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Health Education in Pandemic: Students' Perception and Motivation Correlate with Prevention Behaviors

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ABSTRACT

The prevention of Coronavirus Disease 2019 (Covid-19) is everyone's effort everywhere including in health education. University is one of the most vulnerable places for Covid-19 transmission. Students, as one of the community components in the university, have a vital role in preventing the spread of Covid-19 with appropriate perception and motivation. The research aims to identify the correlation between perception, motivation, and efforts of preventing Covid-19 transmission to students of the Faculty of Health. The research method is descriptive with surveys as the data collection technique. Instruments used in the research are in the form of instruments of perception, motivation, and behavior that are developed with 10 items each. The research results indicate a significant relationship between perception, motivation, and behavior of Covid-19 prevention. Several items with the lowest average score are the first item for perception (4.05), the ninth item for motivation (4.06), and the fifth item related to preventive behaviors (4.14). Efforts in improving the behavior of Covid-19 prevention can be carried out through the enhancement of education at the university level. The research concludes that there is a relationship between the perception, motivation, and behavior of students of the Faculty of Health in preventing Covid-19 transmission.

Keywords: *Prevention Behaviors, Health Education, Preventing Covid-19*

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INTRODUCTION

Perception is one of the crucial aspects to implement a basic concept that is understood by the communities. Perception built by a person is based on a correct understanding of a matter. Someone who has sufficient knowledge and the right mindset can have a proper perception of something. One of them is related to the effort of Covid-19 prevention. It is necessary thus to enhance one's knowledge in preventing Covid-19 (Elliott et al., 2020; Tovstiga & Tovstiga, 2020). The goal is that society could have sufficient knowledge in health education that is suitable for the efforts of Covid-19 prevention. Covid-19 preventive behaviors need to be socialized by educators so students and college students could understand it well. Student behavior is important

to be improved to contribute toward a movement of preventing the Covid-19 transmission issue.

Various studies related to the effort in preventing Covid-19 have been conducted. One of them is the measurement of pro-environmental behaviors (PEB) with an orientation to overcoming the impact of environmental health damage (Braun et al., 2018). Besides studies about Covid-19 preventive behaviors, other studies have also been carried out during the Covid-19 pandemic related to the implementation of 21st-century learning. The results of these studies indicate that learning during Covid-19 transmission experienced various changes compared to before the pandemic (Crawford et al., 2020; Pham & Ho, 2020; Rahimah, et al., 2020; Islamy, et al., 2022). Technology utilization-centered learning is much more developed during the Covid-19 pandemic. This has impacts on changes in students' behaviors and perceptions of the environment. Learning during the pandemic varies greatly according to the needs of each learning topic (Kidd & Murray, 2020; Sparrow et al., 2020).

Efforts in education regarding Covid-19 transmission have been done by several related parties. Serious attempts have been conducted by related institutions yet efforts by communities are more important. Communities play a significant role in the establishment of behaviors to prevent the spread of Covid-19 (Howarth et al., 2020). The current status of Covid-19 transmission is still ongoing despite the mass vaccination that has been conducted. Behaviors in Covid-19 prevention become important to be continuously considered every day (Card, 2022; Chakraborty et al., 2021; Golden et al., 2021; Hossain et al., 2022; Menebo, 2022; Ohtomo & Kimura, 2022; Sinyor et al., 2021). Students play a role in helping the prevention of Covid-19 transmission that is emerged in the communities. They are part of community components that could become an example in the Covid-19 preventive efforts. Health education and prevention efforts among students are pivotal; thus, strengthening their perceptions and motivation is a necessity.

Students' perceptions and motivation in Covid-19 prevention become crucial. An appropriate perception will develop a correct understanding related to Covid-19 prevention. A perception that preventing Covid-19 is an important matter must be built so the perception goes hand in hand with motivation and efforts in preventing Covid-19 transmission. Student motivation to prevent the transmission will contribute to the efforts of Covid-19 prevention. Motivation must be built to match the spirit of Covid-19 prevention. Students are a community component who receive education related to health; thus, they must contribute to the preventive efforts in the community (Cutri et al., 2020; Basir, et al., 2021). Students in the Faculty of Health have superiorities in terms of understanding health content.

