Relationship between Level of Knowledge, Attitudes and Practice of Health Protocols with the Incident of COVID-19

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ABSTRACT

COVID-19 is a disease caused by the SARS-CoV-2 virus which has spread throughout the world, including Indonesia. In response to this pandemic, the 5M health protocol is related to behavior, as well as being one of the factors in breaking the chain of transmission of COVID-19. This study aims to determine whether there is a relationship between the level of knowledge, attitudes, and practice of the 5M health protocol with the incidence of COVID-19 in FK UKI students batch 2018 in 2022. This study is an analytical survey research with a cross-sectional approach. Simple random sampling is used as a sampling technique with a total of 113 FK UKI students batch 2018. This study used a questionnaire to measure the level of knowledge, attitudes, and practices of the 5M health protocol and the incidence of COVID-19 based on RT-PCR within one year. Filling out the questionnaire is done online using a Google form. The data will be analyzed univariately and bivariately using Chi-square and Fisher's Exact Test. The study ran for 2 weeks starting from March 7 to March 14, 2022. Univariate results found that 90.2% of students had good knowledge, 55.8% had a good attitude, 61% had poor practice and 43.3% experienced COVID-19 from 113 respondents. From the results of the bivariate analysis, it was found that there was a relationship between the level of knowledge and the incidence of COVID-19 (p-value = 0.001), the level of attitude with the incidence of COVID-19 (p-value = 0.042) and the level of practice with the incidence of COVID-19 (p-value = 0.014). So it can be said that the higher the knowledge, attitude, and practice of the 5M health protocols, the more students will be protected from COVID-19 in the 2018 UKI FK students.

Keywords: COVID-19, Health Protocol, Knowledge, Attitude, Practice

INTRODUCTION

From data collected by WHO as of July 4 2021, globally there were 182,319,261 confirmed cases of COVID-19 and 3,954,324 cases declared dead due to COVID-19. Indonesia is also one of the countries affected by the COVID-19 pandemic, which is at the 17th level of the total cumulative international cases [1].

In response to this pandemic, Indonesia has created a useful Health Protocol to prevent and control the spread of COVID-19 in society as regulated in HK.01.07/MENKES/382/2020. This health protocol consists of wearing a mask, washing hands, maintaining distance between other people, and implementing clean and healthy

living behavior (PHBS). and limit mobility [3]

In June 2021, there was a very high increase in the number of daily positive cases in Indonesia, namely 21,345 positive cases per day. The increase in cases started one week after the Eid holiday period and increased sharply in the 4th week after the Eid holiday period, this was caused by the emergence of a new SARS-CoV-2 variant which was exacerbated by high mobility and lax health protocols [4], and recently on November 24, 2021, a new variant emerged originating from South Africa which was named Omicron and has spread throughout the world, this variant has been included in the Variant of concern (VOC). 5 This variant must be of concern because it has a spread rate 5 times faster than Other variants including the Delta variant, as well as the Omicron variant reduce the effectiveness of the Pfizer vaccine which has been given 2 doses by 33%. 5 So even though the vaccine is available, health protocols must still be implemented to reduce the risk of transmission. This is because the SARS-CoV-2 virus continues to mutate, which has the potential to affect the effectiveness of a vaccine, as happened with the Delta and Omicron variants [5,6].

On the other hand, the Ministry of Education, Culture, Research and Technology (KEMENDIKBUD) will soon hold face-to-face learning (PTM) in the 2021/2022 academic year. One of the conditions for implementing this PTM is that universities are ready to implement health protocols. Meanwhile, according to systematic review research, face-to-face schools increase the risk of transmitting COVID-19 [7,8].

Even though several factors cannot be changed, such as chronic diseases and old age, by adhering to health protocols aimed at preventing the spread and transmission, it is hoped that we can reduce the risk of contracting the disease COVID-19 [9,10,11]. The 5M Health Protocol is a healthy behavior that aims to prevent the transmission of COVID-19, so it can be estimated that good knowledge, attitudes, and practices of the 5M

Health Protocol can influence the transmission of COVID-19. According to Notoatmodjo, behavior change occurs through a process of change that starts from knowledge, then becomes an attitude, and then becomes practice [3,12]. According to research conducted by Ray et al, it is said that there is a relationship between people's knowledge, attitudes, and behavior towards preventing the COVID-19 pandemic in Tanjung Balai. Also according to Sembiring, knowledge and attitudes toward COVID-19 are related to the risk of contracting COVID-19 [13,14].

Following the directions given by the Ministry of Education and Culture, the Indonesian Christian University Faculty of Medicine has conducted face-to-face learning in several types of learning such as practicums and skills labs which can increase the risk of transmitting COVID-19 in the campus environment. Thus, researchers want to investigate whether there is a relationship between the level of knowledge, attitudes, and practice of the 5M health protocol on the incidence of COVID-19 among students from the Faculty of Medicine at the Indonesian Christian University class of 2018.

