



Determining of internal factors affecting compliance of pregnant women in Covid-19 vaccination

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ABSTRAK

Latar Belakang: Vaksinasi Covid-19 pada ibu hamil merupakan upaya pencegahan dan penularan Covid-19 pada ibu hamil. Kepatuhan ibu hamil merupakan perilaku ibu hamil yang sesuai dengan pedoman. Kepatuhan ibu hamil dalam vaksinasi Covid-19 menjadi hal yang penting untuk diteliti karena untuk meningkatkan kepatuhan ibu hamil dalam vaksinasi Covid-19 secara lengkap, sehingga meningkatkan imunitas ibu hamil. Kepatuhan dapat dipengaruhi oleh beberapa faktor internal yang dapat mempengaruhi kepatuhan ibu hamil dalam vaksinasi Covid-19 diantaranya usia ibu hamil, usia kehamilan, status pendidikan, pekerjaan, pengetahuan, motivasi, persepsi, dan efikasi diri

Tujuan: Menganalisis hubungan usia ibu, usia kehamilan, status pendidikan, pekerjaan, pendapatan, pengetahuan, motivasi, persepsi, dan efikasi diri dengan kepatuhan ibu hamil dalam vaksinasi Covid-19. Menganalisis faktor internal yang paling berpengaruh terhadap kepatuhan ibu hamil dalam vaksinasi Covid-19.

Metode: Desain penelitian ini menggunakan deskriptif kuantitatif dengan pendekatan cross sectional. Populasi dalam penelitian ini berjumlah 86 ibu hamil. Teknik sampling menggunakan quota sampling dengan jumlah sampel 46 ibu hamil. Instrumen penelitian menggunakan kuesioner yang telah diuji validitas dan reliabilitas. Analisis data menggunakan Uji Chi Square dan regresi berganda.

Hasil: Hasil penelitian diperoleh faktor yang berhubungan dengan kepatuhan ibu hamil dalam vaksinasi Covid-19 adalah usia kehamilan (p value 0.002). Sedangkan, faktor yang tidak berhubungan dengan kepatuhan ibu hamil dalam vaksinasi Covid-19 adalah usia ibu hamil (p value 0.497), status pendidikan (p value 0.252), pekerjaan (p value 0.829), pendapatan (p value 0.605), pengetahuan (p value 0.351), motivasi (p value 0.558), persepsi (p value 0.295), dan efikasi diri (p value 1.000)

Kesimpulan: Kesimpulan penelitian ini adalah faktor yang paling berpengaruh terhadap kepatuhan ibu hamil dalam vaksinasi Covid-19 adalah usia kehamilan dengan nilai p value 0.005 ($\alpha = 0.05$) dan responden dengan usia kehamilan lebih muda beresiko 0.047 kali mengalami ketidakpatuhan terhadap vaksinasi Covid-19.

KATA KUNCI: covid 19; kehamilan; kepatuhan vaksinasi; faktor internal

ABSTRACT

Background: Covid-19 vaccination for pregnant women was an effort to prevent and transmit Covid-19 to pregnant women. Obedience of pregnant women is the behavior of pregnant women in accordance with the guidelines. Compliance of pregnant women in the Covid-19 vaccination is important to study because it is to increase the complete adherence of pregnant women in the Covid-19 vaccination, thereby increasing the immunity of pregnant women. Internal factors that can influence pregnant women's

compliance with Covid-19 vaccination include the pregnant woman's age, gestational age, educational status, employment, knowledge, motivation, perception and self-efficacy.

Objectives: Analyzing the relationship between maternal age, gestational age, educational status, occupation, income, knowledge, motivation, perception, and self-efficacy with pregnant women's adherence to the Covid-19 vaccination. Analyze the internal factors that most influence the adherence of pregnant women in the Covid-19 vaccination.

Methods: The research design used a quantitative descriptive with a cross sectional approach. The population in this study amounted to 86 pregnant women. The sampling technique used quota sampling with a sample of 46 pregnant women. The research instrument uses a questionnaire that has been tested for validity and reliability. Data analysis using Chi Square Test and multiple regression.

