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Indonesian community knowledge, attitude and behavior towards COVID-19 vaccination

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ABSTRACT

Introduction: Coronavirus Disease 2019 (COVID-19) has spread throughout the world, including Indonesia, so it is designated as a pandemic. To prevent the wider spread of COVID-19 transmission, the Indonesian government has implemented a COVID-19 vaccination program. The community knowledge, attitudes, and behavior towards COVID-19 vaccination are needed to support the success of this program. Therefore, this research aims to determine the Indonesian community knowledge, attitudes, and behavior towards COVID-19 vaccination.

Methods: This research was conducted by non-experimental observation with a cross sectional approach. Sampling using accidental sampling technique with the duration of the distribution of the e-questionnaire for 30 days. The sample of this research is the Indonesian community. The data were processed using descriptive statistical tests.

Results: The results of the univariate analysis with a total of 662 respondents showed that the majority of respondents were female, aged 18 to 25 years, educated in Senior High School/Equivalent, Muslim, domiciled in Riau, student, and received information from social media and other online media. The majority of respondents have a good level of knowledge with a score of 80.1%, have a positive attitude and behavior with a score of 53.5% and 51.8%.

Conclusion: The Indonesian community have a good level of knowledge, as well as positive attitudes and behaviors towards COVID-19 vaccination.

Keywords: Attitudes, Behavior, COVID-19, Indonesia, Knowledge, Vaccination.
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INTRODUCTION

The spread of COVID-19 caused by SARS-CoV-2 is through secretions such as saliva or droplets that are released when an infected person coughs, sneezes, or speaks. The time between a person's exposure to COVID-19 and the appearance of symptoms on average is 5 to 6 days, but can also be up to 14 days.[1] The most common symptoms are fever, dry cough, and fatigue.[2] The spread of the COVID-19 virus is getting faster and faster and poses a threat to all countries in the world, including Indonesia. Based on data from WHO, as of May 31, 2022, there are 230 countries that have been infected with COVID-19, including Indonesia, with a total number of confirmed positive cases of COVID-19 worldwide is 532,231,831 people and 6,312,181 people have died, while in Indonesia alone there are 6,054,973 people were confirmed positive for COVID-19 and 156,591 people died.[3] The World Health Organization (WHO) has declared the COVID-19 outbreak a global pandemic.

Due to serious situation like this, one of the most effective ways to break the chain of transmission of COVID-19 is by developing vaccines. The development of a safe and effective vaccine is very important because it is expected to be able to inhibit and break the chain of the spread of COVID-19, as well as prevent its recurrence in the future. In addition, because the COVID-19 pandemic is spreading very quickly, it is necessary to have a vaccine that can be produced in a fairly short time, because in general, vaccine production takes years.[4] The use of vaccines to break the chain of spread of COVID-19 is one of the efforts to protect ourself and others from the transmission of the COVID-19 outbreak.

Based on the results of a national survey by the Ministry of Health of the Republic of Indonesia, the Indonesian Technical Advisory Group on Immunization (ITAGI), the United Nations International Children's Emergency Fund (UNICEF) and WHO in 2020, 64.8% of respondents stated they were willing to accept the COVID-19 vaccine, 7.6% of them refused, and the remaining 27.6% stated that they were still unsure about the COVID-19 vaccine distribution by the government. The most common reasons for this refusal are related to security (30%); still dubious effectiveness (22%); distrust (13%); worry about side effects (12%); and halalness (8%).[5] An online survey conducted by the Ministry of Religion of the Republic of Indonesia (2020) also showed that 2,610 participants from 34 provinces viewed that religious factors were not the reason for the people's refusal to receive COVID-19 vaccinations. However, the community is worried about the safety of COVID-19 vaccination as many as 66,13% of respondents. Many of them wanted to know more information regarding the COVID-19 vaccination.[6] Thus, research to analyze the level of knowledge, attitudes and behavior of the community towards

COVID-19 vaccination is very important and relevant to conditions in today's society.

