BACKGROUND: The global pandemic, due to having gone on for more than 1 year, has forced countries around the world to take on new habitual adaptations. This includes Indonesia. The application of new norms and their associated adjustments has been applied in all areas that intersect with the public, such as public transportation, places of worship, offices, supermarkets, inns, and restaurants. The control of the spread of coronavirus disease (COVID)-19 has been and is carried out by the government so then its spread can be controlled. In reality, on the ground, it is increasingly rampant. Controlling the spread of COVID-19 can be successful if the entire community participates in taking precautions.

AIM: The research objective was to determine the relationship between knowledge, attitude, and the behavior of SMKN I students in the effort to prevent COVID-19.

METHODS: The type of this research was processed using the descriptive correlative method which describes the relationship between the knowledge, attitude, and behavior of the students in an effort to prevent COVID-19. The population of this research was the students majoring in the Pharmacy and Computer and Network Engineering Departments of SMKN 1 Garut. The sample was gathered using the total sampling technique, totaling as many as 160 respondents. The instrument used in this research was a questionnaire. The data analysis method used was Chi-square.

RESULTS: The results showed that the level of the students' knowledge on the efforts needed to prevent COVID-19 was in the sufficient category (72%). Most of the students' attitude about the prevention of COVID-19 was in the sufficient category (74%). Most of the sufferers' behavior regarding the prevention of COVID-19 was in the good category (79%). Based on the results of the statistical tests executed using Chi-square, there was found to be a relationship between the students' knowledge and behavior in an effort to prevent COVID-19 ($p = 0.63$). There was also found to be a relationship between the students' attitude and behavior in an effort to prevent COVID-19 ($p = 0.83$).

CONCLUSION: The conclusion was that there was a relationship between the knowledge, attitude, and behavior of the students in an effort to prevent COVID-19.

Background

Currently, the world is experiencing a global health crisis due to COVID-19 which has never happened before. In February 2020, the WHO officially declared COVID-19 to be a global pandemic. The status of this pandemic was officially announced after 125,000 people were confirmed to be infected with the novel coronavirus. This was also after it had killed more than 45,000 people around the world. As reported by kompas.com, the total number of COVID-19 cases worldwide has reached 43 million. It is still showing signs of increasing. Since the discovery of the first case in Indonesia in March 2020, based on changes to the latest data from the COVID-19 task force, the total number of confirmed cases reached 392,934 with the number of those cured reaching 317,672 and deaths reaching 13,411. This has had an impact on the lives of millions of families. Stagnant conditions, social barriers, school learning being carried out online, and limited health services have all greatly affected daily life. This includes families who have children.

The global pandemic status, which has entered its 2nd year, has forced countries around the world to adopt new habitual adaptations. This includes Indonesia. This new habit is applied to places that intersect with the public, such as public transportation, places of worship, offices, supermarkets, inns, and restaurants. The control of the spread of COVID-19 is carried out by the government with various efforts so then its spread can be controlled. The reality on the ground does not always work as in theory. In fact, COVID-19 is increasingly rampant and out of control. Controlling the spread of COVID-19 can be successful if the whole community participates in taking action. The prevention of the transmission of COVID-19 is closely related to the level of public knowledge. According to Notoatmodjo [1], knowledge is an effect of the understanding that arises after someone observes a target. People who understand will have better

behavior. Knowledge forms a very essential domain when it comes to realizing one's activities. The easier it is for a person to get information, the wider their knowledge will be. Conversely, the less knowledge that a person has, the more difficult it is for someone to receive information [2]. In another sense, the high level of the spread of COVID-19 can be influenced by knowledge [3]. This is in line with the ongoing research [4] which states that there is a relationship between public knowledge and the compliance with the use of masks as an effort to prevent COVID-19. This was seen in Ngronggah where the obedient respondents were known to have a high level of knowledge about COVID-19 and its prevention. Likewise, the research result of the study Hasanah *et al*. [5] show that there is a significant relationship between knowledge and attitude (p = 0.000) regarding how to prevent the novel coronavirus disease (COVID-19) in Indonesia. The results of the research by the students of Yordani [6] found that the prevention of the spread of COVID-19 virus can be done if the right strategy is in place.

