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REVIEW

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STIGMA and Knowledge of COVID 19 Vaccines Affect the COVID 19 Vaccination in Indonesia

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Abstract

Objective: This study aimed to assess STIGMA's effect and knowledge of the COVID-19 vaccine on COVID-19 vaccination.

Methods: The research design is cross-sectional with consecutive non-random sampling. The method used is a questionnaire-based survey given online. The questionnaire included respondent characteristics, history of COVID-19 vaccination, stigma, and factors that influenced the COVID-19 vaccination. The data were exported from the Google form to Microsoft Excel version 16.57 for cleaning and coding, and analysis with SPSS 25.0. Variables were analyzed using the chi-square and Fisher's exact tests (95% confidence level and *P*-value 5%). Correlation using the Spearman test (r is significant if > 0.001) and the odds ratio (OR) of the two variables.

Results: The study was attended by 291 respondents aged 15–59 years, 51.9% worked in the health sector, and 48.1% were the general public. Perception regarding knowledge of COVID-19 shows that 79.7% know and 20.3% don't know. 95.5% of respondents knew about the COVID-19 vaccine program, and the remaining 4.9% did not know. Respondents who had received vaccinations were 97.3%, and 2.7% had not been vaccinated. Factors related to the STIGMA of the COVID-19 vaccine were work in the health sector ($P = 0.001$, $r = 0.200$), knowledge of COVID-19 ($P = 0.001$, $r = 0.195$), and knowledge of the COVID-19 vaccine program ($P = 0.000$, $r = 0.221$). Factors related to receiving vaccinations were knowing the COVID-19 vaccine program ($P = 0.000$, $r = 0.574$) and the STIGMA of the COVID-19 vaccine ($P = 0.000$, $r = 0.225$).

Conclusion: Implementing the vaccination program will be successful if the community has good knowledge about vaccines and does not have a STIGMA for vaccines.

Keywords: STIGMA, COVID-19 vaccine, knowledge of the COVID-19 vaccine, vaccination

Introduction

The coronavirus disease (COVID-19) has spread across all countries, causing a Public Health Emergency of International Concern.[1] The COVID-19 epidemic is a large-scale outbreak of an infectious disease that can increase morbidity and mortality over a wide geographic area.[2] The pandemic caused problems in terms of health, economy, social, and politics.[2-4] This virus shows a very high transmission level and causes many deaths.[2] Pandemic outbreaks have affected various aspects of the world community's life and can potentially bring significant challenges to the world health system and influence the global economy. The government is making multiple efforts to stop this pandemic.[5]

The causative virus is a novel type of coronavirus known as SARCoV2.[1,6,7] This virus is highly contagious through particles that come out during the breathing process at a distance of less than 1 meter.[2] So prevention must be carried out so that transmission does not occur with the health program of keeping a distance, wearing masks, washing hands, and others.[1,8,9] Vaccination against COVID-19 is one of the efforts made by the government to prevent the spread of this disease.[2,9] When given a vaccination, a person will have immunity to this virus and, if infected, will not experience severe disease conditions.[2,4,10] So that it will accelerate the overall immunity process in the community.[2]

The government requires vaccination to form herd immunity (mass immunity) to prevent transmission of COVID-19 in Indonesia.[11,12] Herd immunity through mass vaccination will be developed more quickly than naturally through natural infection with COVID-19. However, the government's program to tackle and prevent the spread of the COVID-19 pandemic has been disrupted by the emergence of various hoaxes in online media. Often this information is spread by accounts that do not have good knowledge about the COVID-19 vaccine.[11] As a result, in society, there are various pro and con views against the COVID-19 vaccination.[5]

This phenomenon of pro and con views can be caused by the lack of conveyance of sources of knowledge and information regarding COVID-19 vaccination in public spaces that the public can access. So that these circulating hoax issues have created fear and concern among the public regarding the safety and effectiveness of the COVID-19 vaccine for the health of the human body.[5] Doubts and worries about vaccines will result in refusing vaccinations, putting people in these areas at high risk of being infected with COVID-19.[4]

People with a negative stigma towards the COVID-19 vaccine will have a social impact. Negative STIGMA can cause refusal to be vaccinated, causing obstacles to herd immunity formation.[13] Based on this, researchers want to assess STIGMA's effect and knowledge of the COVID-19 vaccine on COVID-19 vaccination.