The lack of information related to the COVID-19 vaccine has caused many Indonesian people receive hoax information, such as residents who do not get correct information about the COVID-19 vaccination. Therefore, it is necessary to know the level of knowledge, attitudes and behavior of the people in Indonesia towards the COVID-19 vaccination which will have an impact on the implementation of the mandatory vaccination policy implemented by the Indonesian government to achieve herd immunity. The doubts that occurred in the community arose because of the lack of public knowledge about the COVID-19 vaccine accompanied by a lot of hoax information about the COVID-19 vaccine circulating in the community, and many people still question the safety and halalness of the COVID-19 vaccine. Therefore, a good level of knowledge is very much needed in the public's view of the implementation of the COVID-19 vaccination in Indonesia because knowledge itself affects a person's attitude and behavior in doing something. This research aims to determine the Indonesian community knowledge, attitudes, and behavior towards COVID-19 vaccination

METHODS

This research method is observational with a cross sectional approach. This research was conducted by distributing e-questionnaires throughout Indonesia through social media for a month starting in May - June 2021. The population in this research was all Indonesian community. Inclusion criteria in this study include: Indonesian community who have smartphones/gadgets and are willing to fill out a complete e-questionnaire. Exclusion criteria in this study include: Indonesian community who do not complete the e-questionnaire and health workers. The sampling technique used is accidental sampling. The instrument used in this research is a google form questionnaire which contains the characteristics of respondents and questions to measure the level of knowledge, attitudes and behavior of respondents developed by the researcher. The questionnaire has been tested for validity and reliability. The statistical data test used is a descriptive test. This research has received ethical approval from the Ethics Committee of the Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta, Indonesia with number 074/EC-KEPK FKIK UMY/III/2021.

RESULTS

The results of the validity and reliability test of the knowledge, attitude, and behavior questionnaires show valid and reliable results with the r count > r table (0.279) and cronbach's alpha coefficient value > 0.60.

The total respondents in this study were 1,680 respondents from all regions in Indonesia. Respondents came from 34 provinces in Indonesia. The majority of respondents were female, as many as 1247 respondents (74,2%). Most of the respondents (14,6%) came from West Java, were aged 18 to 25 years old (69,4%), were Islam religion (87,5%), had the last education status of Senior High School/Equivalent and are students (62,8%). The most widely used sources of information by respondents to obtain information related to the COVID-19 vaccination are social media and other online media (41,4%). The distribution of respondents characteristics is shown in table 1.

Of the 14 questions to measure the level of knowledge of respondents about COVID-19 vaccination, there are 13 questions that can be answered correctly by the majority of respondents. Based on table 2, the knowledge level variable show that 84,0% of respondents have good knowledge, 14,9% of respondents have enough knowledge, and 1,1% of respondents have not enough knowledge of COVID-19 vaccination.

Based on table 3, the attitude of the majority of respondents is positive towards COVID-19 vaccination (55.4%). A total of 68.6% of respondents strongly agreed to continue to do 3M (wearing masks, keep distance, and wash hands) after being vaccinated against COVID-19 and as many as 70.8% also strongly agree that to be safer, people with certain conditions and diseases need to be checked before being vaccinated against COVID-19.

Based on table 4, the majority of Indonesian community have positive behavior towards COVID-19 vaccination, with a percentage of 53.6%. Almost all respondents have also increased efforts to improve personal health such as 81.1% of respondents always use a mask every time they leave the house.

DISCUSSION

The validity test of questionnaire is conducted to show the measuring instrument that used can actually measure what is intended to be measured. Meanwhile, reliability tests are carried out to determine the reliability and consistency of measuring instruments if they are carried out twice or more under the same conditions. The validity and reliability tests in this study were conducted on 50 random respondent data use with a significant level of 95%.

The validity test was conducted by using the bivariate pearson test of each question item and comparing the results of the r count and r table values. If the value of r count > r table, then the question item is considered valid. While the reliability test was conducted using the cronbach's alpha test method which was carried out on all question items at once. The reliability test was conducted by comparing the values of count and table. If the value of count > table, then all question items are considered reliable.