Knowledge about new habits during a pandemic to prevent the transmission of the Covid-19 virus need to be socialized so then people understand and begin to adopt a healthy lifestyle. Human attitude is born through the social processes that formed during their lifetime where a person obtains expertise and information. This mechanism works in the realm of the family, education, and the community. The results of the study Khasawneh *et al*. [7] state that Indian medical students have a good attitude when seeking to prevent COVID-19 and they also show the attitude of being ready to comply with the government guidelines on quarantine and maintaining distance. The establishment of the attitude of individuals refers to the impact of their relationship with the surrounding environment through a complicated mechanism. According to the previous research [8], there are several factors that can influence the formation of attitude including life experience, the charisma of other people who are considered special, the impact of civilization, mass media, and the impact of sentimental aspects. If someone has a good level of knowledge, their attitude will be good too. This will have an impact on their COVID-19 prevention behavior [9]. The attitude of the community in terms of preventing COVID-19 depends on the various factors that affect people's attitude. If the effect is positive, the community will have a tendency to act positive. On the contrary, if the effect is negative, the community will have a tendency to act negatively. This will also have an impact on people's behavior.

Behavior is a form of response by an individual to an action or stimulus that can be observed that also has a specific frequency, duration, and purpose, whether consciously or not [10]. Robert Kwick [11] revealed that behavior is a person's activity that can be studied and observed. The result of the study Donsu [12] state that Saudi Arabians have an average score of 4.34 (SD = 0.8, range: 0–5). This result indicates good practice when it comes to preventing COVID-19. Likewise, the research results of the study Al-Hanawi [13] show that most Malaysian citizens take action to avoid crowds (83.4%), practice proper hand-washing (87.8 %) and use appropriate masks (51.2%). In practice, knowledge, attitude, and behavior are essential aspects that support life during the adaptation of new habits to avoid COVID-19 transmission.

Vocational school students are adolescents who are experiencing developmental changes that are expressed in their daily behavior. During the COVID-19 pandemic, adolescents have been forced to reduce their outside activities and to engage in self-isolation rather than gathering with their peers. This, of course, can cause frustration. This leads to saturation because it continues to remain necessary for a long time. This means that many of them begin to ignore the health protocols, thereby increasing the potential of exposure to the COVID-19 virus. Based on the above background, the researchers were interested in analyzing the determinants of COVID-19 prevention behavior among school students.

Methods

The research data were processed using the descriptive correlative method that describes the relationship between the students' knowledge, attitude, and behavior in relation to the prevention of COVID-19. The population of this research consisted of the students of SMKN1 Garut. The sample was gathered using total sampling, resulting in as many as 160 respondents. The instrument in this research was a questionnaire. The data analysis used was Chi-square. Based on Table 1, it could be seen that the number of respondents who were female there were 89 respondents and 71 male respondents, Aged 16 years there were 74 respondents, aged 15 years there were 57 respondents and aged 17 years there were 29 respondents, Semester 11 there were 65 respondents, Semester 10 there were 57 and Semester 12 there were 38 respondents, there were 102 respondents in computer and network engineering expertise and 58 respondents in pharmacy.

Table 1: Percentage distribution of the respondent's characteristics at SMKN1 Garut (n = 160)

No.	Sub-variable	f	%
1.	Gender		
	Male	71	44
	Female	89	56
2.	Age		
	15	57	36
	16	74	46
	17	29	18
3.	Semester		
	10	57	35
	11	65	40
	12	38	25
4.	Department		
	Pharmacy	58	36
	Computer and Network Engineering	102	64

From Table 2, it was obtained that the highest result was that there were 115 respondents with sufficient knowledge and 26 respondents with less knowledge and 19 respondents with good knowledge.