Students in the Faculty of Health need to become an example to educate students from other faculties and the community as well. Preventive efforts can be varied from providing information on websites and creating brochures, to conducting extensions directly to the communities. Providing information must be a routine and regular activity so information related to Covid-19 transmission could be well implemented. Based on the description, further study is needed regarding the behaviors to prevent the spread of Covid-19. Perception and motivation factors are among the important aspects that need to be further studied in the current research. Therefore, the research aims to measure the correlation between perceptions, motivation, and behaviors of Covid-19 transmission prevention in students of the Faculty of Health.

METHOD

The method used in the research was a descriptive method using a survey as the data collection technique that had been conducted in 2022. The research sample included 66 students of the Faculty of Health from Universitas Mohammad Husni Thamrin and Stikes Prima Indonesia. Instruments used in the research were related to variables of student perceptions, student motivation, and behaviors of Covid-19 prevention. Aspects measured in the research were three variables consisting of perceptions, motivation, and behaviors of Covid-19 transmission prevention.

In the instrument development stage, the number of items of the perception, motivation, and behavior instruments was 10 items each. The available options for each item were strongly agreed, agree, less agree, disagree, and strongly disagree. Each item had been developed according to the characteristics of respondents who are students of the Faculty of Health. The developed instruments focused more on the aspects related to Covid-19 prevention in the communities. Detailed indicators of the instruments related to student perceptions are presented in Table 1.

Table 1. Instrument indicators of student perceptions related to the spread of Covid-19

No	Indicators	Item
1	Perceptions related to the general spread of Covid-19	1,2,3
2	Factors that cause Covid-19	4,5,6
3	Efforts in reducing Covid-19	7,8,9,10

Indicators for student motivation in preventing the spread of the Covid-19 pandemic were developed according to the indicators presented in Table 2. The content of the indicators was that students must carry out Covid-19 preventive efforts regularly. The developed indicators reflect the motivation of the students of the Faculty of Health in preventing Covid-19.

Table 2. Instrument indicators of student motivation

No	Indicators	Item
1	Motivation to carry medical tools for Covid-19 prevention	1,2,3
2	A healthy lifestyle during the pandemic	4,5,6
3	Preventive efforts in tackling Covid-19	7,8,9,10

Indicators related to behavior were developed according to the conditions and characteristics of the samples, which were students of the Faculty of Health. There were three indicators related to student behavior. Detailed indicators of the behaviors in preventing Covid-19 among students can be seen in Table 3.

Table 3. Instrument indicators of student behavior

No	Indicators	Item
1	Behaviors of health protocol implementation	1,2,3
2	Efforts in Covid-19 prevention in daily activities	4,5,6
3	Routines related to Covid-19 prevention	7,8,9,10

Data analysis in the research was carried out by testing the relationship between variables using a Chi-square. The results of the data analysis would be used as a basis to interpret the data. The data analysis becomes an important component in

the research for it will be a new finding and is the form of verification of the real situation in the field.

RESULT AND DISCUSSION

The research results indicate a relationship between perception and behavior of Covid-19 transmission prevention where 26 (72.2%) respondents had a positive perception of the behavior of Covid-19 transmission prevention. The statistical test results generated a p-value = 0.008, which means that there was a significant relationship between perception and behavior of Covid-19 transmission prevention with OR value = 4.491 (see Table 4). This suggests that respondents who had a positive perception had an opportunity of 1.5-12.7 times to carry out good Covid-19 transmission prevention.

Table 4. Results of a statistical test of the relationship between perception and preventive behaviors

Perception	Behavior				Total	0R (95%CI)	P Value
	Good		Bad				
	n	%	n	%			
Positive	26	72.2	10	27.8	100	4.491 (1.5 – 12.7)	0.008
Negative	11	36.7	19	63.3	100		

The relationship between motivation and behaviors of covid-19 transmission prevention suggests that 33 (76.7%) respondents had a high motivation with good behaviors of preventing Covid-19 transmission. The statistical test resulted in a p-value = 0.000 which suggests a significant relationship between motivation and behavior of Covid-19 transmission prevention with OR value of 15.675 (see Table 5). This implies that respondents having high motivation had an opportunity of 4.3-56.9 times to conduct covid-19 transmission prevention well.

Table 5. Results of a statistical test of the relationship between motivation and preventive behaviors

Motivation	Behavior				Total	0R (95%CI)	P Value
	Good		Bad				
	n	%	n	%			
High	33	76.7	10	23.3	100	15.675 (4.3 – 56.9)	0.000
Low	4	17.4	19	82.6	100		

The results of the calculation of the score analysis for each item indicate that the largest score of the student perception was in item number 8 which related to reducing physical activities outside the house. Whereas, the smallest score was in item number 1 regarding the understanding of Covid-19 as a virus. The average score of each item of the student perception can be seen in Table 6.