Results: The results of the study showed that the factor associated with the compliance of pregnant women in the Covid-19 vaccination was gestational age (p value 0.002). Meanwhile, factors that were not related to the compliance of pregnant women in the Covid-19 vaccination were the age of the pregnant mother (p value 0.497), educational status (p value 0.252), occupation (p value 0.829), income (p value 0.605), knowledge (p value 0.351), motivation (p value 0.558), perception (p value 0.295), and self-efficacy (p value 1.000).

Conclusions: The conclusion of this study is that the factor that most influences pregnant women's adherence to the Covid-19 vaccination is gestational age with a p -value of 0.005 ($\alpha = 0.05$) and respondents with a younger gestational age are at risk of 0.047 times experiencing non-adherence to Covid-19 vaccination.

KEYWORD: covid-19; pregnancy; vaccination compliance; internal factors

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INTRODUCTION

Indonesia is a country affected by the Covid-19 pandemic or Corona Virus Disease-19. Covid-19 is an infectious disease caused by a new variant of the corona virus that was discovered in Wuhan City, China at the end of 2019 (RI Ministry of Health, 2020). This virus attacks various vulnerable groups from infants, children, adolescents, the elderly, productive age and even pregnant women (1). Report from the Indonesian

Association of Obstetrics and Gynecology (POGI) for the period April 2020-April 2021 there were 536 pregnant women exposed to Covid-19 and 3% of them died (2). The Klaten district Health Office revealed that in July 2021, there were 159 pregnant women who were confirmed positive and 26 of them died (3). Efforts being made to tackle this pandemic are holding a Covid-19 vaccination program, especially vaccination for

pregnant women (4). The coverage of the Covid-19 vaccine for pregnant women in the first dose of Klaten Regency was 4,474 pregnant women and the second dose was 2,488 pregnant women (4). Covid-19 vaccination for pregnant women can be driven by a number of things including belief in the benefits of the Covid-19 vaccine, use of social media for information related to the Covid-19 vaccine and also adherence to government programs in efforts to prevent, transmit and spread Covid-19 (5). Compliance can be influenced by several factors, including knowledge, motivation, perceptions and beliefs in how to control and prevent disease, environmental variables, quality of health education and the ability to access available resources. The highest factor in the Covid-19 vaccination during pregnancy is the belief about the importance and effectiveness of the vaccine.

The authenticity of this research is supported by the research of Ayenew Mose and Alex Yeshaneh (6) regarding COVID-19 Vaccine Acceptance and Its Associated Factors Among Pregnant Women Attending Antenatal Care Clinic in Southwest Ethiopia. The difference between this research and previous research lies in the sampling technique, research location, and population.

Previous studies used a systematic random sampling technique (systematic random sampling), while this study used a quouta sampling technique. The location of the previous research was at the Zonal Gurage general hospital in southwest Ethiopia, while this research was at the Wonosari I Community Health Center, Klaten Regency. The population of the previous study was 396 respondents while this research was 86 respondents. The results of previous studies showed that 70.9% of pregnant women accepted and adhered to the Covid-19 vaccination, while the results of this study showed that 34.8% of pregnant women adhered to the Covid-19 vaccination from dose 1 to booster.

MATERIALS AND METHODS

This study used a quantitative descriptive method with a cross-sectional study approach. The materials used in this study used 5 questionnaires, namely respondent characteristics questionnaires, knowledge questionnaires, motivational questionnaires, perception questionnaires, and self-efficacy questionnaires.

The population in this study amounted to 86 pregnant women. The sampling technique of this study used quota sampling with 46 pregnant women.

The place of this research was conducted at the Wonosari I Puskesmas, Klaten Regency. The collection or research stages are collecting WhatsApp questionnaire numbers, creating a research WhatsApp group, and collecting data door-to-door. Statistical test using frequency distribution, chi square and multiple regression analysis (7).

RESULTS AND DISCUSSION

RESULTS

The following is the frequency distribution based on respondent characteristics. The study used 46 samples of pregnant women.

