International Journal of Community Medicine and Public Health
Kandou GD et al. Int J Community Med Public Health. 2023 Mar;10(3):901-905
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20230332

Original Research Article

Analysis of community acceptability to COVID-19 vaccination in coastal communities of North Minahasa Regency

Grace D. Kandou*, Budi T. Ratag, Angela F. C. Kalesaran, Priscilla C. Kandou

Department of Epidemiology and Biostatistics, Faculty of Public Health, Sam Ratulangi University, Manado, Indonesia

Received: 03 January 2023
Revised: 03 February 2023
Accepted: 04 February 2023

***Correspondence:**
Grace D. Kandou,
E-mail: grace.kandou@unsrat.ac.id

ABSTRACT

Background: One of the important keys in dealing with COVID-19 is vaccination which can provide immunity to the community. The availability of an effective and safe vaccine certainly does not fully guarantee that the vaccination program will run well and give maximum results. In addition to vaccine distribution management which is quite complicated and must be done very carefully, the community's acceptability factor must be handled properly and carefully. The achievement of COVID-19 vaccination based on PCare Data from Wori health center and Tinongko health center as of January 8, 2022 was 61%. This illustrates that there are still many people who have not been vaccinated. The purpose of the study was to analyze the community's acceptability of the COVID-19 vaccination program in Wori District.
Methods: The type of research to be carried out is quantitative research with an analytical observational design using a cross-sectional study approach. The research location is in 13 villages in Wori District. The research population is people who are in the administrative area of Wori District. Sampling was done by cluster sampling method using sample calculations obtained 376 respondents.
Results: The results showed that there was a significant association between education level, employment status, and knowledge with community acceptability to COVID-19 vaccination.
Conclusions: It is necessary to find an effective way to reach people with the most limited access to information in order to increase public acceptance of the vaccination program.

Keywords: COVID-19, Community acceptability, COVID-19 vaccination

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or more commonly known as COVID-19 is the latest type of corona virus that emerged at the end of 2019 in Wuhan, China and then spread to several regions to other countries. Around March 2020, it was known that there were 118,000 COVID-19 cases reported from 114 countries, seeing the increasing number of cases that was getting out of control with an alarming level of spread and severity, in March 2020 the World Health Organization (WHO) designated COVID-19 as global pandemic. Until now, COVID-19 cases are still growing, based on data from the WHO on the state of COVID-19 in the world as of January 27, 2022, there were 360,578,392 confirmed cases and 5,620,865 deaths, with the highest cases in the Americas as many as 73,450. 049 confirmed cases, and the lowest case was in the Western Pacific region with the number of confirmed COVID-19 cases, namely 3,730,197 cases.[1]

The government in Indonesia has appealed to the public to always apply appropriate COVID-19 prevention methods to prevent people from being exposed to the virus that causes COVID-19. One of the measures to prevent COVID-19 is to vaccinate. The COVID-19 vaccination is

one type of prevention in a secondary scope, to prevent someone from being infected with SARS-CoV-2.[2] According to our world in data (2021), 39.5% of the world's population has received at least one dose of COVID-19 vaccine until August 31, 2021, according to our world in data (2021). The first place in the world with the highest percentage of getting a full-dose COVID-19 vaccine is the United Arab Emirates, which is 75.3%.[3] While in Indonesia, the achievement of COVID-19 vaccination as of August 31, 2021 with dose one has reached 30.49% and dose two has reached 17.31%. The target set by the government for vaccine achievement is 208,265,720 million people who are fully vaccinated.[4] The COVID-19 vaccination is carried out and strives for the community to get the COVID-19 vaccine. The COVID-19 vaccination has a response of rejection and acceptance from the Indonesian people. Hearing negative news or opinions that live in the community has made some community groups reluctant to receive the COVID-19 vaccine. In one of the articles written by Agung (2021) in the Gadjah Mada University article, it was explained that there were 49.9% of 601 respondents who refused to get a COVID-19 vaccination. The percentage results were carried out by the center for digital society (CfDS) Gadjah Mada University. The results of the survey show that most Indonesians still believe in posts containing conspiracy theories about the COVID-19 vaccine. Based on the results of research conducted by Astuti, et al (2021) related to public perception of receiving COVID-19 vaccination, they also said the same thing that there were still many people who refused to get vaccinated due to various factors; income level, education, and the role of government.[5]

Currently, the vaccination achievement of North Sulawesi Province as of January 27, 2022 for Dose 1 reaches 74%, Dose 2 reaches 46.9% and Dose 3 reaches 2.2%. Vaccination achievement in North Minahasa Regency itself is still quite low compared to other regencies/cities in North Sulawesi Province. Dose 1 in North Minahasa Regency only reached 61.1%, Dose 2 reached 41.2%, and Dose 3 reached 1.4%.[6] Based on the results of an initial survey conducted by the research team, Wori District, which is in the North Minahasa Regency area, currently has vaccination achievements as of January 27, 2022, Dose 1 has only reached 66%, Dose 2 is around 44%.[7] Therefore, it is necessary to conduct an analysis related to the public's acceptability of the COVID-19 vaccination. What are the factors that can encourage the community to be involved in vaccination activities considering that vaccination activities are very important in preventing the transmission of COVID-19 disease in Indonesia, especially in North Sulawesi. The purpose of the study was to analyze the community's acceptability of the COVID-19 vaccination program in Wori District.