Table 6. The score for each item of student perceptions

No	Item	Average score
1	Covid-19 is a new virus that has never existed in humans	4.05
2	Symptoms of Covid-19 are fever with difficulty breathing	4.47

3	Talking at a distance of 1 meter could reduce the risk of contracting Covid-19	4.45
4	A mask is only used by people who are sick and have a risk of infection	4.09
5	A high immune system could protect one from contracting Covid-19	4.17
6	Wash hands with soap in running water could kill Corona Virus	4.36
7	Shaking hands increases the risk of contracting Covid-19	4.47
8	Reduce physical activities outside the house could lessen the risk of contracting Covid-19	4.52
9	A medical mask can only be used one time for 8 hours	4.30
10	Covid-19 can be cured with immediate treatment from the health workers	4.39

The research results of item measurement from student motivation suggest that the highest score was in item 1 related to the motivation to hand hygiene. The lowest score was in the 9th item regarding motivation to check the temperature every morning as an effort to prevent Covid-19. The results of each score and its item related to motivation are presented in Table 7.

Table 7. The score for each item of student motivation

No	Item	Average score
1	I am driven to wash my hands after activities to prevent contracting Covid-19	4.74
2	I am driven to bring hand sanitizer as a substitute for washing hands to prevent contracting Covid-19	4.30
3	I am driven to use a mask in public places to avoid splashing saliva from people infected with Covid-19	4.61
4	I am driven to sunbathe every morning to increase stamina so I am not susceptible to contracting Covid-19	4.47
5	I refuse to shake hands and hug to prevent Covid-19 transmission	4.39
6	I am encouraged to live healthily and maintain my body stamina by drinking multivitamins, eating a balanced diet, and getting enough rest to prevent the transmission of Covid-19	4.61
7	I try not to leave the house except for something urgent to prevent Covid-19 transmission	4.70
8	I am encouraged to maintain a minimum distance of 1 meter from other people when talking to prevent Covid-19 transmission	4.45
9	I am compelled to check the temperature every morning to make sure I am in good condition	4.06
10	I am driven to maintain house cleanliness to prevent Covid-19 transmission	4.64

The research results also indicate the average score of behaviors of Covid-19 transmission prevention among the students. The result shows that the highest score was in the 2nd item related to behaviors of using masks outside the house. Whereas, the lowest score was in the 5th item, which was the use of personal food and comb.

Detailed results of the scores of the behaviors of Covid-19 prevention can be seen in Table 8.

Table 8. The score for each item of preventive behavior of Covid-19 transmission

No	Item	Average score
1	I always wash my hands in 6 steps using soap in running water after every activity	4.62
2	I use a mask correctly to cover my mouth and nose when I am sick or I am outside the house	4.68
3	I maintain my stamina by drinking multivitamins, eating a balanced diet, and getting enough rest	4.41
4	I did not touch my face before washing my hands	4.38
5	I use my tableware and comb	4.14
6	Every time I sneeze and cough, I cover my mouth and nose using tissue or my inner upper arm	4.58
7	I always take a shower and clean my body before doing other activities every time I get back from work or outside the house	4.50
8	I only leave the house for important activities, for example buying necessities or getting a treatment	4.50
9	I regularly clean the door handle, light switch, and table using disinfectant	4.24
10	I keep a minimum distance of 1 meter from other people	4.39

The research results indicate a significant relationship between perception and motivation and the behaviors to prevent the spread of Covid-19. Moreover, motivation and perception are suggested as prominent factors in preventing Covid-19 transmission. The perception of students of the Faculty of Health is established from their learning results during health education. Prior knowledge will form a perception in the students. Knowledge is started from a low thinking level, namely, according to Anderson (2001), remember, understand, and apply. The three levels are included in the thinking level in the category of Lower Order Thinking Skills (LOTS), whereas the higher thinking level known as Higher Order Thinking Skills (HOTS) consisted of analyzing, evaluating, and creating (Anderson et al., 2001).

The perception of students of the Faculty of Health must be following their understood lesson. An appropriate perception of Covid-19 prevention will form preventive behavior of Covid-19 transmission conducted by the students. The perception becomes a prominent component since wrong perceptions will lead to wrong behaviors (Antipova, 2018; Appiah et al., 2018; Hatamzadeh, 2019; Stover & Ziswiler, 2017). The impact of wrong behaviors will deteriorate efforts of preventing the spread of Covid-19 in the communities. Perception needs to be aligned with the correct understanding that is consistent with the conditions of society. The results of inappropriate perception will have a long-term impact on the behavior of Covid-19 prevention; therefore, efforts in the distribution in the community will be harder.