The results of the validity test level of knowledge, attitude and behavior questionnaire in this research showed that all question items could be declared valid because they had r count > r table (0.279). The results of the reliability test of the knowledge, attitude and behavior questionnaire also showed reliable results because it had a cronbach's alpha coefficient value > 0.60.

The number of respondents obtained from filling out the e-questionnaire in this research were 1680 respondents. After screening, the total respondents who can be used are 1680. This means that all respondents who filled out the questionnaire can be used in this research because they meet the inclusion and exclusion criteria of the study. Respondents came from 34 provinces in Indonesia. Most of the respondents came from West

Table 1. Distribution of Respondents Characteristics.

Characteristic of Respondents	N	Percentage (%)
A. Domicile		
West Java	**245**	**14,6**
East Java	215	12,8
Central Java	198	11,8
Special Capital District of Jakarta	155	9,2
Riau	128	7,6
Banten	103	6,1
Special Region of Yogyakarta	102	6,1
North Sumatera	62	3,7
Lampung	51	3
South Sumatera	44	2,6
Bali	41	2,4
West Sumatera	40	2,4
East Kalimantan	36	2,1
South Kalimantan	31	1,8
Bangka Belitung Islands	27	1,6
Riau Islands	25	1,5
South Sulawesi	22	1,3
Jambi	21	1,2
Nanggroe Aceh Darussalam	19	1,1
West Nusa Tenggara	17	1
West Kalimantan	14	0,8
East Nusa Tenggara	13	0,8
Central Kalimantan	13	0,8
Bengkulu	13	0,8
Southeast Sulawesi	10	0,6
Maluku	7	0,4
North Kalimantan	7	0,4
North Sulawesi	6	0,4
North Maluku	4	0,2
Central Sulawesi	3	0,2
Gorontalo	3	0,2
West Sulawesi	2	0,1
Papua	2	0,1
West Papua	1	0,1
Total	1680	100,0
B. Gender		
Female	**1247**	**74,2**
Male	433	25,8
Total	1680	100,0
C. Age		
Less than 18 years old	338	20,1
18 to 25 years old	**1166**	**69,4**
26 to 45 years old	165	9,8
46 to 65 years old	8	0,5
More than 65 years old	3	0,2
Total	1680	100,0
D. Religion		
Islam	**1470**	**87,5**
Protestan	103	6,1
Katolik	45	2,7
Hindu	36	2,1
Budha	21	1,2

Java, as many as 245 respondents (14.6%) and the majority of respondents were female, as many as 1247 respondents (74.2%). Previous survey shows women use the internet more for e-mail and obtain information about health and religion, while men use the internet more for information, such as reading news, sports and weather (ref). This research is a research on health, which is a topic that women are more interested in. This can be one of the factors why the respondents in this study are more female than male.[7]

In terms of age, the majority of respondents were 18 to 25 years old. The data show that the internet users are dominated by the millennial generation in the age range from 19 years to 34 years.[7] So this is in line with the majority of respondents in this research, who were 18 years old up to 25 years. Most of the respondents have the last education status of Senior High School/Equivalent and are students. As many as 87,5% of respondents's religion in this study is Islam. This is because the majority of the Indonesian population embraces Islam with a percentage of 87.2%.[8] The most widely used sources of information by respondents to obtain information related to the COVID-19 vaccination are social media and other online media. This is because 56% of the 268.2 million population in Indonesia are active users of social media. From these data it can be seen that newspapers and television are not the main media for society in this era. More than 50% of the community hopes to find and fulfill their need for information sources through other media, namely social media.[9] It can be said that social media is an effective information channel for the public in conveying messages about the COVID-19 vaccine.