Research Problem

Is there a relationship between the level of knowledge, attitudes and practice of the 5M health protocol on the incidence of COVID-19 among FK UKI students?

General objectives

Knowing the relationship between the level of knowledge, attitudes and practice of the 5M health protocol on the incidence of COVID-19 among FK UKI students class of 2018 in 2022.

Specific Objectives

1. Find out the gender frequency distribution of FK UKI students class of 2018 in 2022.
2. Understand the level of knowledge, attitudes and practice of the 5M health protocol for FK UKI students class of 2018 in 2022.

3. Find out the description of the incidence of COVID-19 among FK UKI students class of 2018 within a period of 1 year in 2022.
4. Find out the relationship between the level of knowledge of the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018 in 2022.
5. Find out the relationship between the level of attitude towards the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018 in 2022.
6. Find out the relationship between the level of practice of the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018 in 2022.

MATERIALS & METHODS
Research Design
This study uses an analytical survey design with a cross-sectional method, where the dependent variable and independent variables are measured at the same time. 45 The incidence of COVID-19 is the dependent variable in this study, while the independent variables are the level of knowledge, attitudes, and practices toward the 5M health protocol.

This research aims to determine the relationship between the level of knowledge, attitudes, and practice of the 5M health protocol on the incidence of COVID-19 among FK UKI students in 2021.

Place and Time of Research
This research was conducted at the Faculty of Medicine, Indonesian Christian University by distributing a Google form-based questionnaire to students at the Faculty of Medicine, Indonesian Christian University.
The research period will be carried out for 7 days starting on Monday, March 7 2022 to Monday, March 14, 2022.

Research Population and Sample
In this study the population and sample are as follows:

Population
The population in this study were all students from the Faculty of Medicine, Indonesian Christian University, class of 2018, totaling 158 students.

Sample
The sample in this study were students from the Faculty of Medicine, Indonesian Christian University who met the inclusion criteria. The sampling technique used in this research is simple random sampling, which means that the sample will be taken at random. 45 So the number of samples will be representative of the entire population. To determine the size of the sample, this research will use the Slovin formula with the formula:

$$n = \frac{N}{1 + N(d)^2}$$

$$n = \frac{158}{1 + 158(0,05)^2}$$

$$n = 113$$

Inclusion and Exclusion Criteria
Inclusion Criteria
Inclusion criteria are the characteristics that research subjects must have to be used as a sample45. Indonesian Christian University Faculty of Medicine students in 2018 who were willing to fill out an informed consent form were included in this research.
Exclusion Criteria
The characteristics of individuals from the population who cannot be used as research samples are known as exclusion criteria. 45 Students from the Medical Faculty of the Indonesian Christian University who were not/inactive were excluded from this study.

Data Collection
How to Collect Data
The information collected in this research is first-hand information. Primary data is information collected directly from research participants through observation, interviews, or questionnaires.

Data Collection Instrument

The questionnaire was used in this research as an instrument to assess the level of knowledge, attitudes, and practices of the 5M health protocol, as well as the incidence of COVID-19 among FK UKI students class of 2018. The knowledge variable was calculated using the Guttman scale while the attitude and practice variables were calculated using a Likert scale. To determine the incidence of COVID-19, one question will be given regarding the positive incidence of COVID-19 within a period of 1 year with the answers "yes" and "no".

Validity test

The validity test was carried out by comparing the r table which was tested on 30 respondents with a significance level of 0.05 with an r table of 0.3494. The question item will be considered valid if the calculated r is > 0.3494. Validity testing will be carried out using the Statistical product and service solution (SPSS) application.

Reliability Test

The reliability test will use Cronbach's alpha with the help of the SPSS application. Question items are considered reliable if α > 0.6.

Data Analysis

The data obtained will be processed using the SPSS computer program then the data will be analyzed using univariate and bivariate analysis.

Univariate analysis is an analysis method that aims to obtain an overview of the characteristics and distribution of each research variable expressed in table or graphic form. The analysis in this study was used to obtain the characteristics and distribution of the level of knowledge, attitudes, and practices of the 5M health protocol and the incidence of COVID-19 among students at the Faculty of Medicine, Indonesian Christian University. To categorize the level of knowledge, attitudes, and practices, the following categorization will be carried out.

Knowledge category
- Good: > 75% correct answers
- Not good: ≤ 75% correct answers
- Attitude category
- Good: Score ≥ median
- Poor: Score < median
- Practice category
- Good: Score ≥ median
- Poor: Score < median

After obtaining the characteristics and distribution, a bivariate analysis was carried out to prove whether or not there was a correlation between the level of knowledge, attitudes, and practice of the 5M health protocol and the incidence of COVID-19. To determine whether there is a relationship, the comparative test Fisher's Exact Test and Chi-square will be used.

