

Correlation between Knowledge and Hesitancy towards COVID-19 Vaccine in Pregnant Women in The Working Area of Ranomeeto Health Centre

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ABSTRACT

Background: Acceptance or refusal of vaccinations can be influenced by hesitancy about the COVID-19 vaccine. Hesitancy is determined by knowledge, attitudes, practices, and public concerns about the safety, efficacy, risks, and benefits associated with the COVID-19 vaccination program. **Purpose:** To determine the association between knowledge and hesitancy about the COVID-19 vaccine in pregnant women in the Ranomeeto Health Center Working Area. **Methods:** This is an analytic observational study with a cross-sectional approach. This study was conducted at the Ranomeeto Health Center, Konawe Selatan District. The number of samples is 77 people, collected by purposive sampling technique. Knowledge was measured using a knowledge questionnaire about the covid-19 vaccine. Hesitation was measured using a questionnaire about the COVID-19 vaccine. Data were collected and analyzed using the Chi-Square statistical test with a significance value of $p < 0.05$. **Results:** The results showed that most pregnant women had good knowledge about the COVID-19 vaccine (42.9%) and had no hecitation about the COVID-19 vaccine (61.0%). Statistical tests obtained a significant p-value between knowledge and hesitancy about the COVID-19 vaccine ($p = 0.010$). **Conclusion:** There is a significant correlation between knowledge and hesitancy about the COVID-19 vaccine in pregnant women in the Working Area of the Ranomeeto Health Center.

Keywords: covid-19 vaccine; hesitancy; knowledge; pregnant women

INTRODUCTION

Coronavirus disease 2019 (COVID-19) was first identified in December 2019 in Wuhan (China) and is caused by a new coronavirus, now referred to as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is highly contagious, with estimates that an average person infected will infect 2–3 other people (Gengler, 2020).

People in close contact with COVID-19 patients have a high risk of contracting the disease, including those who are caring for COVID-19 patients. Vulnerable groups for contracting COVID-19 are the elderly, people with chronic diseases, people with physical disabilities, children, and pregnant women (Saimin, 2020). Pregnant women with COVID-19 were found to have it in the

first, second, and third trimesters (Eliyun, 2021). Positive test results for SARS-CoV-2 were identified mainly in the second trimester of pregnancy in 20 cases (43.5%), in 23 cases in the third trimester (50.0%), and only 3 cases were detected in the first trimester (6.5%) (Lokken et al., 2020).

Information about COVID-19 in pregnant women is still limited. To avoid transmission of COVID-19, steps that can be taken include taking preventive measures by implementing health protocols (Eliyun, 2021). In addition, it is necessary to immediately intervene, not only in terms of implementing health protocols but also other interventions, namely through vaccination efforts (Ministry of Health, 2021).

The success of a vaccine depends not only on its efficacy but also on its acceptability. Vaccine hesitancy has become a threat to the success of COVID-19 vaccination efforts (Goncu et al., 2021). Vaccine hesitancy refers to delays in accepting or refusing vaccinations even though vaccination services are available (MacDonald, 2015). The hesitation about vaccines in pregnant women are caused by a lack of data on the safety of the COVID-19 vaccine in the population of pregnant women and the possibility of harm to the fetus (Goncu et al., 2021).

Acceptance and hesitancy are largely determined by knowledge, attitudes, practices, and people's concerns regarding the safety, efficacy, risks, and benefits associated with the COVID-19 vaccination program (Kumari et al., 2021). Misinformation and baseless rumors regarding the COVID-19 vaccine have been circulating and being repeatedly shared on social media platforms, which have raised concerns among the public (Mohamed et al., 2021).

For the general public, information obtained through hearing and sight can certainly influence their understanding of the COVID-19 vaccine. It implies that someone with a poor understanding of vaccination will reject COVID-19 vaccination (Tasnim, 2021).

Therefore, this study aims to determine the relationship between knowledge and hesitancy about the COVID-19 vaccine in pregnant women in the working area of the Ranomeeto Health Center.

METHODS

The research method used is an observational analytic study with a cross-sectional design. The study population was all pregnant women in the working area of

the Ranomeeto Health Center, with inclusion criteria namely being pregnant, willing to be a respondent, and coming for antenatal care, while the exclusion criteria were not filling out the questionnaire completely and having received the COVID-19 vaccination before pregnancy.