Methods

Research Population

The study was attended by 291 respondents and was conducted from September 2022 to July 2023. The research locations were in 4 cities/districts in 4 regions of Indonesia, namely Puskesmas/Hospitals in DKI Jakarta Province, Puskesmas in Aceh Province (Puskesmas Lembah Seulawah), Puskesmas in Province of Bali (Puskesmas Abiansemal I), Puskesmas in North Maluku (working area of Puskesmas Soasio, City of Tidore Kepulauan). The population in this study is people aged 18–64 years in the Province of the Special Region of Aceh, the Special Capital Region of Jakarta, Bali, and North Maluku. The target population in this study is the community and health workers in the Puskesmas work environment. The research sample has inclusion criteria; Mature age (18–60 years), ability to communicate well, and respondents who work as health workers have worked for at least six months as health workers. The exclusion criteria were having certain psychological disorders such as phobias.

Study Design

The research design is cross-sectional with a non-random sampling method. The method used is a questionnaire-based survey. The research instrument used in data collection was using primary data derived from interviewing respondents using a questionnaire. The questionnaire includes characteristics of respondents, Vaccination History COVID 19, Stigma, and factors that influence vaccination COVID-19.

Statistical Analysis

After extracting the questionnaire from the Google form, the data were exported to Microsoft Excel version 16.57. Data analysis was performed using SPSS 25.0. Variables were analyzed using the chi-square test and Fisher's exact test (95% confidence level and *P*-value 5%), correlation using the Spearman test (r is significant if > 0.001), and the odds ratio (OR) of the two variables was calculated.

Ethical Approval

Permission to conduct this study was obtained from the Faculty of Medicine, Trisakti University Research Board, with the number 180/KER/FK/X/2022. Research permits were also obtained from the Indonesian Ministry of Home Affairs with Numbers 400.5/7800/Polpum.

Results

The study was attended by 291 respondents, with the calculation of the sample population from each province calculated using proportions.

Table 1 shows that the majority of respondents are adults (80.8%), women (69.4%), highly educated (68.7%), from a balanced region, namely around 67–78 respondents per region, with married status (52.9%), Muslim (77.0%), work in the health sector (51.9%), have a very good self-perception of knowledge about COVID 19 (79.7%), know the COVID 19 vaccination program (95.5%), have been vaccinated (97.3%) and have no stigma against COVID-19 vaccine (64.3%).

In Table 2, the factors related to STIGMA are presented and these three factors show a significant relationship, namely work in the health sector ($P = 0.001$, r = 0.200), self-perception of knowing about Covid 19 ($P = 0.001$, r = 0.195), and know the COVID 19 vaccine program ($P = 0.000$, r = 0.221). These three factors also show a strong correlation r > 0.001.

Statistical analysis of the Odd Ratio on the variable knowing about the vaccine program and not having a stigma against the vaccine is OR = 10,941. The Odd Ratio to find out the vaccine program and vaccination are OR = 118,286.

Table 1. **Characteristic frequency distribution**

Variable	Frequency	%
Age		
Youth (15–18 years)	20	6.9
Adult (19–44 years)	236	80.8
Pre-elderly (45–59 years)	36	12.4
Gender		
Man	89	30.6
Woman	202	69.4
Level of education		
Medium (junior high school)	91	31.3
Height (D3–S2)	200	68.7
Origin		
Greater Jakarta	78	26.8
Aceh	67	23.0
Bali	73	25.1
North Maluku	73	25.1
Marital status		
Marry	154	52.9
Not yet/Not married/Divorced	137	47.1
Religion		
Islam	224	77.0
Christian/Catholic	18	6.2
Hindu	46	15.8
Buddha	2	0.7
Trust	1	0.3
Working in the health sector		
Yes	151	51.9
No	140	48.1
Self-perception of knowing knowledge about COVID 19		
Very know	232	79.7
Don't know	59	20.3
Know the COVID 19 vaccine program		
Yes	278	95.5
No	13	4.5
Vaccinated		
Yes	283	97.3
No	8	2.7
Stigma against the COVID 19 vaccine		
Yes	104	35.7
No	187	64.3

Table 2. **Relationship of factors affecting the STIGMA of the COVID-19 vaccine**

Variable	STIGMA COVID-19 vaccine				*P*	r
	No		Yes			
	Frequency	%	Frequency	%		
Jobs in the health sector						
Yes	111	73.51	40	26.49	0.001*	0.200§
No	76	54.29	64	45.71		
Self-perception of knowing knowledge about COVID 19						
Well-known	160	68.97	72	31.03	0.001*	0.195§
Don't know	27	45.76	32	54.24		
Know the COVID 19 vaccine program						
Yes	185	66.55	93	33.45	0.000‡	0.221§
No	2	15.38	11	84.62		

*Chi-square statistical test. ‡Fisher exact test statistical test. §spearman correlation test.

