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Attitudes and Anxiety to the Acceptance of the Covid-19 Vaccine During Pregnancy

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ABSTRACT

Background: pregnant women have a higher risk of experiencing severe complications related to Covid-19. For this reason, vaccination is essential to do. However, it was reported that 79.2% of pregnant women were unsure about getting vaccinated, and even 78.4% were worried about the side effects.
Purpose: this research was conducted to determine the effect of knowledge, attitudes, and anxiety of pregnant women on receiving COVID-19 vaccination.
Methods: using a quantitative method with a correlational type, as many as 40 pregnant women in the second and third trimesters were selected to be involved by Accidental Sampling.
Results: the results showed that 90% of respondents had sufficient knowledge, 80% had a good attitude, 77.5% of pregnant women had severe anxiety, and 85% accepted the vaccination. Based on the multiple linear correlation test, the influence of knowledge, attitude, and anxiety on the acceptance of the Covid-19 vaccination was 0.049, 0.000, and 0.526, respectively. Partial regression analysis for each independent variable shows only the t count > t table value for the knowledge and attitude variables.
Conclusion: the higher the level of knowledge and the more willing pregnant women are to receive vaccinations, the higher the acceptance of COVID-19 vaccination during pregnancy.

Keywords:
Acceptance; covid-19; immunity; pregnancy; vaccination

BACKGROUND

Corona Virus Disease 2019 (COVID-19) became a global pandemic from early 2020 to 2023. During the 3-year pandemic, this disease, which was transmitted through the droplets of infected people, killed more than 6 million people worldwide (Lotfi et al., 2020). COVID-19 is contagious to all age groups, including children, adults, the elderly, and pregnant women. Pregnancy is a time of increased demands or burdens on the body of pregnant women and a decrease in the immune response, which increases the risk of complications and infections. Therefore, pregnant women are categorized as one of the vulnerable groups at risk of contracting Covid-19 (Moghanibashi-Mansourieh, 2021).

Globally, the prevalence of pregnant women with confirmed COVID-19 in 2020 was 6.6% (Overton et al., 2022). Of the 141 suspected maternal cases, 62 cases were confirmed as COVID-19 (43.9%), while 79 suspected cases were negative (56.1%) (Akbar et al., 2022). COVID-19 does not always cause symptoms in pregnant women. A study found that 80.6% of pregnant women infected with COVID-19 had no symptoms. However, COVID-19 has been proven to have an impact on the health status of pregnant women and pregnancy outcomes. As many as 30% of infected pregnant women reportedly had to be treated in the ICU, and as many as 14% required respiratory assistance using mechanical ventilation (Delahoy et al., 2020). Previous research also found that maternal deaths caused directly by COVID-19 were much higher compared to the non-COVID-19 group (Akbar et al., 2022).

Considering the high risk of COVID-19 morbidity and mortality in pregnant women, the World Health Organization (WHO) recommends COVID-19 vaccination in pregnant women to reduce the risk to the fetus and increase immunity for the mother and fetus (Badell et al., 2022). Vaccination for pregnant women can protect and fight against complications during the early stages of pregnancy and pre-pregnancy. Vaccine-induced antibodies are transferred transplacentally to the fetus and the newborn via breast milk. Immunization during pregnancy protects the mother against clinically relevant infections, reducing infections that harm fetal and infant outcomes during the first 4-6 months of life (Jorgensen et al., 2023).

Previous research found that COVID-19 vaccination did not affect pregnancy and childbirth outcomes because postpartum complications in mothers who received the vaccine and were not vaccinated were statistically similar. Research shows that Covid-19 vaccination is recommended for pregnant women to reduce complications due to Covid-19 (De Andrade Pereira Silva et al., 2022). Therefore, the Indonesian Ministry of Health has permitted COVID-19 vaccination for pregnant women in Indonesia since August 2, 2021. However, not all pregnant women are interested in getting vaccinated against Covid-19. A previous study showed that 79.2% of pregnant women were unsure or did not want to be vaccinated. Around 70% of pregnant women said that there was little acceptance of information regarding COVID-19 vaccination during pregnancy, and 78.4% of pregnant women were worried about the side effects of the vaccine on the fetus or pregnancy complications (Schaal et al., 2022).

It was further reported that the percentage of COVID-19 vaccination itself was lower among young pregnant women, pregnant women from low socioeconomic families, and

pregnant women of Asian ethnicity (Binger et al., 2022). Meanwhile, in Indonesia, a study in Maluku reported that mothers' knowledge and perceptions are determinants for pregnant women to participate in the COVID-19 vaccination (Makayaino & Dolan, 2022). Mothers' interest in participating in the COVID-19 vaccination program is related to their attitude, husbands' support, and the role of health workers (Herdiani, 2022).

