

Acceptance of Covid 19 Vaccine in Terms of Perception and Knowledge: A Cross-Sectional Study

Evita Muslima Isnanda Putri¹, Rahmawati Rahmawati¹, Diana Rachmania²,
Apriyani Puji Hastuti^{3,4}, Fidrotin Azizah¹

¹Lecture in Nursing Departement, Rajeweksi Health College, Bojonegoro Regency 62171 East Java, Indonesia, ²Lecture in Nursing Departement, Karya Husada Health College, Kediri Regency 64225 East Java, Indonesia, ³Lecture in Nursing Departement, Institute of Technology Science and Health Science RS dr Soepraoen, Malang City 65147, Indonesia, ⁴Student in Nursing Doctoral Program, Faculty of Nursing, Airlangga University, Surabaya City 60115, East Java, Indonesia.

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Abstract

The Covid-19 pandemic had an impact on various sectors. One of the efforts to prevent the spread of the virus on a large scale is the Covid-19 vaccine. This study aimed to investigate people's knowledge and perception of acceptance regarding Covid-19 vaccines. Quantitative data were collected using an online survey (n = 299) with accidental sampling. This survey was conducted from March-May 2021 and distributed through social media. Data were collected using questionnaires. The result shows that almost all respondents (93.3%) accept the Covid-19 vaccine with good knowledge (63.2%), sufficient knowledge (6.7%), and a lack of knowledge (13.4%). The OR value (3.78, p = 0.026) means people with good knowledge will receive three times more vaccines than people with less knowledge. Perception of knowledge about the Covid-19 vaccination program led to 13.7 times of acceptance Covid-19 vaccine compared to those who did not know this program (OR 13.7, p=0.01). Knowledge and perception about the Covid-19 vaccine will affect accepting the Covid-19 vaccine. This study recommended This study is expected to be a reference or literature review for determining government policies to implement the Covid-19 Vaccine program in the community.

Keywords: knowledge, perception, acceptance, Covid-19 vaccine

Introduction

The Indonesian government has designated Coronavirus Disease 2019 (Covid-19) as a non-natural disaster in the form of an outbreak/pandemic. This determination was followed by efforts to prevent the spread of the coronavirus through social restrictions,

including restrictions on crowds, travel restrictions, implementation of isolation, postponement and cancellation of events, as well as the closing of facilities and public service arrangements. Covid-19 in Indonesia was first reported on March 2, 2020, in several two cases. Data on March 31, 2020, showed 1,528 confirmed cases and 136 deaths. The Covid-19

mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia¹. Currently, Covid-19 is a major concern of the world. The rapid spread of the disease accompanied by the addition of cases still increasing, including in Indonesia.

The various clinical manifestations of Covid-19 can cause the health system to collapse²⁻⁴. One of the efforts to prevent the spread of the virus on a large scale is the Covid-19 vaccine. The Covid-19 vaccine is the best hope for suppressing the coronavirus transmission. However, many ordinary people still ask about the benefit of the Covid-19 vaccine, how it works, or perhaps the side effects. The public is worried about the Covid-19 vaccine. This Covid-19 vaccine is focused on a national effort towards independent access to safe and effective vaccines. The development of a Covid-19 vaccine is raising public concern about the Covid-19 vaccine program and is worsening as the pandemic progresses. A September survey conducted by the Pew Trust of more than 10,000 Americans showed that intentions to get a Covid-19 vaccine have declined 72% from May 2020 across all major political and demographic groups. The significant decline in public confidence in the Covid-19 vaccine amid the ongoing pandemic signals that greater attention and communication are needed in providing information about the safety and effectiveness of the Covid-19 vaccine in preventing the spread of Covid-19⁵. Although vaccine development is still slower than the spread of the Covid-19 virus, it is hoped that a safe and effective vaccine will be obtained to prevent the spread of this virus. The Covid-19 vaccine may be too late to reduce the number of victims in the first wave around the world, but it will be beneficial later to avoid further waves after this pandemic is over⁶.

This study aimed to investigate people's knowledge and perception of acceptance regarding Covid-19 vaccines.

Methods

This cross-sectional study was conducted between March - May 2021 and distributed through social media. The sample was 299 people with accidental sampling. In this study, the knowledge and perception variables were correlated with

the acceptance of the Covid-19 vaccination in the community.