Table 3. **Relationship between knowing the COVID-19 program and getting vaccinated**

Variable	Have been vaccinated against COVID-19				*P*	r
	Yes		Not yet			
	Frequency	%	Frequency	%		
Know the COVID-19 vaccine program						
Yes	276	99.28	2	0.72	0.000‡	0.574§
No	7	53.85	6	46.15		
The Stigma of the COVID-19 Vaccine						
No	187	100.00	0	0.00	0.000‡	0.225§
Yes	98	92.45	8	7.55		

‡Fisher exact test. §Spearman correlation test (r is significant if > 0.001).

Table 3 presents a statistical analysis using the Fisher Exact Test, where there is a significant relationship with having been vaccinated against COVID-19, namely knowing the vaccine program ($P = 0.000$) and stigma against the COVID-19 vaccine ($P = 0.000$).

Discussion

The data in Table 1 consists of 291 respondents whose numbers have been balanced between regions, namely around 23.0–26.8% for each region. This is done so that no confounding factors come from the number of respondents per region. Apart from that, we also try to balance the occupational factor, namely respondents who work in the health sector and those who do not work in the health sector, so as not to affect the assessment results of the respondent's opinions. One of the possibilities, if the number of respondents coming from the health sector is too high, is that it will show that the number of vaccinated is also high due to government policy that requires all health workers and staff in the health sector.

Stigma toward COVID-19 vaccination in this study reached 35.7%. The stigma that can arise against the COVID-19 vaccine is people's subjective opinions, negative sentiments, anxiety, anger, and the notion of certain risks.[14] Stigma can also be said to be a negative perception of the COVID-19 vaccine, namely in the form of anxiety about side effects, vaccine insecurity, and the of a pandemic as the end of time.[15] Uzochukwa et al.[4] stated that the reasons for respondents having doubts about the COVID-19 vaccine were concerns about vaccine efficacy (34.34%), vaccine effectiveness (18.525%), vaccine safety (9.17%), conspiracy theories (10.8%), counterfeit vaccines (6.2%), fears of side effects side (11.2%) and several other reasons.

The number of vaccinated in the four regions reached a very high rate of 97.3%. This is not much different from the national record; the achievement of vaccine 1 reached 86.87% on June 28, 2023.[16] Table 2 presents the factors related to STIGMA; work in the health sector shows a significant relationship ($P = 0.001$). Workers in the health sector are more likely to know about COVID-19 infection and its vaccines than those who do not work in the health sector. This will certainly minimize the emergence of stigma against the COVID-19 vaccine. However, further research can be carried out to prove this. Razal MS et al.[17] stated that it was expected that Health Care Workers (HCWS) would have no doubts about the COVID-19 vaccination. Because HCWS is a trusted source for information on COVID-19 and the COVID-19 vaccine. So HCWS must have confidence because it will educate the public. In addition, HCWS also has the highest risk of

exposure to COVID-19 compared to other communities, which makes HCWS have to vaccinate first to protect themselves. HCWS must have confidence in the COVID-19 vaccine, so they want to be vaccinated against COVID-19. Leigh JP et al.[18] reported a higher willingness to be given the COVID-19 vaccination in HCWS than those who did not work in HCWS.

Self-perception of knowing about Covid19 is also significantly related to stigma (P = 0.001). The group whose self-perception did not know COVID-19 showed a higher percentage of stigma (84.62%) than those who knew (33.45%). This follows the theory that if someone understands or has good knowledge about something, he will act according to the provisions.