The level of knowledge of the respondents was assessed by providing 14 questions through an e-questionnaire. Each question has three answer options consisting of true statements, false statements, and don't know. Respondents can choose one answer option that is considered the most correct. The knowledge of the community in this study will be described one by one for each question according to the answer options that have been chosen by the respondent

Characteristic of Respondents	N	Percentage (%)
Konghucu	5	0,3
Total	1680	100,0
E. Education		
Primary School /Equal,	36	2,1
Junior High School/Equal	219	13,0
High School/ Equal	**1055**	**62,8**
Diploma, Bachelor	348	20,7
Magister, Specialist, Doctor	20	1,2
No School	2	0,1
Total	1680	100,0
F. Profession		
Student/College Student	**1175**	**69,9**
Civil Servant/ Private Employees	184	11
Unemployement	103	6,1
Entrepreneur	86	5,1
Housewife	50	3
Daily Worker	28	1,7
Farmer worker	4	0,2
Retired	2	0,1
Other	48	2,9
Total	1680	100,0
G. Sources of information		
Social media and other online media	**695**	**41,4**
Electronic media and print media	401	23,9
Family	230	13,7
Health workers	198	11,8
Educators/school	149	8,9
Friend	2	0,1
Other	5	0,2
Total	1680	100,0

Table 2. Respondents' Knowledge Level.

Knowledge	Frequency	Percentage(%)
Good	1411	84,0
Enough	250	14,9
Not Enough	19	1,1
Total	1680	100.0

Table 3. Respondent's Attitude.

Attitude	Frequency	Percentage (%)
Positive	931	55,4
Negative	749	44,6
Total	**1680**	**100.0**

Table 4. Respondents Behavior.

Behavior	Frequency	Percentage (%)
Positive	900	53,6
Negative	780	46,4
Total	1680	100.0

and will later be changed in the form of frequency and percentage.

Of the 14 questions to measure the level of knowledge of respondents about COVID-19 vaccination, there are 13 questions that can be answered correctly by the majority of respondents. These questions are questions number 1 to 8 and questions 10 to 14. A total of 97.9% of respondents already know that this virus was first discovered in December 2019 in Wuhan, China and as many as 96.8% of respondents already know that the Indonesian Government implements the 3M program (Wearing masks, Maintain distance, Wash hands) and 3T (Tracing, Testing, Treatment) to overcome the COVID-19 pandemic in Indonesia. As many as 89.7% and 84.7% of respondents answered correctly regarding the general definition of vaccines and vaccinations. As many as 97.3% of respondents already know that the Government of Indonesia will implement a COVID-19 vaccination program to prevent the spread of COVID-19 transmission. As many as 63.7% already know about herd immunity or the population is immune to get group immunity against the COVID-19 virus, which is required at least 60-80% and as many as 83.1% of respondents also know that the COVID-19 vaccination will be divided into 4 stages, namely the the first stage is for health workers, the second stage is for public officers and the elderly, the third stage is for vulnerable communities (located in areas with high risk of transmission) and stage four is for other communities (based on a cluster approach). Only 15.3% of respondents did not know that vaccination would be carried out in 4 stages.

Of the total respondents obtained, there were 82.2% of respondents who knew that the type of vaccine used for the COVID-19 vaccination in Indonesia in the first stage was the Sinovac vaccine. A total of 53.5% of respondents already know that the Sinovac vaccine to be used in Indonesia has passed phase three clinical trials. However, there are still 45,5% of the respondents who do not know about the Sinovac vaccine has passed phase three clinical trials in Indonesia. As many as 78.1% of respondents have answered correctly that the Sinovac vaccine has been approved for use by NA-DFC in the form of Emergency Use Authorization (USA) and the MUI Halal Fatwa. And as many as 63.0% of respondents knew that the Sinovac vaccine was given twice at a distance.

Side effects caused by Sinovac vaccine are mild to moderate, namely local side effects in the form of pain, irritation, redness and swelling. In addition there are systemic side effects such as muscle pain, fatigue and fever. As many as 74.0% of respondents have known the side effects of this Sinovac vaccine and as many as 80.8% of respondents have also answered correctly that the COVID-19 vaccine can be given to the whole community, except for children, pregnant and lactating women, people with immune disorders, people with hypertension. and uncontrolled blood sugar and people on cancer treatment.