The sampling method used in this study was purposive sampling. The acceptance and hesitancy was measured using a modified questionnaire from the Survey of Acceptance of the COVID-19 Vaccine in Indonesia by the Indonesian Ministry of Health and from research conducted by Argista & Sitorus in 2021.

The knowledge questionnaire includes the public's understanding of the use of the COVID-19 vaccine, the ingredients in the vaccine, the type of vaccine, and the vaccination center. Knowledge is considered good if the score is 76–100, sufficient knowledge if the score is 56–75, and lacking knowledge if the score is less than 56.

Questions of doubt are delays in acceptance, reluctance, or refusal of vaccinations even though vaccination services are available. The assessment result is categorized as "hesitant" if the answer is "no" or "has not decided" to receive the vaccine, and "not hesitant" if the answer is "yes" to receiving the vaccine.

The questionnaire was filled out by the respondent, with the respondent first signing an informed consent and the researcher explaining the purpose and benefits of the research and how to fill out the questionnaire.

Data Analysis

The Data analysis was performed using the Chi-Square test. A univariate analysis was used to display the frequency

distribution of knowledge and doubts about the COVID-19 vaccine. A bivariate analysis was carried out to analyze the relationship between knowledge and doubts about the COVID-19 vaccine.

Ethics

This research has received approval from the Health Research Ethics Commission, Faculty of Medicine, Halu Oleo University with number: 172/UN29.17.1.3/ETIK/2021.

RESULT

There were 77 respondents in this study. Table 1 shows that the majority of respondents are Muslim (96.1%), have not been vaccinated against COVID-19 (94.8%), had their last education in SMA/SMK/MA (53.2%), and are aged 18–24 years (33.8%). Based on gravida, most were multigravida (66.2%), and most were in the third trimester (42.9%). Based on the cost of living, most are around Rp. 1,416,000 (40.3%).

The distribution based on knowledge about the COVID-19 vaccine shows that 42.9% of respondents had good knowledge, followed by 37.7% of respondents with sufficient knowledge, and 19.5% had less knowledge (Table 2).

The distribution based on hesitancy about the COVID-19 vaccine shows that 61.0% of respondents had no hesitancy and 39.0% of respondents had hesitancy (Table 3).

The chi-square test shows that there is a relationship between knowledge and hesitancy about the COVID-19 vaccine in pregnant women with a significance value of $p = 0.010$ (Table 4).

DISCUSSION

The results of this study indicate

that pregnant women who have less knowledge answer questions about the COVID-19 vaccine, while pregnant women who have good knowledge mostly have no questions about the COVID-19 vaccine. This is in line with the results of Liaumin & Khalza's research (2021), which was conducted on the community in Posasia District, Kendari City, with the results of the study showing that more respondents who had poor knowledge did not receive the COVID-19 vaccine, while more respondents who had good knowledge did receive the COVID-19 vaccine.

The lack of public knowledge and understanding regarding the benefits and risks of vaccines can be one of the causes of public distrust of the COVID-19 vaccine (Nugroho et al., 2021). The availability of information regarding the safety and effectiveness of the COVID-19 vaccine, coupled with incorrect information circulating on social media, has the effect of increasing vaccine hesitancy among the public. (Cordina & Lauri, 2021) In a study conducted by Kourlaba et al. (2021), it was reported that people who depend on social media for COVID-19 vaccine information prefer not to be vaccinated. Vaccine hesitancy triggers delays in accepting or refusing vaccinations even though vaccination services are available (MacDonald, 2015).

Hesitancy about vaccines and various reasons for refusing vaccines are a major concern throughout the world. The most common reasons are hesitancy about the benefits of vaccines, religious considerations, and, most importantly, a lack of awareness and knowledge. It has been proven that their knowledge of vaccines affects their desire to get the COVID-19 vaccine (Kumar et al., 2021).

The results of this study indicate that there is a significant relationship between knowledge and hesitancy about the COVID-19 vaccine. These results are in line with research conducted by Sari et al. (2021), which showed that there was a significant relationship between knowledge and acceptance of the COVID-19 vaccine in Jember District. The same thing was found by Febritanti et al. (2021), which showed that there was a relationship between the level of knowledge and the willingness to vaccinate against COVID-19 among residents of Dukuh Menanggal, Surabaya City. Another study conducted by Galle et al. (2021) showed that a higher level of knowledge is related to the desire to be vaccinated against COVID-19.