The Odd Ratio statistical analysis shows that respondents who know about the vaccine program will have an OR of 10,941 without stigma against vaccines. In addition, the Odd Ratio knows that the vaccine program has an OR of 118,286 for respondents to vaccinate. This explains that information about vaccines and vaccine programs is essential to prevent stigma in the community and make people participate in the program to get vaccinated. Afianur[19] conducted research and found that 94% of respondents had good knowledge about COVID-19, and 90% had a positive attitude about the COVID-19 vaccine. This shows that good knowledge will support positive attitudes about the COVID-19 vaccine. Hutapea MA et al.[20] stated that there was a relationship between knowledge and willingness to do the vaccine (P = 0.002). Decision-making is influenced by knowledge so that beneficial actions for individuals are formed, including the willingness to be vaccinated against COVID-19.

Monayo[21] stated that only 27% of respondents had good knowledge of the COVID-19 vaccination, although most respondents (56%) were interested in vaccinating. Our study showed that 79.7% had a self-perception that they knew about Covid, 95.5% knew about the vaccination program, and 97.3% had done the vaccination. Our research obtained different results from previous studies. This could be due to the different research times. Research Hutapea M et al.[20] will be carried out in 2021, while our research will be carried out in 2022 and 2023. The one-year time difference will allow the government to socialize and increase information regarding the COVID-19 vaccination to the community.

Research by Apriani WD et al.[22] found that 90% knew about the COVID-19 vaccine, and 92% were willing to be vaccinated (P = 0.000, r = 0. This shows that there is a relationship between the level of knowledge and willingness to be vaccinated. The conclusion is the same as our study: the higher the respondent's knowledge, the greater the willingness to be vaccinated.

Table 3 presents a statistical analysis using the Fisher Exact Test, where there is a significant relationship between knowing the vaccine program (P = 0.000), stigma against the COVID-19 vaccine (P = 0.000), and having been vaccinated against COVID-19. This proves that if someone knows about the vaccine program and knows the vaccination schedule to be carried out will help motivate them to be willing to receive vaccinations (99.28% of respondents). In our panel research, knowledge of vaccines, apart from increasing readiness to receive COVID-19 vaccinations, can also reduce the stigma against COVID-19 vaccinations, the results of a study by Tinungki et al.[15] stated the same thing. However, different things were found in the research by Uzochukwu IC et al.[4] who reported that 97.13% of respondents knew the schedule for the COVID-19 vaccine, but only 34.67% were willing to vaccinate. This is because 65.04% of respondents have doubts about the COVID-19 vaccine.

Stigma or doubts about the COVID-19 vaccine can make someone unwilling to receive the COVID vaccination. In Tinungki et al.[15] states that rejection of the COVID-19 vaccination can be caused concern about the side effects that arise after the vaccine. In addition, some are worried or unsure about the safety of the vaccine drug. In the community, it was also reported that rejection occurred in sufferers of systemic diseases who did not receive information/understanding about the COVID-19 vaccine, patient readiness (feeling unprepared), and fear or phobia of needles. Josia M et al.[9] states that having a positive attitude towards the COVID 19 vaccine (97.8%) and the number who received the vaccine also showed a high number (86.7%). Positive knowledge and attitude about COVID 19 and its vaccine will help the COVID 19 vaccination program.

Conclusion

Vaccination is important in situations such as the COVID-19 pandemic so that her immunity can immediately form and prevent wider transmission of infection. Information about COVID-19 and its vaccine is important to convey to the whole community so that perceptions and doubts are not formed about the COVID-19 vaccination, which will lead to a STIGMA for the vaccine itself. Our research proves two factors that have a significant relationship with receiving the COVID-19 vaccination; knowing the vaccine program (P = 0.000) and stigma against the COVID-19 vaccine (P = 0.000). Respondents who know about the vaccine program will receive vaccinations 118,286 times and do not have a stigma against vaccines 10,941 times greater than those who do not know about the program.

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Conflict of Interest

None declared.