Table 2: Respondents' knowledge distribution regarding the students' behavior in an effort to prevent COVID-19 (n = 160)

No.	Knowledge level	f	%
1.	Good	19	12
2.	Enough	115	72
3.	Less	26	16

From Table 3, it was obtained that the highest result was that there were 118 respondents with sufficient attitude and 24 respondents with less attitude, while there were 19 respondents with good attitude.

Table 3: Respondents' attitude distribution regarding the students' behavior in an effort to prevent COVID-19 (n = 160)

No.	Attitude	f	%
1.	Good	18	11
2.	Enough	118	74
3.	Less	24	15

From Table 4, it was obtained that the highest result was in good behavior there were 126 respondents and less behavior there were 34 respondents.

Table 4: Students' behavior distribution in an effort to prevent COVID-19. (n = 160)

No.	Behavior	f	%
1.	Good	126	79
2.	Less	34	21

Results

The characteristics indicate that 56% of the respondents were female. Most of the respondents were aged 16 years old, totaling as many as 46%. Semester 1 occupied the first rank for as many as 40, and the majority were majoring in computer and network engineering, totaling as many as 64%.

Discussion

Relationship between the students' knowledge and behavior in the effort to prevent COVID-19

Based on Table 5, it was known that most of the respondents were categorized as having enough knowledge, totaling 115 (72%). Those with good behavior totaled 96 respondents and those with less good behavior totaled 19 respondents. The respondents in the less knowledge category totaled 26 respondents, where 17 respondents displayed good behavior and 9 respondents displayed less behavior. The respondents in the good knowledge category totaled 19 respondents in which 13 respondents had good behavior and 6 respondents displayed less good behavior. The results of the correlation analysis on the relationship between the students' knowledge and behavior in relation to the efforts undertaken to prevent COVID-19 were found to result in a value of Sig = 0.63 ($\alpha \leq 0.05$). This meant that H0 was rejected and that Hl was accepted. This shows that there was a relationship found between the students' knowledge and behavior as part of the effort to prevent COVID-19. This is in line with the results of the study Azlan *et al*. [14] which show that there is a significant relationship between knowledge level and the prevention behavior. Similarly, the results of another study [9] showed that 82.3% of the knowledge level about COVID-19 among the students in China was classified as good. Supported by the other research results [15], there is a relationship between public knowledge and the efforts to prevent COVID-19 with a p = 0.000 (<0.05), and a correlation coefficient value of 0.358. This indicates a strong and one-sided relationship between the knowledge about COVID-19 and the prevention measures. In other words this shows that the better the number of public knowledge, the better the prevention efforts will be carried out. In line with the research by Donsu [12], the majority of the study participants have knowledge of COVID-19. The mean score for COVID-19 knowledge was 17.96 (SD = 2.24, range: 3–22), indicating a high level of knowledge. This was corroborated by the results of the study by Honarvar [16] indicating that most respondents (67%) have a good level of knowledge about COVID-19. Likewise, the results of another study [17] found that Chinese people have a good and positive level of knowledge and behavior. This is inversely proportional to the results of the research conducted in Banglandesh (Wadood *et al*., 2020) where most students have a bad level of knowledge. The same thing happened in the results of the study conducted in India where it was found that a bad level of knowledge about COVID-19 was found among Indian medical students [18].

Table 5: Cross-tabulation of the relationship between the students' knowledge and behavior in an effort to prevent COVID-19

Variable	Knowledge							
	Good		Enough		Less		Total	
	f	%	f	%	f	%	f	%
Behavior								
Good	13	10	96	76	17	14	126	100
Less	6	18	19	56	9	26	34	100
Total	19	12	115	72	26	16	160	100
p-value	0.63							