From a total of 14 questions to measure people's knowledge level, there is one question where 54.2% of respondents answered they don't know, namely question number nine. A total of 54.2% of respondents did not know that the Sinovac vaccine has an effectiveness of 65.3%. The Sinovac vaccine, which has an effectiveness of 65.3%, is a vaccine based on an inactivated virus. Inactivated vaccines contain all or a small part of the bacteria or viruses that have been killed.[10]

In addition to analyzing the answers to each question, researchers also conducted a descriptive test of the overall answers of respondents to determine the level of knowledge about COVID-19 vaccination. The results of the knowledge level test can be seen in table 2. According to Budiman and Riyanto (2013) before conducting a descriptive analysis on the knowledge level variable, the respondent's knowledge score was calculated using the following formula: knowledge level score = (sum of answer scores/total score) x 100%. The answer score is Agree if the respondent agrees with the statement in the questionnaire, and is given a score of 3; False if the respondent disagree with the statement in the questionnaire, and is given a score of 2; Don't Know if the respondent does not know whether the statement in the questionnaire is true or false, and is given a score of 1.[11] After knowing the knowledge score of each respondent, the next step is to group the score of each respondent into a predetermined category, namely the level of knowledge is good if knowledge score 75%; enough if the knowledge score is 56% - 74%; less if the knowledge score 55%.

The knowledge level variable show that 84,0% of respondents have good knowledge, 14,9% of respondents have enough knowledge, and 1,1% of respondents have not enough knowledge of COVID-19 vaccination. The results of this study are in line with the research by Nugroho et al. (2021) where the level of knowledge level of the majority of respondents is good with a percentage of 43%.[12] The results of the research that show a good level of knowledge can be influenced by several factors, including the level of education, type of information, culture, and experience. The higher a person's education level, the easier and faster it will be for someone to gain access to information that has been provided by the internet through social media.[13] In addition, research conducted by Hidayat (2020) says that a person's level of knowledge can be influenced by length of work with a very low correlation level, gender, education, religion, ethnicity, occupation, and income with a low correlation level, and on characteristics age and domicile with a moderate level of correlation.[14]

Respondents' attitudes towards COVID-19 vaccination were assessed by providing 8 questions through an e-questionnaire. Each question has four answer options consisting of strongly agree with the statement, agree with the statement, disagree with the statement, and strongly disagree with the statement. Respondents can choose one answer option that is considered the most correct. The attitude of the respondents in this study will be described one by one for each question according to the answer options that have been chosen by the respondent and will later be changed in the form of frequency and percentage.

Of all the questions to measure respondents' attitudes towards COVID-19 vaccination, there are two questions where respondents answered strongly agree with these questions, namely questions 3, 6 and 7. A total of 68.6% of respondents strongly agreed to continue to do 3M (wear masks, keep distance, and washing hands with soap) after being vaccinated against COVID-19 and as many as 70.8% also strongly agree that to be safer, people with certain conditions and diseases need to be checked before being vaccinated against COVID-19. As many as 49.2% of respondents strongly agree that the COVID-19 vaccine is given equally to all Indonesians for free.

While the rest, of the 8 questions to measure respondents' attitudes towards COVID-19 vaccination, there were 5 questions that were answered agreeably by the respondents, namely questions 1, 2, 4, 5 and 8. A total of 52.0% of respondents agreed that the implementation of the 3M and 3T programs by the government was effective. to overcome the COVID-19 pandemic in Indonesia and as many as 57.3% of respondents agree that the government program for COVID-19 vaccination is effective in preventing the spread of COVID-19 transmission. As many as 38.7% of respondents strongly agree and as much as 41.5% agree that later the community may be free to choose whether they are willing to be vaccinated or not, but there are some (17.4%) respondents who do not agree with this statement. One of the efforts to stop the spread of the COVID-19 virus is to vaccinate against COVID-19. A total of 47.6% of respondents agreed to get a COVID-19 vaccination as an effort to break the chain of the COVID-19 pandemic. A total of 44.0% of respondents strongly agree and 45.8% of them agree and believe that Indonesia can fight COVID-19 by successfully controlling its transmission through the COVID-19 vaccination program.