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by Husnun Amalia

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The government requires vaccination to form herd immunity (mass immunity) to prevent transmission of COVID-19 in Indonesia.[11,12] Herd immunity through mass vaccination will be developed more quickly than naturally through natural infection with COVID-19. However, the government's program to tackle and prevent the spread of the COVID-19 pandemic has been disrupted by the emergence of various hoaxes in online media. Often this information is spread by accounts that do not have good knowledge about the COVID-19 vaccine.[11] As a result, in society, there are various pro and con views against the COVID-19 vaccination.[5]

This phenomenon of pro and con views can be caused by the lack of conveyance of sources of knowledge and information regarding COVID-19 vaccination in public spaces that the public can access. So that these circulating hoax issues have created fear and concern among the public regarding the safety and effectiveness of the COVID-19 vaccine for the health of the human body.[5] Doubts and worries about vaccines will result in refusing vaccinations, putting people in these areas at high risk of being infected with COVID-19.[4]

People with a negative stigma towards the COVID-19 vaccine will have a social impact. Negative STIGMA can cause refusal to be vaccinated, causing obstacles to herd immunity formation.[13] Based on this, researchers want to assess STIGMA's effect and knowledge of the COVID-19 vaccine on COVID-19 vaccination.

Methods

Research Population

The study was attended by 291 respondents and was conducted from September 2022 to July 2023. The research locations were in 4 cities/districts in 4 regions of Indonesia, namely Puskesmas/Hospitals in DKI Jakarta Province, Puskesmas in Aceh Province (Puskesmas Lembah Seulawah), Puskesmas in Province of Bali (Puskesmas Abiansemal I), Puskesmas in North Maluku (working area of Puskesmas Soasio, City of Tidore Kepulauan). The population in this study is people aged 18–64 years in the Province of the Special Region of Aceh, the Special Capital Region of Jakarta, Bali, and North Maluku. The target population in this study is the community and health workers in the Puskesmas work environment. The research sample has inclusion criteria; Mature age (18–60 years), ability to communicate well, and respondents who work as health workers have worked for at least six months as health workers. The exclusion criteria were having certain psychological disorders such as phobias.

Study Design

The research design is cross-sectional with a non-random sampling method. The method used is a questionnaire-based survey. The research instrument used in data collection was using primary data derived from interviewing respondents using a questionnaire. The questionnaire includes characteristics of respondents, Vaccination History COVID 19, Stigma, and factors that influence vaccination COVID-19.

Statistical Analysis

After extracting the questionnaire from the Google form, the data were exported to Microsoft Excel version 16.57. Data analysis was performed using SPSS 25.0. Variables were analyzed using the chi-square test and Fisher's exact test (95% confidence level and *P*-value 5%), correlation using the Spearman test (r is significant if > 0.001), and the odds ratio (OR) of the two variables was calculated.

Ethical Approval

Permission to conduct this study was obtained from the Faculty of Medicine, Trisakti University Research Board, with the number 180/KER/FK/X/2022. Research permits were also obtained from the Indonesian Ministry of Home Affairs with Numbers 400.5/7800/Polpum.

Results

The study was attended by 291 respondents, with the calculation of the sample population from each province calculated using proportions.

Table 1 shows that the majority of respondents are adults (80.8%), women (69.4%), highly educated (68.7%), from a balanced region, namely around 67–78 respondents per region, with married status (52.9%), Muslim (77.0%), work in the health sector (51.9%), have a very good self-perception of knowledge about COVID 19 (79.7%), know the COVID 19 vaccination program (95.5%), have been vaccinated (97.3%) and have no stigma against COVID-19 vaccine (64.3%).

In Table 2, the factors related to STIGMA are presented and these three factors show a significant relationship, namely work in the health sector ($P = 0.001$, r = 0.200), self-perception of knowing about Covid 19 ($P = 0.001$, r = 0.195), and know the COVID 19 vaccine program ($P = 0.000$, r = 0.221). These three factors also show a strong correlation r > 0.001.

Statistical analysis of the Odd Ratio on the variable knowing about the vaccine program and not having a stigma against the vaccine is OR = 10,941. The Odd Ratio to find out the vaccine program and vaccination are OR = 118,286.

Table 1. **Characteristic frequency distribution**

Variable	Frequency	%
Age		
Youth (15–18 years)	20	6.9
Adult (19–44 years)	236	80.8
Pre-elderly (45–59 years)	36	12.4
Gender		
Man	89	30.6
Woman	202	69.4
Level of education		
Medium (junior high school)	91	31.3
Height (D3–S2)	200	68.7
Origin		
Greater Jakarta	78	26.8
Aceh	67	23.0
Bali	73	25.1
North Maluku	73	25.1
Marital status		
Marry	154	52.9
Not yet/Not married/Divorced	137	47.1
Religion		
Islam	224	77.0
Christian/Catholic	18	6.2
Hindu	46	15.8
Buddha	2	0.7
Trust	1	0.3
Working in the health sector		
Yes	151	51.9
No	140	48.1
Self-perception of knowing knowledge about COVID 19		
Very know	232	79.7
Don't know	59	20.3
Know the COVID 19 vaccine program		
Yes	278	95.5
No	13	4.5
Vaccinated		
Yes	283	97.3
No	8	2.7
Stigma against the COVID 19 vaccine		
Yes	104	35.7
No	187	64.3

