

THE ASSOCIATION OF EDUCATION LEVEL WITH COVID-19 VACCINATION ACHIEVEMENT FOR PREGNANT WOMEN IN PADANG CITY 2021

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ABSTRACT

Background: Coronavirus Disease 2019 (COVID-19) is the second pandemic of the 21st century. There were 5,350,902 people infected with COVID-19 in Indonesia until February 2022. Based on data from the National Population and Family Planning Agency (BKKBN), there has been an increase in the pregnancy rate by 20.3% during the pandemic in Indonesia. 50% of pregnant women infected with COVID-19 underwent intensive care in the ICU, 33% required ventilator assistance, and 25% died. Reducing the spread of the coronavirus has been carried out in all provinces, including providing vaccinations. The researcher's initial observations found that the vaccination achievement of the city of Padang was quite low. One of the factors that influence the achievement of the vaccination is the level of education. This research aims to determine the relationship between the education level of pregnant women and the achievement of COVID-19 vaccination in Padang City. Methods: This study used an analytic observational method with a cross-sectional approach. The total sample was 100 pregnant women, selected using random sampling techniques. The data used in this study are COVID-19 vaccination status and education level. The data analysis used is the Chi-Square correlation test. Results: Based on the results of data analysis, there was a relationship between education level and the achievement of COVID-19 vaccination of pregnant women at Padang City with a value of $p = 0.000$ ($p < 0.05$). Conclusion: There was a relationship between the education level of pregnant women and the achievement of COVID-19 vaccination in Padang City.

Keywords: COVID-19., Education Level., Pregnant Women., Vaccination.

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) is the second pandemic of the 21st century. Coronavirus disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This virus first appeared in Wuhan, Hubei, China, in December 2019.¹The first case of COVID-19 in Indonesia was in March 2020 in Depok.²The virus spread very quickly in various regions of Indonesia. Patients infected with COVID-19 based on data from the Ministry of Health of the Republic of Indonesia (KEMENKES) as of February 2022 are 5,350,902 people, with the number of recoveries reaching 4,632,355 people and 147,025 patients dying.³Data from the National Population and Family Planning Agency (BKKBN) showed that the pregnancy rate increased by 20.3% during the pandemic in Indonesia. The pregnancy rate exploded during the COVID-19 pandemic, allegedly due to the large number of people doing activities at home accompanied by a decrease in the use of contraceptives.⁴ The BKKBN noted that during the pandemic there was a quite drastic decrease in the use of contraceptives, namely 35-47%.⁵

Pregnant women are a group that is vulnerable to respiratory diseases and pneumonia. This can occur because during pregnancy there are physiological changes in pregnancy, such as

an increase in the diaphragm, increased oxygen consumption, and edema of the respiratory tract mucosa which can make it vulnerable to hypoxia. 50% of pregnant women infected with COVID-19 underwent intensive care in the ICU, 33% required ventilator assistance, and 25% died. Laboratory test results also show that lymphopenia and increased ALT and ALS levels can occur as clinical manifestations of COVID-19. Pregnant women who show symptoms have higher levels of lymphopenia compared to pregnant women without symptoms of COVID-19.⁶Therefore, it is necessary to provide therapy and vaccination to avoid complications that can occur in the mother and fetus. Research on the benefits of vaccination as a reference for medical services in providing education to pregnant women appears to be relatively limited. Many different perceptions emerge from pregnant women regarding the benefits and effectiveness of COVID-19 vaccination on the health of pregnant women.⁷

One of the factors that influence vaccination is the individual's education level.⁸ If the education level is good, then behavior will also be good. This research is also in line with research conducted by Zhong BL, who researched that Chinese society, the place where the coronavirus was first discovered, also had good and positive knowledge and behavior.⁹The results of the researchers' initial observations showed that the city of Padang had a fairly low vaccination rate. There were 17,317 pregnant

women in Padang City with a vaccine target of 5,046 people. From the observation results, it was found that 768 pregnant women had carried out vaccination 1 and as many as 293 pregnant women had carried out vaccination 2.¹⁰ The vaccination achievement was relatively low. One of the factors that influences vaccination achievement is the level of community education. Therefore, this study aims to determine the relationship between the education level of pregnant women and the achievement of COVID-19 vaccination in Padang City in 2021

MATERIALS AND METHOD

This research uses an observational analytical method with a cross-sectional research design. Researchers collected secondary data on medical records of pregnant women in 2021 taken from all health centers in Padang City. Sampling used a simple random sampling technique based on inclusion and exclusion criteria. Inclusion criteria include pregnant women in Padang City in 2021 and having COVID-19 vaccination data. The exclusion criteria were pregnant women whose education level data was incomplete. The sample size calculation uses the Slovin formula so that from a population of 17,313 pregnant women, a sample of at least 100 people is obtained. The independent variable in this research is education level, with the results measuring low education (primary school and junior high school) and high education (high school and college). The dependent variable of the research is vaccination status. This research was conducted from March to October 2022.