RESULT

1. Description of the Characteristics of Research Respondents

In this study, researchers chose FK UKI students as the research population consisting of 158 students. As a form of research ethics, subjects first fill out an informed consent form before continuing to fill out the questionnaire online.

From 158 students, researchers then selected 113 data randomly/random sampling to represent this research.

1.1. Frequency Distribution of Respondent Characteristics by Gender

Table 1. Frequency Distribution of Respondent Characteristics by Gender

Gender	Frequency	Percentage (%)
Male	31	27,4
Female	82	72,6
Total	**113**	**100**

From Table 1, it is known that the gender of respondents is dominated by females with a percentage of 72.6%, totaling 82 respondents, while male respondents are 27.4% or 31 respondents.

1.2. Frequency Distribution of Respondent Characteristics Based on the Event of COVID-19
1.3.

Table 2. Frequency Distribution Tables of Respondents Based on the Event of COVID-19

COVID-19 Incident	Frequency	Percentage (%)
Yes	49	43,4
No	64	56,6
Total	**113**	**100**

From table 2 above, it is known that 49 respondents, or 43.4% of respondents had contracted COVID-19 at least once in the last year and 56.6%, or 64 respondents had never contracted COVID-19. From the data above, it is known that the majority of FK UKI students have not been infected with COVID-19 in the last 1 year.

2. Univariate Analysis Results
2.1. Frequency Distribution of Respondents Based on Level of Knowledge

Table 3. Frequency Distribution Based on Level of Knowledge

Variable	Category	Frequency	Percentage (%)
Knowledge	Good	102	90,3
	Not Good	11	9,7
Total		**113**	**100**

Table 3 shows that out of 113 students, 102 respondents (90.3%) had good knowledge of the 5M health protocol and 11 respondents (9.7%) had poor knowledge of the 5M health protocol. Thus, the majority of FK UKI students have good knowledge of COVID-19.

2.2. Frequency Distribution of Respondents Based on Attitude Level

In the attitude variable, the attitude level will be divided into 2 categories based on the mean. The median of respondents' attitudes is 50.

Table 4. Frequency Distribution Based on Respondent's Attitude Level

Variable	Kategori	Frequency	Percentage (%)
Attitude	Good	63	55,8
	Bad	50	44,2
Total		**113**	**100**

Based on table 4, it shows that the majority of respondents' attitudes towards the 5M health protocol are good, consisting of 63 respondents (55.8%) and 50 respondents (44.2%) who have a bad attitude towards the 5M health protocol. So, as a whole, FK UKI students have a good attitude towards the 5M health protocol.

2.3. Frequency Distribution of Respondents Based on Practice Level

Just like attitude, in this research attitude is divided into 2 categories, namely good and poor, with the mean as the cut-off. The median obtained from respondents was 34

Table 5. Frequency Distribution Based on Respondent's Practice Level

Variable	Category	Frequency	Percentage (%)
Practice	Good	52	46
	Not Good	61	54
Total		**113**	**100**

Table 5 shows that the practice of the 5M health protocol is that 52 respondents (46%) practice it well, and 61 respondents (54%) practice it poorly. Thus, the practice of health protocols for the majority of FK UKI students is lacking.

3. Bivariate Analysis Results
3.1. Relationship between the level of knowledge of the 5M health protocol and the incidence of COVID-19

Table 6. Tables of the Relationship between the Level of Knowledge of the 5M Health Protocol and the Incident of COVID-19 Using the Fisher's Exact Test

Level of Knowledge	COVID-19 incident		Total
	Yes	No	
Good	39	63	102
Not Good	10	1	11
Total			113
p Value	0,001		

From Table 6 it can be seen that 102 respondents (90.3%) had good knowledge, of which 39 respondents (34.5%) had been infected with COVID-19 and 63 respondents (55.8%) had never been infected with COVID-19 in 1 last year. The remaining 11 people had insufficient knowledge and of them 10 respondents had contracted COVID-19 and 1 respondent had never contracted COVID-19.

The results of the Fisher's Exact Test showed a p-value of 0.001, so it can be concluded that the level of knowledge is related to the incidence of COVID-19 because the p-value is <0.05.

3.2. Relationship between the level of attitude towards the 5M health protocol and the incidence of COVID-19

Table 7. Tables of the Relationship between Attitude Levels towards the 5M Health Protocol and the Incident of COVID-19 Using the Chi-Square Test

Attitude	COVID-19 incident		Total
	Yes	No	
Good	22	41	63
Bad	27	23	50
Total			**113**
p Value	**0,042**		

Table I7 shows that of the 63 respondents (55.8%) who had a good attitude, 22 respondents (19.4%) had been infected with COVID-19 and 41 respondents (36.2%) had never been infected with COVID-19 during this period. 1 year. It is also known that 50 respondents (44.2%) have a bad attitude, of which 27 respondents (23.8%) have been infected and 23 respondents (20.3%) have never been infected with COVID-19 in the last 1 year.