OBJECTIVE

This research was conducted to examine the influence of pregnant women's knowledge regarding COVID-19 vaccination, pregnant women's attitudes towards receiving COVID-19 vaccination, and the level of anxiety of pregnant women regarding the side effects of COVID-19 on receiving COVID-19 vaccination during pregnancy.

METHODS

The method used in this research is a quantitative method with a correlational research type. This research was conducted from October 2022 to November 2022. This research was conducted at the Sidorejo Kidul Community Health Center, Salatiga, Central Java, with a total sample of 40 pregnant women as respondents.

The data collection technique directly uses an instrument in the form of a questionnaire. The questionnaire was distributed directly using a questionnaire sheet to respondents who met the inclusion criteria: pregnant women in the 2-3 trimester (minimum 13 weeks pregnant) and pregnant women who were willing to participate in this research filled out the respondent's consent form. The sampling technique in this research used accidental sampling, which carried out sampling data by chance according to the availability of respondents obtained by the researcher.

The questionnaire in this research is divided into four parts. The first part consists of 10 questions about personal data and informed consent. The second part of the knowledge level consists of 10 statement items according to the research problem. The third part of the questionnaire to measure the level of anxiety uses the Spielberger STAI (State-Trait Anxiety Inventory) (1983). Charles D. Spielberger, in collaboration with Richard L. Gorsuch and Robert C. Lushane, created this test to measure two different concepts of anxiety, namely momentary anxiety (state anxiety), and describes the subject's feelings in general or what is called trait anxiety (Spielberger, 2010). The research instrument for the anxiety level variable consists of 10 statement items. The fourth section consists of 2 questions regarding pregnant women's willingness to receive COVID-19 vaccination. The responses given to respondents were forced choice answers, namely with the choices "not at all, a little, moderately and very" for the level of anxiety, willingness, and unwillingness for an attitude of acceptance, and the choices "Yes, No and Do not Know" for the level of knowledge. The data analysis technique uses multiple regression tests with the SPSS version 26.0 application.

RESULTS

First of all, the authors will show the characteristics of the respondents involved in this study. Based on Table 1, the respondents in this study were 19 to 48 years old (55.0%). Most respondents were housewives (60.0%) and had completed high school (52.5%). Respondents involved in this research were in the second trimester of gestation. The result also shows that most respondents accepted vaccination during pregnancy (85.0%).

Table 1. Respondents' characteristics

Characteristic	Frequency	Percentage (%)
Age (y.o)		
19 – 28	22	55.0
29 – 38	17	42.5
39 – 48	1	2.5
Occupation		
Housewife	24	60.0
Public servant	4	10.0
Private sector	12	30.0
Level of education		
Primary school	1	2.5
Junior High School	4	10.0
Senior High School	21	52.5
Higher Education	14	35.0
Gestational age		
Trimester 2	23	57.5
Trimester 3	17	42.5

Based on the results in Table 2, most of the respondents have a medium level of knowledge (90.0%), positive attitude (85.0%), and have been vaccinated (85%). This study's results are similar to a study conducted online in 2021 in the Indonesian community, in which 80.1% of respondents have a good level of knowledge, 53.5% have a positive attitude, and 51.8% have good behavior (Hadning et al., 2022). However, on the other hand, this study also shows that the respondents have severe levels of anxiety (77.5%).

Table 2. Level of Knowledge, Attitudes, Anxiety, and Acceptance of COVID-19 Vaccination

Variables	Frequency	Percentage (%)
Knowledge		
High	1	2.5
Medium	36	90.0
Low	3	7.5
Attitude		
Positive	34	85.0

Variables	Frequency	Percentage (%)
Negative	6	15.0
Level of anxiety		
Mild	0	0.0
Medium	9	22.5
Severe	31	77.5
Panic	0	0.0
Acceptance of vaccination	34	85.0
Vaccinated	6	15.0
Not vaccinated		

Based on the data processing results using the SPSS application, a constant coefficient value of 0.615 was obtained, indicating a positive influence or increase in the independent variables (knowledge, attitude, and anxiety).

Table 3. The Influence of Knowledge, Attitudes, and Anxiety on Acceptance of COVID-19 Vaccination

Model	Non standart coefficient		Standart coefficient		
	B	Std. deviation	Beta	T-test	Sig.
(Constanta)	0.615	0.265		2.323	0.026
Knowledge	0.017	0.009	0.248	2.037	0.049
Attitude	0.447	0.088	0.606	5.071	0.000
Anxiety	0.006	0.009	0.075	0.640	0.526

The value of the independent variable is 0, so the acceptance of COVID-19 vaccination is 0.615 times (so that for every additional 1 point in the independent variable, there is an additional acceptance of 0.615). The knowledge coefficient itself is 0.017, meaning knowledge has a positive effect on acceptance; the attitude coefficient is 0.447, meaning attitude has a positive effect on acceptance; the anxiety coefficient is 0.006, meaning anxiety has a positive effect on accepting COVID-19 vaccination. The research results show that the attitude coefficient value is 0.447, more significant than the knowledge value (0.017) and anxiety (0.006). It implies that attitude has a more dominant influence on the acceptance variable.