Based on **Table 1** above, it can be seen that the characteristics of most of the respondents belong to healthy reproductive age (20-35 years) with 37 respondents (80.4%), the majority of gestational age, namely the third trimester with a frequency of 27 respondents (58.7%), the education level of the majority of respondents secondary education with a frequency of 35 (76.1%), the majority of

respondents did not work with a frequency of 24 (52.2%), the majority income was low with a frequency of 31 respondents (67.4%), the knowledge of the majority of respondents was good with a frequency of 30 (65.2%), the majority motivation is high with a frequency of 29 respondents (63.0%), the perception of the majority of respondents is negative with a frequency of 33 (71.7%), the variable self-efficacy has the same value between high and low with a frequency of 23 respondents (50.0%), compliance of respondents in the Covid-19 vaccination the majority were disobedient with a frequency of 30 (65.2%).

The following is the frequency distribution based on the Relationship between gestational age, educational status, employment, income, knowledge, motivation, perception and self-efficacy with compliance with COVID-19 vaccination. The study used 46 samples of pregnant women with a 95% confidence interval distribution.

Table 1. Frequency distribution of respondent characteristics

Characteristics	n	
	f	%
Age (years old)		
Healthy reproductive age	37	80.4
Risk age	9	19.6
Gestational Ages		

1 st trimester	1	2.2
2 nd trimester	18	39.1
3 th trimester	27	58.7
Educational Status		
High	8	17.4
Intermediate	35	76.1
Elementary	3	6.5
Work		
Working	22	47.8
Notworking	24	52.2
Income		
High	15	32.6
Low	31	67.4
Knowledge		
High	30	65.2
Low	16	34.8
Motivation		
High	29	63
Low	17	37
Perception		
Positive	13	28.3
Negative	33	71.7
Self Efficacy		
High	23	50
Low	23	50
Compliance		
Compliance	16	34.8
Not Compliance	30	65.2

Table 2. Relationship between gestational age, educational status, employment, income, knowledge, motivation, perception and self-efficacy with compliance with COVID-19 vaccination

Variable	Compliance				p value
	compliance		Not compliance		
	f	%	f	%	
Ages					
Healthy reproductive age	12	26.1	25	44.3	0.497
Risk age	4	8.7	5	10.9	
Gestational Ages					
1 st trimester	0	0.0	1	2.2	0.002
2 nd trimester	1	2.2	17	37.0	
3th trimester	15	32.6	12	26.1	
Educational Status					
High	4	8.7	4	8.7	0.252
Intermediate	10	21.7	25	54.3	
Low	2	4.3	1	2.2	
Work					

Working	8	17.4	14	30.4	0.829
Not working	8	17.4	16	34.8	
Income					
High	6	13.0	9	19.6	0.605
Low	10	21.7	21	45.7	
Knowledge					
High	9	19.6	21	45.7	0.351
Low	7	15.2	9	19.6	
Motivation					
High	11	23.9	18	39.1	0.558
Low	5	10.9	12	26.1	
Perception					
Positive	3	6.5	10	21.7	0.295
Negative	13	28.3	20	43.5	
Self Efficacy					
High	8	17.4	15	32.6	1.000
Low	8	17.4	15	32.6	
Total	16	34.8	30	65.2	

Based on **Table 2.** the value of Sig. on the age characteristic of pregnant women 0.497. It can be concluded that there is no significant relationship between the age of pregnant women and compliance with Covid-19 vaccination. Characteristics based on gestational age obtained Sig. of 0.002 so it can be concluded that there is a relationship between gestational age and Covid-19 vaccination.

Characteristics based on educational status obtained Sig. 0.252. That's mean that there is no significant relationship between educational status and compliance with Covid-19 vaccination. Characteristics based on work obtained Sig. 0.829, It can be concluded that there is no significant relationship between work and Covid-

19 vaccination compliance. Characteristics based on income obtained Sig. 0.605. It can be concluded that there is no significant relationship between income and compliance with Covid-19 vaccination. Characteristics based on knowledge obtained Sig. 0.351. It can be concluded that there is no significant relationship between knowledge and compliance with Covid-19 vaccination. Characteristics based on motivation obtained Sig. 0.558. It can be concluded that there is no significant relationship between motivation and compliance with Covid-19 vaccination. Characteristics based on perception obtained Sig. 0.295. It can be concluded that there is no significant relationship between perception and compliance with Covid-19 vaccination. Characteristics based on self-efficacy

obtained Sig. 1,000. It can be concluded that there is no significant

relationship between self-efficacy and compliance with Covid-19 vaccination.