From the results of the Chi-Square test, a p-value of 0.030 was obtained, which can be interpreted as indicating that the level of attitude is related to the incidence of COVID-19 because the p-value is <0.05. According to Notoatmodjo, attitude is a person's tendency to do something, however, not always a good attitude will become a practice or manifest in a person's behavior. To form behavior from attitudes, several other factors are needed, such as the availability of facilities or facilities and infrastructure [12].

3.3 Relationship between 5M Health Protocol Practices and the Incident of COVID-19

Table 8. Tables of the Relationship between 5M Health Protocol Practices and the Incident of COVID-19 Using the Chi-Square Test

Practice	COVID-19 incident		Total
	Yes	No	
Good	29	23	52
Not Good	20	41	61
Total			**113**
p Value	**0,014**		

Table 8 shows that there are 52 respondents (46%) who have good practices, of which 29 respondents (25.6%) have contracted COVID-19 and 23 respondents (20.3%) have never contracted COVID-19 in the last year. There were also 61 respondents (53.9%) who had poor practice, of which 20 (17.7%) respondents had contracted COVID-19 and 41 (36.2%) respondents had never contracted COVID-19 in the last 1 year. The Chi-square test obtained a p-value of 0.014, which means that practice is related to the incidence of COVID-19 because the p-value is <0.05.

DISCUSSION

Based on the results of the research conducted, it is known that the majority of FK UKI students class of 2018 have good knowledge (90.3%). In the bivariate results, a relationship was found between the level of

knowledge and the incidence of COVID-19 with a p-value <0.05 in the Fisher exact test. From other research conducted by Panjaitan MR, a relationship was found between knowledge of health protocols and incidents in families assisted by FK UMSU class of 2018 with a p-value of 0.004.46 The majority of the attitudes of the 2018 FK UKI students were good towards the 5M health protocol, namely 69.9%, and a relationship was also found between the level of attitude and the incidence of COVID-19 with a p-value <0.05 in the Chi-square test [12]

According to Siregar, good knowledge will foster a positive attitude. This is shown by the finding of a significant relationship between knowledge and attitudes about health protocols with a p-value of 0.000 [47] This research is also in line with research conducted by Sembiring on the people of North Sulawesi, which found a relationship between knowledge and attitudes towards the risk of contracting COVID-19 with a p-value of 0.000 [14]

From the univariate analysis of the level of practice of the 5M health protocol, it was found that the majority of FK UKI students class of 2018 were lacking (54%) in practicing the 5M health protocol. 12 In the results of the bivariate analysis test it was found that there was a significant relationship between the level of practice of the 5M health protocol and the incidence of COVID-19 because in the Chi-square test, the p-value was <0.05.

Even though the majority of respondents have good knowledge and attitudes towards health protocols, this does not always form practice, because realizing practice also depends on internal and external factors such as social and cultural factors as well as the availability of facilities and infrastructure. 12 This research is also in line with research carried out by Aghniya and Nafi in Ima'an Village, where the village implemented the 5M health protocol well so that there were no cases of death due to COVID-19 [48]

The 5M health protocol is an action to prevent the transmission of COVID-19 by deciding the transmission route of COVID-19 so that by implementing the 5M health protocol respondents will be more protected from COVID-19 [23].

Overall, this research is also in line with research conducted by Ray et al, which found a relationship between knowledge, attitudes, and behavior in preventing COVID-19 and COVID-19 status with a p-value of 0.001 [13].

This research is in line with the S-O-R behavior theory of behavior change that, behavior is all activities that can be observed (practice) and those that cannot (knowledge, attitudes). Behavior change begins with stimulus, in this case, the stimulus is the promotion of the 5M health protocol which has been disseminated through various media. If the stimulus is received, the stimulus will be processed so that the respondent is ready to act or practice the 5M health protocol, then the respondent can avoid COVID-19 [12].

CONCLUSION

1. The majority of respondents in this study were women (72.26%)
2. The majority of the 2018 FK UKI students' level of knowledge regarding the 5M health protocol is good (90.3%), as is their attitude (55.8%), however the majority of the 5M health protocol's practice level is in the poor category (54%).
3. The majority of FK UKI students class of 2018 in 2022 have never contracted COVID-19 in the last year (56.6%).
4. There is a relationship between the level of knowledge of the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018.
5. There is a relationship between the level of attitude towards the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018.
6. There is a relationship between the level of practice of the 5M health protocol and the incidence of COVID-19 among FK UKI students class of 2018.

Declaration by Authors

Ethical Approval: Approved

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