The data collection tool was a questionnaire regarding sociodemographic characteristics. The sociodemographic characteristics questions were concerning age, gender, education, occupation, and monthly expenses. The researchers developed the questionnaires using items based on the Covid-19 vaccine acceptance survey in Indonesia by the Ministry of Health (2020). A knowledge instrument based on the Technical Instructions for the Implementation of Vaccination in handling the Covid-19 Pandemic from the Ministry of Health. Based on the results of the reliability and validity test of Cronbach's Alpha, with a df of 78 at 5%, it was found that the critical point of the correlation coefficient (r) was 0.222. The reliability test results showed the results of 0.413, so it can be concluded that the questionnaire is reliable and valid. To analyze the relationship between variables with the acceptance of Covid-19 vaccines in the community, it was tested using logistic regression with 5%.

Result

From the result shows that the sociodemographic data of 299 respondents, 74.6% are female, and the majority are adults (95.7%). 63.9% of respondents have high education, and 35.5% have middle education. In the occupational, 47.2% of respondents do not work because of school or joblessness, while most of the respondents' monthly expenditures are moderate (59.9%).

Respondents' perceptions show from 299 respondents, 97% knew that the government was currently holding a Covid-19 vaccination program. Judging from the willingness to pay, 34.4% said they were willing if the Covid-19 vaccination had to be paid for, while 39.5% said they didn't know. The locations chosen to implement vaccinations were in public health centers (24.7%) and hospitals (29.1%). The socialization media chosen to disseminate the vaccination program were through social media (71.7%), and 14.3% directly. There is a significant effect in the perception variable between respondents knowing the Covid-19 vaccination program and receiving the Covid-19 vaccination, indicated by a p-value of 0.01 with an OR of 13.7. This explains

that respondents who know about this vaccination program will be willing/receive 13.7 times more Covid-19 vaccination than those who don't know. Willingness to pay is also significantly related to vaccine receipts, with a P-value of 0.000 which there is a relationship between willingness to pay and receipt of Covid-19 vaccination. The knowledge showed that 66.6% of respondents' knowledge about the covid-19 vaccination is good, and 16.1% lack knowledge.

Table 1: Perception's Participants about Covid-19 vaccine (N =299)

	Variables	N	%
1	Know that vaccines are a government program		
	Know	290	97
	Don't know	9	3
2	Willingness to pay for vaccines		
	Willing to	279	34.4
	Unwilling	78	26.1
	Not know	118	39.5
3	Place of Vaccines		
	Primary Health Care	74	24.7
	Hospital	87	29.1
	Office	56	18.7
	School institution	48	16.1
	Others	14	4.7
4	Socialization Media		
	Social media / Internet	200	71.7
	Electronic/print media	34	12.2

	Directly communication	40	14.3
	Others	5	1.8

Table 2 shows that according to the chi-square test, demographic data in terms of gender, age, education, occupation, and monthly expenditure do not significantly correlate with the acceptance of Covid-19 vaccination. In the perception variable, there is a significant effect between respondents knowing about the Covid-19 vaccination program and receiving Covid-19 vaccination indicated by a p-value of chi-square test 0.01 with an OR of 13.7.

Table 2: Knowledge's Participants about Covid-19 vaccine (N=299)

Variables	N	%
Good knowledge	199	66.6
Moderate knowledge	52	17.4
Lack of knowledge	48	16.1

Table 3: Distribution of Frequency of Public Acceptance of Covid-19 Vaccination in 2021

Variables	N	%
Vaccines Acceptance		
Accept	279	93.3
Un Accept	20	6.7
Reason to not vaccines		
Not sure be safe	13	65
Not sure be effective	3	15
Afraid of side effect	3	15
Religious prohibition	1	5

Table 4: Distribution of Public Acceptance Frequency about Covid-19 Vaccination in terms of Demographics, Perceptions, and Public Knowledge in 2021

Variables	Vaccines Acceptance				P-Value	OR
	Yes	%	No	%		
Demographic						
Participant's Age					1,000	
Adult	266	93	20	7		
Old	13	100	0	0		
Gender					0.602	
Male	70	92.1	6	7.9		
Female	209	93.7	14	6.3		
Education					0.205	
Basic	1	50	1	50		

Variables	Vaccines Acceptance				P-Value	OR
	Yes	%	No	%		
Middle	98	92.5	8	7.5		
High	180	94.2	11	5.8		
Job					0.12	
Jobless	128	90.8	13	9.2		
Civil servant	54	98.2	1	1.8		
Private employee	58	92.1	5	7.9		
Entrepreneur	18	94.7	1	5.3		
Others	21	100	0	0		
Salary					0.233	
Low	70	89.7	8	10.3		
Middle	170	95	9	5		
High	37	94.9	2	5.1		
Very high	2	66.7	1	33.3		
Perception						
Know that vaccines are a government program					0.01	13.7
Know	274	94.5	16	5.5		
Don't know	5	55.6	4	44.4		
Willingness to pay for vaccines					0,000	
Willing to	103	100	0	0		
Unwilling	77	98.7	1	1.3		
Not know	99	83.9	19	16.1		
Knowledge						
Good knowledge	189	95	10	5	0.026	3.78
Moderate knowledge	50	96.2	2	3.8		
Lack of knowledge	40	83.3	8	16.7		