METHODS

This type of research is a quantitative study with an analytical observational design using a cross-sectional study. This research was conducted in the working area of the Wori Health Center, North Minahasa Regency, which consisted of 13 villages, namely Wori, Tiwoho, Kima Bajo, Minaesa, Budo, Darunu, Bulo, Ponto, Lansa, Lantung, Kulu, Talawaan Atas and Talawaan Bantik. The time of the implementation of this research will be in March to November 2022. The population in this study is all people in the working area of Wori Health Center. The sampling technique is probability sampling with a cluster sampling approach. Calculation of the sample size with the formula to get the minimum number of samples required as many as 376 respondents. The inclusion criteria in this study were people aged at least 18 years and living in Wori District since 2020. Exclusion criteria were people under 18 years old, living less than 6 months and people who could not be vaccinated due to special conditions. The variables studied in this study were age, gender, respondent's COVID-19 vaccination status, education level, employment status, level of knowledge related to COVID-19 vaccination, and community acceptability of COVID-19 vaccination. Research instruments are tools or facilities used by researchers during data collection activities. The instruments used in this study include informed consent and research questionnaires. The data analysis used in this research is bivariate analysis or analysis that uses 2 variables. Bivariate analysis was conducted to test whether there is an association between the independent variable and the dependent variable. To show whether there is an association between these variables, the Chi-square test is used with p value 0.05.

RESULTS

Wori is one of the sub-districts in North Minahasa Regency with an area of ±8,782 Ha. The working area of UPTD Wori Health Center consists of 13 villages with a population of 15,939 people, consisting of 7,450 men and 8,489 women. The number of villages in the working area of UPTD Wori Health Center is 13 villages, namely Wori, Tiwoho, Kima Bajo, Talawaan Bantik, Talawaan Atas, Minaesa, Budo, Darunu, Bulo, Ponto, Lansa, Lantung, and Kulu. The total population in the UPTD Wori Health Center is 7,450 men, while women with a smaller number of 8,489. Males aged 0-14 years amounted to 1,849 people, while women amounted to 2,100 people. The number of men and women aged 0-14 years is 3,949. The age group of 15-64 years is 5,122 males and 5,748 females. The number of men and women aged 15-64 years is 10,870 people. In the 65+ year age group, there were 479 males, while 641 females totaled males and females aged 65+ years totaled 1,120 people. The number of households covering 13 villages in the Wori Health Center UPTD working area is 4,950 families. The distribution of age groups in the form of a description of the distribution of respondents based on age characteristics can be seen in (Table 1).

The age group of respondents showed that the age group >60 years was the largest age group, amounting to 136 people with a percentage of 36.2% and the age group 50-

59 years being the lowest age group amounting to 58 people with a percentage of 15.4%. The description of the distribution of respondents by gender can be seen in (Table 2).

Table 1: Distribution of respondents age characteristics.

Age group (years)	Total	
	N	%
18-29	73	19.4
30-49	109	29
50-59	58	15.4
>60	136	36.2
Total	376	100

Table 2: Gender distribution of respondents.

Gender	Total	
	N	%
Man	182	51.6
Woman	194	48.4
Total	376	100

The gender of the respondents showed that most of the respondents were female with a total of 194 people (51.6%) while the respondents were male with a total of 182 people (48.4%). The distribution of respondents based on COVID-19 Vaccination Status can be seen in (Table 3). The COVID-19 vaccination status of respondents showed that most of the respondents had been vaccinated up to dose 2 with a total of 170 people (45.2%) while the least was vaccination status up to dose 3 with a total of 100 people (26.6%).

Table 3: Distribution of respondents' COVID-19 vaccination status.

COVID-19 vaccination status	Total	
	N	%
1 dose	106	28.2
Dosage 1 and 2	170	45.2
Dosage 1, 2, and 3	100	26.6
Total	376	100

COVID-19 vaccination acceptability analysis

The association between education level and COVID-19 vaccination acceptance can be seen in (Table 4). Based on the results of the Chi-square test, a p value of 0.001 or less than =0.05 was obtained, so it can be stated that there is a significant association between education level and COVID-19 vaccination acceptance. The association between employment status and COVID-19 Vaccination Acceptance can be seen in (Table 5). Based on the results of the chi-square test, a p value of 0.001 or less than =0.05 was obtained so that it can be stated that there is a significant association between employment status and COVID-19 vaccination acceptance. The association between knowledge level and COVID-19 vaccination acceptance can be seen in (Table 6). Based on the results of the Chi-square test, a p value of 0.001 or less than =0.05 was obtained, so it can be stated that there is a significant association between the level of knowledge and COVID-19 vaccination acceptance.