Table 3. Logistic regression analysis

Variable	B	p value	OR	95% CI	
				Lower	Upper
Gestational ages	-3.063	0.005	0.047	0.005	0.400
Constant	8.964	0.005	7817.492		

DISCUSSION

The emerging infectious disease Covid-19 has had a devastating impact on pregnant women. Although, after the vaccine trial, the World Health Organization approved the Covid-19 vaccine to reduce the spread and transmission of Covid-19 in pregnant women. However, vaccine compliance is a challenge globally. The findings of this study indicate that only 34.8% of pregnant women who carry out the complete Covid-19 vaccination. The results were higher than studies conducted in Ethiopia (70.9%), China (77.4%), Qatar (75%), and Italy (74.5%) receiving and carrying out the Covid-19 vaccination. The explanation for the difference is only due to differences in perception, self-efficacy, awareness about the severity of Covid-19, and differences in the study population (8)

In this study, it was found that pregnant women in the age group of 20 to 35 years were more likely to receive the Covid-19 vaccine compared to pregnant women found in the age group >35 years.

As age increases there may be age-related chronic diseases such as hypertension, kidney disease, and heart disease which can reduce pregnant women's immunity and increase the risk of Covid-19 related morbidity and death. Because of this, creating fear in the old age group population and they may have more intention to receive the Covid-19 vaccine (9). The large number of respondents of healthy reproductive age (20-35 years) is because this age is the safe age range for carrying out a pregnancy that is physically and sexually mature (10). Mothers of productive age (20-35 years) can think more rationally compared to mothers who are younger or too old. As they get older, their obedience and thinking style should develop further, thus influencing the pregnant woman's compliance with the Covid-19 vaccine. As pregnant women get older, they tend to comply with Covid-19 vaccination, this is related to the level of experience of pregnant women (10).

Pregnant women who have an older gestational age are 32.6% compliant with the Covid-19 vaccination compared to pregnant women who have a younger gestational age. At the age of 13 weeks and above is the recommended gestational age for the Covid-19 vaccination because it can reduce the risk of premature birth and complications in pregnant women and the fetus. Also, it is aimed at reducing the mortality rate of pregnant women with Covid-19 which is quite high (11)

Pregnant women who have completed secondary education (junior high and high school) are more compliant with the Covid-19 vaccination. These findings are consistent with studies conducted in Southwestern Ethiopia and Switzerland. Mothers who choose to complete secondary education have the ability to read news and follow social media regarding the impact of the Covid-19 virus on the general population, and its mortality. Therefore, they show an intention to carry out and comply with the Covid-19 vaccination compared to other mothers (12)

Pregnant women who work with low incomes are more compliant with the Covid-19 vaccination. Pregnant women who work or do not work have the same opportunity to obtain information about health services, including health services regarding Covid-19 vaccination for

pregnant women. A person's work status can affect the opportunity and time used to increase knowledge about Covid-19 vaccination in pregnant women. Low income actually does not affect compliance with Covid-19 vaccination because the Covid-19 vaccine for pregnant women has received subsidies from the government so that these pregnant women do not incur costs for the complete Covid-19 vaccination (13)

This study assessed knowledge, motivation, perception, self-efficacy of mothers. The findings of this study indicate that 65.2% have good knowledge about Covid-19 vaccination. The result is higher than the study conducted in Southwest Ethiopia (95%). Pregnant women who have good knowledge about Covid-19 are only 2 mothers receiving the Covid-19 vaccination. This can be explained that pregnant women who are knowledgeable about Covid-19 may know the severity of the Covid-19 virus for themselves and also for their fetuses, so that they can easily receive the Covid-19 vaccine to reduce the impact of the pandemic. This is also supported by the "Reason Action Theory" which states that an individual's intention to accept a certain behavior is a function of their current state of knowledge of that behavior. These findings are comparable to recent studies conducted in Addis Ababa among adult

and South African populations among pregnant women. Likewise, mothers who have good practices and prevention will accept and comply with the Covid-19 vaccination. This could be because pregnant women have good practice knowledge of the impact of the Covid-19 virus on population health. Therefore, to reduce the above risk of complications they may receive the Covid-19 vaccine (14).