Knowledge is a factor that influences one's perception and behavior. Knowledge of the COVID-19 vaccine can affect acceptance of the vaccine and one's belief in the COVID-19 vaccine. Poor knowledge, hesitation in receiving the COVID-19 vaccine, and the spread of rumors and fake news can affect a person's mentality and decision to receive the COVID-19 vaccine.

However, the results of this study are different from those obtained by Saimin et al. (2022), who found that there was no relationship between knowledge and doubts about the COVID-19 vaccine in pregnant women in Abeli District, Kendari City. This may be due to the relationship between the level of education and one's knowledge. In a study by Mahmud et al. (2021), it was reported that there was a significant correlation between receiving the COVID-19 vaccine and a higher education level. Soares (2021) reported the same thing, claiming that people with a low level of education are less likely to receive the

COVID-19 vaccine than people with a high level of education.

In addition to education, social factors may influence a person's level of knowledge, given that people around them have the function of delivering effective messages to increase one's knowledge, and the function of parents is also very effective in providing information to his family, so that increased knowledge leads to increased acceptance of the COVID-19 vaccine, beginning with the family.

According to Cordina and Lauri (2021), there is a significant positive link between a person's readiness to get the COVID-19 vaccine and the value they place on their family and friends' advice and support. The COVID-19 vaccine's social support and initiatives to lessen vaccine reluctance are crucial. By fostering trust among the public, medical professionals, and policymakers, this will aid in the promotion of COVID-19 vaccination and help the pandemic be better controlled. Therefore, it is desired that there would be a government policy to disseminate information and offer health socialization, particularly regarding the safety and advantages of the COVID-19 vaccination, both individually and through social media. In order to influence the general public's decision to receive vaccinations, coordination with community leaders can also be done.

CONCLUSION

Based on the study's findings, it was determined that there was a connection between knowledge and hesitancy towards the COVID-19 vaccine among pregnant women in the Ranomeeto Health Center's working area.

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Table 1. Characteristics of Respondents in the Work Area of the Ranomeeto Health Center

Characteristics	Sum (n)	Percentage (%)
Religion		
Islam	74	96,1
Hindu	0	0
Christian	2	2,6
Catholik	1	1,3
Budha	0	0
Last Education		
Elementary School	4	5,2
Junior High School	12	15,6
Senior High School	41	53,2
Non Degree Diploma Qualification	5	6,5
Bachelor/Magister/Doctoral Degree	15	19,5
Gravida		
Primigravida	26	33,8
Multigravida	51	66,2
Gestational Age		
First trimester	12	15,6
Second trimester	32	41,5
Third trimester	33	42,9
Life Cost		
< Rp. 1.416.000	31	40,3
Rp. 1.416.000- Rp. 2.128.000	21	27,2
Rp. 2.128.001- Rp. 4.800.000	25	32,5
Rp. 4.800.001- Rp. 24.000.000	0	0
> Rp. 24.000.000	0	0
Age		
< 18 Years old	3	3,9
18-24 Years old	26	33,8
25-31 Years old	25	32,5
32-38 Years old	20	26,0
39-45 Years old	3	3,9
COVID-19 Vaccination		
Not Vaccinated	73	94,8
Have received Dose 1	4	5,2
Have received Dose 2	0	0
Have received Dose 3	0	0

Table 2. The frequency of the respondents' knowledge assessment

Knowledge	Amount (n)	Percentage (%)
Good	33	42,9
Sufficient	29	37,7
Less	15	19,5
Total	77	100,0

Table 3. The frequency of respondents' hesitancy towards the COVID-19 vaccination

Hesitancy	Amount (n)	Percentage (%)
Hesitans	30	39,0
Not hesitans	47	61,0
Total	77	100,0

Tabel 4. Correlation between the knowledge and hesitancy of the respondents towards the COVID-19 vaccination

Knowledge	Hesitancy				Total		p
	Hesitans		Not Hesitans		n	%	
	n	%	n	%			
Good	23	29,9	10	13,0	33	42,9	0,010
Satisfactory	20	26,0	9	11,7	29	37,7	
Less Satisfactory	4	5,2	11	5,2	15	19,5	
Total	47	61,0	30	39,0	77	100,0	

Chi-Square test