This explains that 13.7 times more respondents who know about this vaccination program will be willing / receive covid-19 vaccination than those who do not know. Willingness to pay is also significantly related to vaccine acceptance, with a P-value of 0.000 means a relationship between willingness to pay and receiving covid-19 vaccination. According to the chi-square test, in the knowledge variable, the p-value is 0.026, which means that the respondent's knowledge significantly affects the acceptance of the Covid-19 vaccination. An OR of 3.78 shows that respondents with good knowledge will receive Covid-19 vaccination 3.78 times more than those with less knowledge.

Discussion

Relationship between knowledge and acceptance of the Covid-19 vaccine.

The OR value (3.78, p = 0.026) was obtained based on the research. It means people with good knowledge will receive vaccinations three times more than people with less knowledge. Vaccines are considered an effective way to combat Covid-19 infection, so several developers from various companies are trying to produce vaccine development programs against the coronavirus⁷. Vaccination needs to be carried out immediately, and socialization from the government is required about the importance of vaccines in breaking the chain of Covid-19 spread.

With the continuous socialization about the Covid-19 vaccination, it is hoped that the public will know more about the vaccine's benefits. This pandemic that has occurred more than one year is a long time for the community, so efforts to overcome this pandemic are highly expected. One of the efforts made by the government in Indonesia and in various other countries is by giving vaccinations. Based on research data, almost all respondents have good knowledge about Corona Virus Disease, the efforts made to prevent transmission, and an overview of Covid-19 vaccinations. This good knowledge may be obtained from socialization from various social media sources, information from people around, and individual efforts to dig up more information about Covid-19 and vaccinations. Most of the respondents are adults, where the more mature a person's mindset is, the more open they will be to adding new information and are good at receiving information. This is in line with what was expressed by ⁸ that the more mature a person's ages, the level of maturity and ability to receive information are getting better. The level of education of the majority of respondents in higher education where this level of education factor can affect a person's level of knowledge and experience because it is in line with what was expressed by Carter (2011) in (Mujiburrahman, Riyadi, and Ningsih, 2020) that the higher a person's education, the easier it is to receive information, it will also increase.

Relationship between perception and acceptance of the Covid-19 vaccine.

Perceptions in this study relate to respondents' knowledge of the Covid-19 vaccination program, willingness to pay, the place for the Covid-19 vaccination, and socialization media. From these variables, respondents' understanding of the Covid-19 vaccination program and willingness to pay were positively correlated with receiving Covid-19 vaccinations. The results showed that respondents' perceptions of knowledge about the Covid-19 vaccination program led to 13.7x acceptance of Covid-19 vaccination compared to those who did not know this program (OR 13.7, $p=0.01$). Perception of willingness to pay for the Covid-19 vaccination is positively correlated with the receipt of Covid-19 vaccination ($p=0.000$). However, 16.1% of respondents are still unsure and do not know whether they will

join the Covid-19 vaccination program if the program has to be paid for one day. Positive perception will encourage conscious behavior towards something. Every individual has different feelings, thinking abilities, and experiences. Therefore, the perception results will differ from one individual to another in perceiving a stimulus.

In this study, respondents' perceptions of accepting the existence of the Covid-19 vaccination well. Respondents perceive that this vaccine is a program from the government that needs to be followed and the government provides this vaccine free of charge. This is following the aspects behind the formation of perceptions, which is seen from the way of thinking of the respondents, almost all of the respondents are adults with reasonable knowledge that programs from the government are undoubtedly good for the community and of course the ultimate goal of government programs is in line with the thoughts of respondents so that the Covid-19 pandemic condition could end soon. Based on the results of the study, it was also found that respondents were familiar with vaccines as evidenced by the respondents' good knowledge of the covid 19 vaccine. Respondents interpreted that the high number of cases of covid 19 was a problem that required cooperation from all parties, namely between the government and the community^{10,11}. If the community supports the government's program, namely the Covid-19 vaccine program, it is hoped that the number of Covid-19 sufferers can be reduced.

Ethical Approval

The research passed the ethical approval as evidenced by issuing an ethics approval certificate by the Health Research Ethics Commission of Universitas Pesantren Tinggi Darul Ulum Jombang with the number 027-KEP-Unipdu/5/2021.

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