The number of respondents who did not comply with the complete Covid-19 vaccination even though they had high motivation but had a low level of adherence because pregnant women did not carry out complete vaccinations (dose 1, dose 2, and booster). This is influenced by several factors, especially the lack of information widely because pregnant women do not work so there is a lack of socialization with other people (15). Motivation can affect compliance because motivation is an internal human condition such as desire and hope that encourages individuals to behave in order to achieve the desired goals (16).

The results of this study are in line with research (17) which stated that the majority of respondents refused or doubted the Covid-19 vaccine due to a lack of perception or respondents had a negative perception of Covid-19 disease (17.1%), causing respondents not to comply with the Covid-19 vaccination.

The large number of respondents in the negative perception category caused respondents to not comply with the complete Covid-19 vaccination (dose 1, dose 2, and booster). Information circulating in the community certainly influences people's perceptions of the Covid-19 vaccine (18). However, people who receive good information through hearing and sight certainly influence their perceptions of the Covid-19 vaccine. So that people's perceptions will influence people's attitudes and behavior towards vaccines (19).

Compliance based on the characteristics of the respondents' self-efficacy shows that respondents with high and low self-efficacy categories both have the same value between the obedient and non-compliant categories. According to Sutarto (20) the better a person's self-efficacy, the higher the level of compliance. Self-efficacy will have an impact on how pregnant women feel, think, motivate themselves and behave in the sense of behaving for the Covid-19 vaccination (21).

The results of multivariate analysis with Logistic regression showed that gestational age the most dominant factor influencing pregnant women's adherence to the Covid-19 vaccination was gestational age with a p value of 0.005 ($p < 0.05$) with the results of an OR analysis (odds ratio) on the age factor

pregnancy affected 0.047 times, which means that respondents with a younger gestational age were at risk of 0.047 times experiencing non-compliance. This is because respondents who comply with Covid-19 vaccination are dominated by the third trimester category.

This research is in line with research (22). The study categorized gestational age into 3 categories, namely 30.0% 2-3 months gestation, 47.5% 4-6 months gestation, and 22.5% 7-9 months gestation. And it can be concluded that the highest gestational age is in the second trimester (4-6 months).

Compliance with pregnant women in the Covid-19 vaccination is an effective effort to transmit the Covid-19 virus to pregnant women. But not all pregnant women are allowed the Covid-19 vaccination, namely pregnant women who have co-morbidities that are not

controlled are not allowed and gestational age must be more than 13 weeks and less than 34 weeks (23).

This trimester is the recommended gestational age for Covid-19 vaccination because in addition to reducing the spread of Covid-19 in pregnant women it can also reduce the risk of premature birth and other complications of death. Also, it is aimed at reducing the quite high death rate of pregnant women with Covid-19. The gestational age of 13-34 weeks is the recommended gestational age for pregnant women for the Covid-19 vaccination because at that age it is relatively safe for the fetus and if you have mild symptoms. The first trimester (0-12 weeks) is a period of fetal formation which is feared to have serious impacts or side effects, but there is no definite research related to this (24, 25).

CONCLUSION AND RECOMMENDATION

The conclusion of this study is that the characteristics of the majority of respondents in this study belong to healthy reproductive age (20-35 years) , third trimester of pregnancy, secondary education status (junior high and high school), not working, and low income. Respondents in this study mostly had good knowledge, respondents had high motivation, respondents had negative

perceptions and respondents' self-efficacy in Covid-19 vaccination compliance had the same value, namely high self-efficacy and low self-efficacy. The level of compliance of respondents in compliance with the Covid-19 vaccination was mostly non-adherent. The factor related to adherence to Covid-19 vaccination is gestational age (p value 0.002). Meanwhile, factors that were not related to Covid-19 vaccination compliance were the age of pregnant women , educational

status , occupation , income , knowledge ,motivation , perception , and self-efficacy. And the factor that most influences pregnant women's adherence to the Covid-19 vaccination is the variable gestational age This is because respondents who comply with the Covid-19 vaccination are dominated by respondents in the third trimester category.

Pregnant women should immediately carry out a complete Covid-19 vaccination because it can increase the pregnant woman's immune system and provide fetal protection against the Corona virus or SARS-CoV-2 which can cause congenital abnormalities and even death. Health workers are expected to always provide support and motivation to pregnant women in the form of health education so that pregnant women can comply with the regulations set out in the Covid-19 vaccination program.

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