Table 4: Association between education level and COVID-19 vaccination acceptance.

Parameters		COVID-19 vaccination acceptance, N (%)		Total, N (%)	P value
		Do not accept	Accept		
Education Level	Low	122 (51.9)	113 (48.1)	235 (100)	0.001
	High	21 (14.9)	120 (85.1)	141 (100)	
Total		143 (38)	233 (62)	376 (100)	

Table 5: Association of employment status and COVID-19 vaccination acceptance.

Parameters		COVID-19 vaccination acceptance, N (%)		Total, N (%)	P value
		Do not accept	Accept		
Employment status	Not yet/not working	110 (53.1)	97 (46.9)	207 (100)	0.001
	Already working	33 (19.5)	136 (80.5)	169 (100)	
Total		184 (48.9)	192 (51.1)	376 (100)	

Table 6: Association between knowledge and COVID-19 vaccination acceptance.

Parameters		COVID-19 vaccination acceptance, N (%)		Total, N (%)	P value
		Do not accept	Accept		
COVID-19 Vaccination Knowledge	Lack	113 (62.4)	68 (37.6)	181 (100)	0.001
	Well	30 (15.4)	165 (84.6)	195 (100)	
Total		181 (48.1)	233 (51.9)	376 (100)	

DISCUSSION

Vaccines are one of the most reliable interventions because they save millions of lives every year. The good news comes when the COVID-19 vaccine gets approval for global circulation so that it can establish herd immunity and end the COVID-19 pandemic. However, there are obstacles faced in the community, namely the attitude of acceptance (acceptability) to the COVID-19 vaccination.[8] If you refer to the research conducted by Sidarta et al it can be seen several factors why people choose not to receive the COVID-19 vaccination, including concerns about vaccine safety, concerns about side effects, concerns about vaccine efficacy, religious beliefs, the presence of comorbidities, and lack of knowledge about vaccines.[9] The results in this study showed that the adult age group received the most Covid-19 vaccinations. The attitude of acceptance which is more by the adult age group, may be due to the perspective in seeing and responding to something better than the younger age group. This is reinforced by the view of Notoatmodjo who argues that the older a person gets, the more knowledge that person has.[10] Based on the test of the association between education level and COVID-19 vaccination acceptance, the results showed that there was a significant association. This is in line with research conducted by Paramita, Widiyati et al who also stated that there was a significant relationship between education and receipt of COVID-19 vaccination in Jogonegoro Village, Magelang Regency.[11]

Respondents with less knowledge are a factor that can influence people's attitudes towards COVID-19 vaccination compared to respondents with good knowledge. Knowledge is an important factor to influence a person's attitude. Because knowledge about COVID-19 vaccination greatly affects a person in receiving the COVID-19 vaccine, this may be related to social relations considering that people around them, whether family, friends, or co-workers, also have a function as an effective successor or messenger to increase knowledge. The community and the function of parents are also very effective in providing information to their families, so that increased knowledge leads to an increase in attitudes towards COVID-19 vaccination, starting from the family and then there are encouragements from the surrounding environment including community group movements. Education possessed by a person certainly affects the development of mindset and perception in receiving vaccinations. Which people with higher education tend to have a positive perception of the COVID-19 vaccine. This is supported by the theory in research Argista et al 2021 which states that education is included in the experience factor possessed by the individual itself so that it affects perceptions and then affects a person's level of acceptance in carrying out COVID-19 vaccinations.[12]

The association between employment status and COVID-19 vaccination acceptance studied in this study obtained the results that there was a significant association. The same thing was also found in a study conducted by Ichsan et al which stated that the factors that influenced the willingness of the people of Central Sulawesi to receive vaccination were age, education level, occupation, marital status, religion and ethnicity. Currently, the Government has required people who work, especially in the field of public services, to be vaccinated completely to boosters.[13] This study also obtained the result that there was a significant association between the level of knowledge and COVID-19 vaccination acceptance. This is supported by the results of a study conducted by Febriyanti et al which also obtained the result that there was an effect of knowledge on vaccination acceptance among residents of Dukuh Menanggal Village, Surabaya City.[14]

According to Argista et al the level of public acceptance (acceptability) of the vaccination or immunization program is quite high. In this case, the public's doubts about receiving the COVID-19 vaccination are the halalness of the vaccine itself, which affects public acceptance of the COVID-19 vaccine, then the public's doubts about the vaccine's efficacy, which has yet to be proven.[12] The results of this study are also supported by the theory from the research of Wheelock et al which discusses the perception of mass vaccination acceptance in developed and developing countries which states that the lack of trust in vaccine science is due to inaccurate public perceptions and low levels of trust coupled with the political and economic system of each country in handling the COVID-19 pandemic which has caused widespread discontent among the public.[15]

Limitations

The limitation of this research is during the data collection process, where this research was carried out at the time of the outbreak or the COVID-19 pandemic occurred, so the research was more difficult than usual because most people are afraid to meet strangers who are not from their neighborhood. Most of the people work as farmers so it is difficult to be found in the morning or afternoon and some villages have limited internet access or no telephone signal.