The data collected was analyzed descriptively using SPSS ver 26.0, and grouped based on research variables including education level and vaccination status. Furthermore, from the descriptive data, an analysis was carried out in the form of a relationship to determine the relationship between education level and vaccination achievement in Padang City using the chi-square test with the significance value determined at $p < 0.05$.

RESULT

Univariate Analysis Result

Table 1. Distribution of average frequency of COVID-19 vaccination achievements among pregnant women in Padang City

Area of residence	COVID-19 vaccination status				Total	
	Vaccinated		Not yet vaccinated		f	%
	f	%	f	%		
Kuranji	15	15%	2	2%	17	17%
Lubuk Buaya	10	10%	11	11%	21	21%
Koto Tangah	8	8%	5	5%	13	13%
Lubuk Begalung	4	4%	2	2%	6	6%
Bungus	5	5%	1	1%	6	6%
Andalas	2	2%	0	0%	2	2%
Padang Barat	22	22%	1	1%	23	23%
Nanggalo	11	11%	1	1%	12	12%
Total	77	77%	23	23%	100	100%

Table 1 shows that more pregnant women received the COVID-19 vaccination, namely 77%. The highest achievement was in West Padang at 22% and the lowest achievement for COVID-19 vaccination was in the Andalas region at 2%.

Table 2 Frequency distribution of education levels among vaccinated pregnant women

Level of education	f	%
Low education	8	10.4%
High education	69	89.6%
Total	77	100%

Table 2 shows data on education levels based on low-education and high-education categories. Based on 77 samples who had been vaccinated against COVID-19, 8 (10.4%) pregnant women had a low level of education and 69 (89.6%) pregnant women had a high level of education.

Bivariate Analysis Result

Table 3. Relationship between level of education and achievement of COVID-19 vaccination in pregnant women

Level of education	Achievement of COVID-19 vaccination				P value
	Not yet vaccinated		Vaccinated		
	f	%	f	%	
Low education	15	65.2%	8	34.8%	0,000
High education	8	10.4%	69	89.6%	

Table 3 shows that there are more pregnant women who have received COVID-19 vaccination at higher education levels (89.6%), while more pregnant women who have not received COVID-19 vaccinations are at low education levels (65.2%). Based on the results of data analysis, there is a relationship between education level and achievement of COVID-19 vaccination among pregnant women in Padang City with a value of $p = 0.000$ ($p < 0.05$).

DISCUSSION

Frequency distribution of COVID-19 vaccination achievements among pregnant women in Padang City.

Based on research from 100 samples taken, it was found that 77% of pregnant women had been vaccinated against COVID-19 and 23% of pregnant women had not been vaccinated against COVID-19 with the highest vaccination achievement in the West Padang region.

The results of the research above are in line with research conducted by Reza Dara Pertiwi et al in the DKI Jakarta area which showed that 149 respondents took part in this research, of the total respondents 98 people had been vaccinated (65.8%) and 65.3% of them had fully vaccinated with two doses. On average, respondents were vaccinated in

the October 2020 period. The type of vaccine that was widely used was Sinovac (66.3%), while for vaccination locations, 63.3% received it at the community health center.¹¹

COVID-19 vaccination for pregnant women is carried out to prevent and control transmission so that it can be done correctly and quickly. Seeing the rapid spread of this virus, one way is to develop a vaccine. The development of COVID-19 vaccination has now begun, especially vaccinations given to pregnant women. Developing a Covid vaccine is effective because it can prevent the spread of the disease in the future.¹²

Emergency use regulations for vaccines are the basis for administering vaccines, especially in the context of a pandemic that has reached 200 million cases. SARS-CoV-2 infection in pregnant women causes morbidity in newborns, such as premature labor, fetal distress, respiratory problems, thrombocytopenia accompanied by abnormal liver function, and death. However, vertical transmission of SARS-CoV-2 has not been clinically confirmed. Therefore, vaccination has a high probability of preventing severe COVID-19 infection and its side effects in pregnant patients and their neonates.¹³

Vaccination is carried out to reduce the rate at which people become infected and force the body to form antibodies so that, if infected with COVID-19, the symptoms will be milder. COVID-19 vaccination in pregnant women can protect and prevent complications during the early stages of pregnancy and pre-pregnancy.¹⁴

Frequency distribution of education level among pregnant women who have received COVID-19 vaccination.