In addition to analyzing one by one on each question that has been answered by the respondent, a descriptive test was also carried out on all respondents' answers to find out a picture of the community's attitude towards COVID-19 vaccination. The results of the univariate analysis of the attitude variable can be seen in table 3. According to Hombing (2015) before conducting a descriptive analysis on the attitude variable, the attitude criteria were first grouped, namely a positive attitude if the score T ≥ T mean and negative attitude if the score T < T mean. T score is calculated using the formula: $T = 50 + 10((X-\bar{X})/sd)$.[15] To find out the mean T, the formula is used : T mean = $\Sigma T/n$ (X=Respondent's score on the attitude scale to be converted into a score; $\bar{X}$=Group mean score; sd=Standard

deviation of group scores). Answer score Strongly Agree if the respondent strongly agrees with the questionnaire statement and is given a score of 4; Agree if the respondent agrees and is given a score of 3; Disagree if the respondent is in doubt and is given a score of 2; Strongly Disagree if the respondent does not agree and is given a score of 1.

The attitude of the majority of respondents is positive towards COVID-19 vaccination (55.4%). This is in line with the research of Yoleh Hajure et al. (2021) which shows that 50% of respondents are positive for COVID-19 vaccination.[16] A person's positive attitude is influenced by a high level of knowledge and critical thinking over the problem. This research is in accordance with the theory that most respondents who have good knowledge will have a good attitude as well.[13] In addition, research conducted by Hidayat (2020) says that a person's attitude can be influenced by gender with a very low correlation, as well as domicile with a low correlation level.[14]

The efforts to prevent COVID-19 can be seen from the behavior of a person to protect himself and others from the transmission of the virus. The first behavioral assessment is to ask questions about whether the respondent wears a mask every time he leaves the house. The results obtained are 81.1% of respondents always use a mask every time they leave the house. Almost all respondents have also increased efforts to improve personal health. A total of 43.2% of respondents always and 32.5% of respondents often wash their hands with soap and running water for 20 seconds after each activity or use a hand sanitizer. Using running water and soap to wash hands is the most important factor for maintaining health, because various disease-causing pathogens can be spread only through hands. Transmission of COVID-19 can still occur if a person touches a contaminated item, then touches the eyes, nose, or mouth. Therefore, to avoid the transmission of the COVID-19 virus, one way is to frequently wash your hands with soap and running water or use a hand sanitizer.

In addition to wearing masks and washing hands, other ways that can be done to prevent the spread of the COVID-19 virus are to maintain a distance of at least one meter from other people and avoid meeting with large crowds. In this study, there were still a few respondents who always kept their distance and avoided meeting with many people, which was only 34.1% of the total respondents. In fact, as many as 26.3% of respondents only sometimes keep their distance and avoid crowds. Likewise, by not shaking hands or touching hands with other people, there are still a few respondents who always (30.7%) and often (31.1%) do this. This also happened to the question about avoiding touching the face (especially the eyes, nose, mouth), very few (27.5%) of respondents always did this, even 41.1% of respondents only did it occasionally. The behavior of respondents who avoid touching objects or surfaces in public areas in this study is almost evenly divided, namely they always do it (31.0%), do it often (35.5%), and sometimes do it (30.5%). Only 34.7% of respondents who came home from traveling always took a shower and changed the clothes they wore before contact with family members, some respondents did this sometimes (31.7%).

As many as 51.1% of respondents will always tell the people around if the respondent shows symptoms of the disease. Considering that a good immune system is needed to prevent the transmission of the COVID-19 virus, respondents always (42.6%) and often (32.6%) maintain their immune system by consuming vitamins, eating nutritious food and exercising regularly. As many as 49.8% of respondents always avoid using public transportation, such as angkot, buses, trains and online transportation. Although the majority of respondents always maintain their immune system and avoid using public transportation, there are still very few (29.8%) respondents who always follow the development of information about COVID-19 and efforts to control COVID-19. As many as 36.4% of respondents only occasionally follow the development of information about COVID-19 and efforts to control COVID-19. In fact, only very few respondents always (20.1%) or frequently (21.0%) educate and encourage people around them to vaccinate against COVID-19, but as many as 30.2% of respondents never do it.