The motivation of the students of the Faculty of Health affects the behaviors of Covid-19 transmission prevention. This is due to student motivation that will determine the level of intensity of the behaviors to prevent the spread of Covid-19. Strong motivation will create more intensive behaviors to prevent the spread of Covid-19 by the students. Low motivation, on the other hand, will hinder the behaviors of

Covid-19 transmission prevention by the students. Efforts are done to improve student motivation, one of them, is by carrying out various interesting activities in the community and creating learning innovation using technology-based learning media (Gündüz et al., 2016; Nissim et al., 2016; Wicaksono et al., 2018). These activities will be consistent with the obligations of higher education institutions of servicing the wider community. Community service is expected to become a motivation for students of the Faculty of Health in preventing Covid-19 transmission through health education.

Good learning quality will enhance student motivation in preventing the spread of Covid-19. Learning at the college level must be directed to HOTS; thus, it is not merely understanding basic concepts but tends toward deeper and thorough understanding. The curriculum for higher education needs revision to trigger changes in the perspective on a concept and theory in studying health. The perspective of the revised curriculum will change the substance of courses learned (Deschryver, 2017; Eijck, 2010; Groves et al., 2016; Lee, 2016). Upon the revision, the direction of education will shift to those with orientation to the understanding of Covid-19 prevention. The change in curriculum is one of the efforts to improve the understanding of the students of the Faculty of Health to prevent the spread of Covid-19.

Another applicable effort to enhance behaviors in preventing the spread of Covid-19 is by implementing real programs that existed in the community. Such movements as washing hands with soap, wearing a mask, and distancing must continue to be applied despite the inclining number of Covid-19 cases. Learning policies at schools and universities must be clarified in terms of efforts of preventing Covid-19 transmission. Hybrid learning, online and offline, can be carried out at schools and universities (Barak & Dori, 2009; Buchanan & Mathews, 2013). Health education with hybrid learning has several advantages, among others, students can still receive content directly from the lecturers while complying with applicable health protocols; hence, hybrid learning is the right solution at the moment.

The results of this study are different from other studies that have been conducted. The results of another study conducted in India showed that 47% of information sources related to Covid-19 came from mass media, 21% came from fellow communities, 17% from social media, and 15% from family colleagues. (Chakraborty et al., 2021). In addition to the research that has been done in India, there is another study conducted in Ethiopia which shows that 39.5% still have low knowledge related to Covid-19 (Tadesse et al., 2020). The results of other studies also show that perceptions and trust in science are related to guidelines for disaster prevention (Plohl & Musil, 2021). The results of the next study related to the habit of washing hands of people in the USA to prevent transmission of Covid-19, the results showed that 79.6% washed their hands using soap, 17.8% used hand sanitizers, and 10.1% used household products. (Gravagna et al., 2022). Other research shows that a person's personality greatly influences behavior in preventing Covid-19 (Card, 2022).

The results of these studies that have been carried out previously certainly have differences in the target sample with this study. The results of this study have a specificity where the sample studied is a student of the faculty of health who is a candidate for health workers. This research implies that there should be more educational efforts related to the prevention of Covid-19 for Health students. This is to increase education related to preventing the spread of Covid-19. The results of this study can be used as a basis for revising the curriculum in the study program.

The limitation of this research lies in the number of samples that still cannot be representative on a national scale. This has an impact on the difficulty of seeing this

Covid-19 prevention behavior more broadly. In addition to the limited sample used, this study has not linked other variables that might be connected, such as supporting facilities and facilities to prevent Covid-19. In addition, there are other problems such as the low awareness of a person in preventing the transmission of Covid-19 through eating utensils that still need to be prevented.

CONCLUSION

Based on the research results, a conclusion can be drawn that there was a significant influence between perception, motivation, and behavior of Covid-19 prevention. An effort that can be done to improve the level of perception and motivation of students of the Faculty of Health is by developing more comprehensive learning related to the Covid-19 topic. The research limitation is related to the small sample thus further study is required on a wider scale. A suggestion for the next research is to develop integrated learning for students of the Faculty of Health related to Covid-19.

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AUTHOR CONTRIBUTION STATEMENT

The author had participated in the research and approved the final version of the manuscript.

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