Table 2. **Relationship of factors affecting the STIGMA of the COVID-19 vaccine**

Variable	STIGMA COVID-19 vaccine				*P*	r
	No		Yes			
	Frequency	%	Frequency	%		
Jobs in the health sector						
Yes	111	73.51	40	26.49	0.001*	0.200§
No	76	54.29	64	45.71		
Self-perception of knowing knowledge about COVID 19						
Well-known	160	68.97	72	31.03	0.001*	0.195§
Don't know	27	45.76	32	54.24		
Know the COVID 19 vaccine program						
Yes	185	66.55	93	33.45	0.000‡	0.221§
No	2	15.38	11	84.62		

*Chi-square statistical test. ‡Fisher exact test statistical test. §spearman correlation test.

Table 3. **Relationship between knowing the COVID-19 program and getting vaccinated**

Variable	Have been vaccinated against COVID-19				*P*	r
	Yes		Not yet			
	Frequency	%	Frequency	%		
Know the COVID-19 vaccine program						
Yes	276	99.28	2	0.72	0.000‡	0.574§
No	7	53.85	6	46.15		
The Stigma of the COVID-19 Vaccine						
No	187	100.00	0	0.00	0.000‡	0.225§
Yes	98	92.45	8	7.55		

‡Fisher exact test. §Spearman correlation test (r is significant if > 0.001).

Table 3 presents a statistical analysis using the Fisher Exact Test, where there is a significant relationship with having been vaccinated against COVID-19, namely knowing the vaccine program ($P = 0.000$) and stigma against the COVID-19 vaccine ($P = 0.000$).

Discussion

The data in Table 1 consists of 291 respondents whose numbers have been balanced between regions, namely around 23.0–26.8% for each region. This is done so that no confounding factors come from the number of respondents per region. Apart from that, we also try to balance the occupational factor, namely respondents who work in the health sector and those who do not work in the health sector, so as not to affect the assessment results of the respondent's opinions. One of the possibilities, if the number of respondents coming from the health sector is too high, is that it will show that the number of vaccinated is also high due to government policy that requires all health workers and staff in the health sector.

Stigma toward COVID-19 vaccination in this study reached 35.7%. The stigma that can arise against the COVID-19 vaccine is people's subjective opinions, negative sentiments, anxiety, anger, and the notion of certain risks.[14] Stigma can also be said to be a negative perception of the COVID-19 vaccine, namely in the form of anxiety about side effects, vaccine insecurity, and the of a pandemic as the end of time.[15] Uzochukwa et al.[4] stated that the reasons for respondents having doubts about the COVID-19 vaccine were concerns about vaccine efficacy (34.34%), vaccine effectiveness (18.525%), vaccine safety (9.17%), conspiracy theories (10.8%), counterfeit vaccines (6.2%), fears of side effects side (11.2%) and several other reasons.

The number of vaccinated in the four regions reached a very high rate of 97.3%. This is not much different from the national record; the achievement of vaccine 1 reached 86.87% on June 28, 2023.[16] Table 2 presents the factors related to STIGMA; work in the health sector shows a significant relationship ($P = 0.001$). Workers in the health sector are more likely to know about COVID-19 infection and its vaccines than those who do not work in the health sector. This will certainly minimize the emergence of stigma against the COVID-19 vaccine. However, further research can be carried out to prove this. Razal MS et al.[17] stated that it was expected that Health Care Workers (HCWS) would have no doubts about the COVID-19 vaccination. Because HCWS is a trusted source for information on COVID-19 and the COVID-19 vaccine. So HCWS must have confidence because it will educate the public. In addition, HCWS also has the highest risk of

exposure to COVID-19 compared to other communities, which makes HCWS have to vaccinate first to protect themselves. HCWS must have confidence in the COVID-19 vaccine, so they want to be vaccinated against COVID-19. Leigh JP et al.[18] reported a higher willingness to be given the COVID-19 vaccination in HCWS than those who did not work in HCWS.