CONCLUSION

The results showed that there was a significant association between the education level, employment status and knowledge of the respondents with the community acceptability of COVID-19 vaccination in coastal communities of Wori District, North Minahasa Regency. The recommendation that can be given is that it is necessary to find an effective way to reach people with the most limited access to information in order to increase public acceptance of the vaccination program.

Funding: Research and Community Service Institute of Sam Ratulangi University.
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. WHO Coronavirus (COVID-19) Dashboard-2022. Available at: https://covid19.who.int/. Accessed on 15 July 2022.
2. Yulianto D. COVID-19 Update: New Normal, Vaksinasi, dan Fakta-fakta Baru yang Perlu Anda Ketahui. Available at: https://www.bbc.com/indonesia/indonesia-51232803. Accessed on 15 July 2022.
3. Pharmaceutical technology, COVID-19 vaccination tracker. Available at: https://www.pharmaceutical-technology.com/covid-19-vaccination-tracker/. Accessed on 31 August 2021.
4. Pedoman Pencegahan dan Pengendalian Coronavirus Disease (COVID-19). Available at: https://covid19.go.id/p/protokol/pedoman-pencegahan-dan-pengendalian-coronavirus-disease-covid-19. Accessed on 31 August 2021.
5. Astuti NP, Nugroho EGZ, Lattu JC, Potempu IR, Dewi AS. Persepsi Masyarakat terhadap Penerimaan Vaksinasi COVID-19. J Keperawatan. 2020;13(3):569-80.
6. COVID-19 Dashboard-2022. Available at: https://coronasulutprov.go.id/data. Accessed on 27 January 2022.
7. Puskesmas W. Rekapitulasi Vaksinasi COVID-19 di Wilayah Kerja Puskesmas Wori Kabupaten Minahasa Utara. Available at: https://hellosehat.com/infeksi/covid19/proses-vaksinasi-covid-19-di-indonesia. Accessed on 27 January 2022.
8. El-elimat T, Alseman MAM, Almomani AB, Sawalha AAN, Alali QF. Penerimaan dan sikap terhadap vaksin COVID- 19: Sebuah studi cross-sectional dari Yordania. Available at: https://www.unicef.org/indonesia/id/coronavirus/laporan/survei-penerimaan-vaksin-covid-19-di-indonesia. Accessed on 27 January 2022.
9. Sidarta C, Kurniawan A, Lugito NPH, Siregar JI, Sungono V, Heriyanto RS, et al. The Determinants of COVID-19 Vaccine Acceptance in Sumatra. J Kesmas. 2022;17(1):23-9.
10. Notoatmodjo S. Ilmu Perilaku Kesehatan. Available at: https://id.wikipedia.org/wiki/Perilaku_kesehatan. Accessed on 27 January 2022.
11. Paramita LAADP, Widiyati S, Widyanto B. Persepsi Masyarakat Terhadap Penerimaan Vaksinasi Covid-19 Di Desa Jogonegoro Kabupaten Magelang. J Keperawatan. 2021;13:205-7.
12. Argista ZL. Persepsi Masyarakat Terhadap Vaksin Covid-19 Di Sumatera Selatan. J Keperawatan. 2021;13:132-8.
13. Ichsan DS, Hafid F, Ramadhan K. Determinan Ketersediaan Masyarakat Menerima Vaksinasi Covid-19 di Sulawesi Tengah. 2021. J Ilmu Kesehatan. 2021;15(1):1-11.
14. Febriyanti N, Choliq MI, Mukti AW. Hubungan Tingkat Pengetahuan dan Kesediaan Vaksinasi Covid-19 Pada Warga Kelurahan Dukuh Menanggal Kota Surabaya. Sem Nat Hasil Riset Dan Pengabdian. 2021;3:1-7.
15. Wheelock A, Ives J. Vaccine confidence, public understanding and probity: time for a shift in focus?. Centre Eth Med. 2022;12:1-16.

Cite this article as: Kandou GD, Ratag BT, Kalesaran AFC, Kandou PC. Analysis of community acceptability to COVID-19 vaccination in coastal communities of North Minahasa Regency. Int J Community Med Public Health 2023;10:901-5.