From the research results, it could be seen that most of the students had at sufficient level of knowledge. Knowledge is vital because it can have an impact on behavior. Learning is the solution and involves gaining new knowledge and skills. The information facilities about COVID-19 are available in various forms of information media. This is paired with the various efforts that have been made by the government in collaboration with various parties to provide an understanding and information about the dangers of the COVID-19 virus. Information sources play an important role in spreading information on the prevention and control of COVID-19. Through various information sources, it is hoped that the public will always be aware of the risk of exposure to the COVID-19 virus. Adolescents need role models

to strengthen the knowledge that they already have. Knowledge is an element that plays the most important role in assessing a person's ability to behave. Through embedded good knowledge, one can ascertain which knowledge is considered good. This determines what should be applied and which one is considered bad, which means that it is not appropriate to do as a COVID-19 prevention behavior. By providing a lot of information on infections and diseases, it is hoped that the community, especially adolescents, will realize the importance of adhering to the established health protocols aimed at reducing morbidity and mortality. Decent intelligence regarding the consequences of the signs and symptoms of a disease means that the person maintains their health through preventive measures [19]. The results of the study by Arbiol *et al*. [20] shows that participants with a low level of knowledge about COVID-19 tend to access information sources less often. They do not trust the information circulating. Information and the environment are the factors that can affect a person's level of knowledge.

Relationship between the students' attitude and behavior in an effort to prevent COVID-19

Based on Table 6, the attitude of most of the respondents was categorized as being enough, amounting to 118 students (74%) with good behavior, totally as many as 98 (78%) of respondents. Less behavior was found for as many as 16 (13%) respondents. In the less attitude category, there were 24 respondents. There were 16 respondents with good behavior and 8 respondents with less behavior. For the next category, there were 18 respondents with a good attitude, where 12 respondents engaged in good behavior and 6 respondents engaged in less behavior. For the results of the correlation analysis and the relationship between the students' attitude and behavior in an effort to prevent COVID-19, the value of Sig = 0.83 ($\alpha \leq 0.05$) was obtained. This meant that H0 was rejected and HI was accepted. This means that there is a relationship between the students' attitude and behavior in an effort to prevent COVID-19. This is in line with the research by Health *et al*. [21] where it was found that there is a relationship between attitude (p = 0.000) and Covid-19 prevention measures. Individuals with bad knowledge have the risk of having a negative attitude. This is 4992 times greater than individuals with good knowledge. Likewise, the research results of the study Wadood *et al*. [22] show that the majority of North Sulawesi people (97.8%) have a positive attitude. Reinforced by the results of the research by Honarvar [16], it was found that 68.6% of the public have a positive attitude toward preventing COVID-19. They have implemented COVID-19 prevention activities in line with the norms. In contrast to the results of the study in Uganda, the respondents had a worse attitude [23]. In this study, the respondents were businessmen drivers and security guards. Attitude refers to the tendencies that are not accompanied by real actions and behavior. Attitude is assumed to be an evaluative predisposition that significantly determines how an individual acts. Actual attitudes and actions are often very different. Actions are determined not only by attitudes but also by various factors. According to Breckler, attitude has three main components, namely awareness, feelings, and behavior. The results of this study indicate that the majority of respondents have a fairly good attitude. They are aware of the importance of the efforts to prevent COVID-19. Attitude is a form of readiness to act and it does not constitute the application of certain motivations [8]. The attitude of each individual is likely to be different. An uncertain attitude will manifest into activities because there are other factors that contribute to the formation of action. The factors that influence and support the student's attitude were the facility and the support from both their family and friends. The students must have a positive attitude during the pandemic to prevent exposure to COVID-19.

Table 6: The relationship between the students' attitude and behavior in an effort to prevent COVID-19

Variable	Attitude							
	Good		Enough		Less		Total	
	f	%	f	%	f	%	f	%
Behavior								
Good	12	9	98	78	16	13	126	100
Less	6	18	20	59	8	23	34	100
Total	18	11	118	74	24	15	160	100
p-value	0.83							

Conclusion

From the results of the research based on the Chi-square test, it can be concluded that there was a relationship between the students' knowledge and their behavior as part of the effort to prevent COVID-19. There was also a relationship found between the students' attitude and behavior as part of the effort to prevent COVID-19. Information exposure was still needed about the dangers of COVID-19 to increase the awareness of the students, especially when dealing with offline learning.

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