Based on the research results, it show that of the 77 pregnant women who had been vaccinated against COVID-19, 69 (89.6%) pregnant women had a high level of education and 8 (10.4%) pregnant women had a low level of education.

These results are in line with research conducted by Siti Karimah, et al that of the 30 respondents from pregnant women who were vaccinated, 63.33% had higher education.¹⁵ Apart from that, Dewi Ayu Ningsih's research also obtained the same results from 167 pregnant women who were vaccinated, and 101(60.5%) were with tertiary education.¹⁶

A good level of education about COVID-19 vaccination helps people to get vaccinated against COVID-19. A person's attitudes and behavior can be formed through learning and training processes which are influenced by the individual's level of education, social support, and information from various media. This is possible because people with a higher level of education are more likely to absorb information from both electronic media (television) and social media.¹⁷

Education means guidance that someone gives to others about something so that they can understand. It cannot be denied that the higher a person's education, the easier it is for them to receive information, and ultimately the more knowledge they have. On the other hand, if a

person's level of education is low, it will hinder the development of a person's attitude toward acceptance, information and newly introduced values.¹⁸

Relationship between Education Level and Achievement of COVID-19 Vaccination

The results of data analysis and hypothesis testing showed that there was a significant relationship between the education level of pregnant women and the achievement of COVID-19 vaccination in Padang City, namely $p = 0.000$ ($p < 0.05$).

The results of this study are in line with research by Siti Karimah et al, that the percentage of pregnant women with basic education and participating in the COVID-19 booster vaccination was 12.5%. The percentage of pregnant women with higher education and participation in the COVID-19 booster vaccination was 73.1% (19 pregnant women), more than pregnant women with higher education and not participating in the COVID-19 booster vaccination, which was 26.9%. Based on the results of statistical tests using Chi-Square, the result was p value = 0.000. The p -value is < 0.05 , so it can be concluded that there is a relationship between pregnant women's education and participation in the COVID-19 booster vaccination. The contingency coefficient value of 0.472 indicates that the level of close relationship between pregnant women's education and participation in COVID-19 booster vaccination is moderate.¹⁵ This is different from research by Dewi Ayu Ningsih et al. that there is no relationship between educational variables and the participation status of Covid-19 vaccination among pregnant women in Bandar Lampung City in 2022 with a p -value = 0.638.¹⁶

One factor that can influence pregnant women's desire to vaccinate against COVID-19 is their level of education. Apart from that, a person's formal education has a huge influence on knowledge. Women with a higher level of education tend to have better health levels. Education can change the behavioral attitudes of a person or group of people to mature humans through teaching and training efforts.¹⁷

Good education is expected to influence behavior to maintain health and promote more conducive health. A person's level of education influences how they respond to something that comes from outside. Highly educated people will be more rational creative and open in accepting various reform efforts, they will also be more able to adapt to various changes. The education achieved by a person is expected to be a determining factor in productivity, including knowledge, skills, abilities, attitude, and behavior, which are sufficient in carrying out their work activities.¹⁸

Education means the guidance that a person provides towards the development of others towards certain ideals that determine humans to act and fulfill their lives to achieve safety and happiness. Education is needed to obtain information, for example, things that support health so that it can improve the quality of life. Education can influence a person, including a person's behavior and lifestyle, especially in motivating attitudes towards participating in

development. In general, the higher a person's education, the easier it is to receive information.¹⁹

CONCLUSIONS AND SUGGESTIONS

COVID-19 vaccination is related to the educational level of pregnant women. The higher the level of education of pregnant women, the higher the desire of pregnant women to vaccinate against COVID-19.

Based on the research that has been carried out, several suggestions that the author can give that it is hoped that further research will add other variables that might influence vaccination achievement. Apart from that, it is necessary to collect data using the direct interview method if the pandemic situation is under control, to reduce the limiting factors in this research.

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