DISCUSSION

The results of this study concern about vaccination during pregnancy is still there, but the desire to get vaccinated is also high. The desire to get COVID-19 vaccination during pregnancy is related to knowledge and can be analyzed based on the respondent's education level. A high level of education contributes to a high level of knowledge in pregnant women (Chandra et al., 2019). In this study, most respondents had more than nine years of education. Furthermore, the employment status of a pregnant woman can influence the opportunity and time used to increase knowledge about COVID-19

vaccination and subsequently influence a person's interest in receiving the COVID-19 vaccination (Untari & Kumalasari, 2022). This study also implies that high knowledge did not prevent someone from feeling anxious. Therefore, all of the respondents in this study were experiencing anxiety at medium to severe levels. It might be why the COVID-19 vaccination was still not entirely accepted by pregnant women in this study (15%). For pregnant women who choose not to be vaccinated, several considerations can be reasons for not getting vaccinated while pregnant.

A study in France found that the main reason for anxiety and refusal of COVID-19 vaccination was the potential side effects of the vaccine on the fetus (Egloff et al., 2022). Of course, this is closely related to pregnant women's understanding of the benefits of vaccines and the side events that usually occur after immunization. Previous research shows that women seek information more via the internet than in person due to a lack of trust in health workers. Meanwhile, there is much misinformation circulating about vaccination and COVID-19, which can cause mothers to have negative attitudes regarding vaccination (Fieselmann et al., 2022). Higher trust in the internet as a source of medical information and lower trust in health authorities make women believe that COVID-19 vaccines are ineffective (Toshkov, 2023).

Based on the partial data analysis that has been carried out, the knowledge variable can positively influence the acceptance of COVID-19 vaccination among pregnant women as evidenced by the t count > t table value where more pregnant women with sufficient and high knowledge have a positive influence on the acceptance of Covid-19 vaccination. Knowledge itself is essential for a person's behavior. High knowledge will maximize pregnant women's compliance with the COVID-19 vaccination (Setyaningrum et al., 2022). A study in Bali showed that a high level of knowledge increases the positive attitude of pregnant women 15.5 times to accept COVID-19 vaccination during pregnancy (Sugiartini & Meriyani, 2022).

The research results show that attitude positively influences vaccination acceptance, as evidenced by the t count > t table value, where the higher the positive attitude of pregnant women, the greater the availability of vaccination acceptance. This research is in line with previous research, where the excellent attitude of pregnant women will positively impact acceptance of COVID-19 vaccination (Sugiartini & Meriyani, 2022). A suitable attitude is shaped by a high level of knowledge from someone's experiences or external information. A study in Riau showed that people with poor knowledge about COVID-19 vaccination are 0.58 times more likely to refuse the vaccination (Heriyanto et al., 2023).

Attitudes towards receiving vaccinations are influenced not only by the level of knowledge but also by the surrounding environment, especially the attitudes of public figures who are also willing to receive vaccinations. Research conducted in the Philippines proves this, where 72.8% of the population received vaccination after other people around them received vaccination and 68.2% after politicians received the COVID-19 vaccination (Caple et al., 2022). Social influence can contribute to increasing a person's interest in receiving vaccination. This contribution occurs through information provided by other people or through the media in a positive way about

vaccination, which will influence or encourage pregnant women to have a positive attitude or be willing to be vaccinated against COVID-19.

Based on the results of statistical analysis tests, the anxiety variable does not influence acceptance of COVID-19 vaccination, but descriptively, all respondents in this study experienced anxiety. This research is in line with previous research that anxiety during pregnancy is not significantly influenced by COVID-19 vaccination status. However, most pregnant women are more worried about the influence of previous pregnancy status on the current pregnancy (Taubman – Ben-Ari et al., 2022). Even the women experiencing anxiety, most of the respondents are vaccinated, which might be because of several reasons: having older age, multiparity, having discussed it with a caregiver, and having a positive attitude to accept the vaccine (Egloff et al., 2022). Still, 15% of the pregnant women in this study did not vaccinate, leaving the task for the government and health workers to find the best strategy to influence pregnant women to want to be vaccinated.

CONCLUSION

Among knowledge, attitude, and anxiety levels, attitude is the most influential factor in supporting pregnant women in accepting COVID-19 vaccination. Attitude to having vaccinated during pregnancy is influenced by knowledge about the benefits and the side effects of the COVID-19 vaccine, especially for the fetus. This knowledge should come from trusted sources of information. Since the internet is the most preferable source of information, it is recommended for the government and health workers to maximize the use of internet media in disseminating important information regarding COVID-19 vaccination during pregnancy so that the correct information can be received by pregnant women and support their attitude towards receiving COVID-19 vaccination.

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