In addition to analyzing one by one on each question that has been answered by the respondent, a descriptive test was also carried out on the entire respondent's answer to find out a description of community behavior towards ways to prevent the transmission of COVID-19. The results of the descriptive test of behavioral variables can be seen in table 4. Headings according to Azwar[17] before carrying out a descriptive analysis on behavioral variables, first the behavioral criteria are grouped using categories, namely positive behavior if the score is T ≥ T the mean and negative behavior if the score T < T mean. T score is calculated using the formula $T = 50 + 10 ((X-\overline{X})/sd)$. To find out the mean T, the formula used : T mean = $\Sigma T/n$ (X=Respondent's score on the attitude scale to be converted into a score; $\overline{X}$=group mean score; sd=Standard deviation of group scores). The answer score is Always if the respondent strongly agrees with the questionnaire statement and is given a score of 4; Often if the respondent agrees and is given a score of 3; Sometimes if the respondent is in doubt and is given a score of 2; Never if the respondent does not agree and is given a score of 1.[17]

The majority of Indonesian community have positive behavior towards COVID-19 vaccination, with a percentage of 53,6%. The results of this research are in line with research conducted by Yanti et al. (2020) with the results of the study that the majority of respondents had good behavior with a percentage of 93%.[13] A person's behavior depends on his assumed intentions. Intention is a precursor to one's behavior. The majority of respondents have positive behavior. It can be caused by several factors, namely internal factors including knowledge, perception, emotions, and motivation, and external (environmental) factors.[13] In addition, research conducted by Hidayat (2020) says that a person's behavior can be influenced by education, religion, and work with very low correlation strength, gender and ethnicity with low correlation strength.[14]

In this research the majority of respondents had a good level of knowledge, a positive attitude and behavior. This could be due to a successful of campaigns

on how to prevent the transmission of COVID-19 by the government. The campaigns that have been carried out by the government to the community are mostly one-way, namely the public communication approach. Where public communication is an interaction between messengers, namely the government and the community as message recipients tend to be less or limited.[18] Effective strategic models in health promotion carried out by the government need to be reconsidered, especially in the era of the COVID-19 pandemic. Therefore, it is necessary to formulate an effective strategy that will be carried out by the government in carrying out health promotion on how to prevent the transmission of COVID-19. There are several recommendations that can be made by the government in increasing promotion of COVID-19 vaccination, namely through social media such as Facebook, WhatsApp, Instagram and Twitter. Social media was chosen as an effective means to promote COVID-19 vaccination because the most widely used sources of information by respondents to obtain information related to COVID-19 vaccination are social media and other online media.

This study has strength because the data related to the level of knowledge, attitudes, and behavior towards COVID-19 vaccination were collected representing the population of 34 provinces in Indonesia, compared to previous studies that were only conducted in certain regions in Indonesia. The limitations of this study is that the sampling was done via e-questionnaires and distributed through multiple social media platforms. As a result, the data in this study only reaches respondents who have access to social media.

CONCLUSION

Based on the analysis that has been carried out in this study, it can be concluded that the Indonesian people have a good level of knowledge, as well as positive attitudes and behaviors towards COVID-19 vaccination. The implication of this study is to ease the contributions of health workers in providing education to the Indonesian community regarding the COVID-19 vaccination, but direct education still needs to be done, especially for community with limited internet access. For future researchers, this study can be a reference to conduct similar research in regions that were not previously accessible, such as regions limited by networks. Policy makers can make regulations that do not burdensome to the community, but still follow the recommendations in dealing with the COVID-19 pandemic.

CONFLICT OF INTEREST

There are no conflicts of interest among the authors regarding the publishing of this article.

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ETHIC APPROVAL

Informed consent was obtained from all respondents before start the study, and this study has received ethical approval from the Ethics Committee of the Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta, Indonesia with number 074/EC-KEPK FKIK UMY/III/2021.

AUTHOR CONTRIBUTION

All authors contributed to the manuscript's preparation and approved the final version for publication.

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