Self-perception of knowing about Covid19 is also significantly related to stigma (P = 0.001). The group whose self-perception did not know COVID-19 showed a higher percentage of stigma (84.62%) than those who knew (33.45%). This follows the theory that if someone understands or has good knowledge about something, he will act according to the provisions.

The Odd Ratio statistical analysis shows that respondents who know about the vaccine program will have an OR of 10,941 without stigma against vaccines. In addition, the Odd Ratio knows that the vaccine program has an OR of 118,286 for respondents to vaccinate. This explains that information about vaccines and vaccine programs is essential to prevent stigma in the community and make people participate in the program to get vaccinated. Afianur[19] conducted research and found that 94% of respondents had good knowledge about COVID-19, and 90% had a positive attitude about the COVID-19 vaccine. This shows that good knowledge will support positive attitudes about the COVID-19 vaccine. Hutapea MA et al.[20] stated that there was a relationship between knowledge and willingness to do the vaccine (P = 0.002). Decision-making is influenced by knowledge so that beneficial actions for individuals are formed, including the willingness to be vaccinated against COVID-19.

Monayo[21] stated that only 27% of respondents had good knowledge of the COVID-19 vaccination, although most respondents (56%) were interested in vaccinating. Our study showed that 79.7% had a self-perception that they knew about Covid, 95.5% knew about the vaccination program, and 97.3% had done the vaccination. Our research obtained different results from previous studies. This could be due to the different research times. Research Hutapea M et al.[20] will be carried out in 2021, while our research will be carried out in 2022 and 2023. The one-year time difference will allow the government to socialize and increase information regarding the COVID-19 vaccination to the community.

Research by Apriani WD et al.[22] found that 90% knew about the COVID-19 vaccine, and 92% were willing to be vaccinated (P = 0.000, r = 0. This shows that there is a relationship between the level of knowledge and willingness to be vaccinated. The conclusion is the same as our study: the higher the respondent's knowledge, the greater the willingness to be vaccinated.

Table 3 presents a statistical analysis using the Fisher Exact Test, where there is a significant relationship between knowing the vaccine program (P = 0.000), stigma against the COVID-19 vaccine (P = 0.000), and having been vaccinated against COVID-19. This proves that if someone knows about the vaccine program and knows the vaccination schedule to be carried out will help motivate them to be willing to receive vaccinations (99.28% of respondents). In our panel research, knowledge of vaccines, apart from increasing readiness to receive COVID-19 vaccinations, can also reduce the stigma against COVID-19 vaccinations, the results of a study by Tinungki et al.[15] stated the same thing. However, different things were found in the research by Uzochukwu IC et al.[4] who reported that 97.13% of respondents knew the schedule for the COVID-19 vaccine, but only 34.67% were willing to vaccinate. This is because 65.04% of respondents have doubts about the COVID-19 vaccine.

Stigma or doubts about the COVID-19 vaccine can make someone unwilling to receive the COVID vaccination. In Tinungki et al.[15] states that rejection of the COVID-19 vaccination can be caused concern about the side effects that arise after the vaccine. In addition, some are worried or unsure about the safety of the vaccine drug. In the community, it was also reported that rejection occurred in sufferers of systemic diseases who did not receive information/understanding about the COVID-19 vaccine, patient readiness (feeling unprepared) and fear or phobia of needles. Josia M et al.[9] states that having a positive attitude towards the COVID 19 vaccine (97.8%) and the number who received the vaccine also showed a high number (86.7%). Positive knowledge and attitude about COVID 19 and its vaccine will help the COVID 19 vaccination program.

Conclusion

Vaccination is important in situations such as the COVID-19 pandemic so that her immunity can immediately form and prevent wider transmission of infection. Information about COVID-19 and its vaccine is important to convey to the whole community so that perceptions and doubts are not formed about the COVID-19 vaccination, which will lead to a STIGMA for the vaccine itself. Our research proves two factors that have a significant relationship with receiving the COVID-19 vaccination; knowing the vaccine program (P = 0.000) and stigma against the COVID-19 vaccine (P = 0.000). Respondents who know about the vaccine program will receive vaccinations 118,286 times and do not have a stigma against vaccines 10,941 times greater than those who do not know about the program.

Funding

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Conflict of Interest

None declared.

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