



Research article

CONTEXTUAL FACTORS, VACCINATION DETERMINANTS, AND ADHERENCE TO COVID-19 INOCULATION AMONG PREGNANT WOMEN

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ABSTRACT



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Background: Maternal inoculation is the most effective way to combat COVID-19, reducing morbidity in pregnant women and newborns. This study focused on investigating the factors influencing COVID-19 inoculation adherence among pregnant women in a government hospital in Paranaque City, Philippines. **Research Method:** Conducted through a descriptive-correlational research design involving 245 randomly selected pregnant women, the study employed three researcher-made questionnaires to gather data on contextual factors, vaccination determinants, and adherence to COVID-19 inoculation. **Results:** The findings revealed that most of the respondents were between 20 and 30 years old, Roman Catholic, Tagalog-speaking, unemployed, with a secondary education, expecting their first child, and without any existing medical illnesses. The study reported a very high level of adherence to COVID-19 vaccination among the pregnant women. There was a significant difference in the respondent's adherence to COVID-19 inoculation and medical illness. The study identified a significant relationship between social factors and adherence to COVID-19 inoculation as to self-efficacy, confidence, convenience, and complacency in pregnant women. Furthermore, the study determined that only medical illnesses and social factors predicted adherence to vaccination. **Conclusion:** The study highlighted the crucial role of community and healthcare support in promoting vaccination acceptance among pregnant women, emphasizing effective communication about vaccine safety and efficacy. Additionally, it underscored the need for targeted interventions addressing health concerns and hesitancy to bolster vaccination rates. Future research is recommended to corroborate strategies to encourage widespread vaccine uptake and ensure maternal and neonatal well-being providing valuable insights for healthcare workers and policymakers.

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INTRODUCTION

Pregnant women's immunologic and physiological changes during pregnancy can increase their risk of developing serious respiratory infections (Wadman, 2020). Women with COVID-19 are more susceptible to hospital admission and have a higher risk of requiring mechanical ventilation and ICU hospitalization (Ellington et al., 2020; Badell et al., 2022). Maternal vaccination has been proven to be highly helpful in reducing morbidity in pregnant women and newborns from adverse pregnancy outcomes (Whitehead & Walker, 2020), but uptake has been poor in some areas.

Filipinos are unsure of adopting these vaccines due to widespread claims regarding their safety and effectiveness. Given the size of the country and its history of vaccination reluctance, it is critical to understand how pregnant women would respond to a vaccine based on different factors (Wubedle et al., 2022). As of September 2022, the Philippines had administered more than 162 million doses of COVID vaccination, equivalent to 93.34 percent

of the target population being covered. However, there is a low vaccination rate of 19 percent among pregnant women in the country (Cagayan et al., 2022). Seventy-one percent of pregnant individuals in the U.S. have been fully vaccinated against COVID-19 (Centers for Disease Control and Prevention COVID Data Tracker, 2022). Thailand has an actual vaccination percentage among the participating Thai women immunized during pregnancy of 88.3 percent (Pairat & Phaloprakarn, 2022). Patients, especially pregnant women who have comorbid conditions like hypertension, diabetes, and obesity, may have an even higher risk of developing serious illnesses as a result of this pandemic (Ellington et al., 2020; Yan et al., 2021). Women from regions with fewer resources for emergency care are at a much greater risk of maternal morbidity and mortality (Villar et al., 2021). Effective inoculations are eagerly awaited as COVID-19 continues to rage worldwide, but vaccination concern is prevalent.

Vaccination determinants in pregnancy vary depending on social factors, individual influences, and vaccine-specific issues.

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Factors such as socioeconomic status, geography, race/ethnicity, language, and culture may contribute as barriers to adherence to inoculation. Pregnant women have poor COVID-19 infection prevention knowledge, attitudes, and practices (Mose et al., 2022). Policymakers, maternal and child health program designers, and other stakeholders should focus on raising pregnant women's understanding of COVID-19 infection prevention strategies. Adherence is a complex problem that is influenced by various circumstances that make it a crucial point for the safe and successful delivery of health promotion activities (Wubedle et al., 2022). Vaccine safety and efficacy guidelines must be communicated to the general public emphasizing the risk of COVID-19 to address individuals' complacency and aid in the government's health promotion activity. People could favor a vaccine that enables rapid mass inoculation.

Despite the difficulties of handling COVID-19 pandemic waves in varied contexts and capacities, the approved vaccines have offered a window of opportunity for more successfully battling the pandemic through herd immunity. On the other hand, the rates of inoculation coverage vary greatly among countries (Hsuan-Hui & Pei-Lin, 2021s). Therefore, it is significant to explore the possible influencing factors of individuals' adherence to COVID-19 inoculation rates among pregnant women to improve COVID-19 vaccination uptake and coverage in the country and other parts of the world. This study was conducted to address the research gap by determining contextual factors, vaccination determinants, and adherence to COVID-19 inoculation among pregnant women in Parañaque City, Philippines. Data collection on what pregnant women consider upon taking or hesitating to receive a COVID-19 vaccine during pregnancy will provide information to guide future vaccine recommendations and contribute to understanding the needs, concerns, and effects on maternal health to promote vaccine acceptance coverage in routine and outbreak settings.

RESEARCH METHODOLOGY

This study utilized quantitative, descriptive-correlational research that examined the relationship between the contextual factors and vaccination determinants to adherence of pregnant women with COVID-19 inoculation in terms of self-efficacy, confidence, convenience, and complacency. The research respondents involved were 245 pregnant women from all age groups, who had sought prenatal consultation at the institution, including mentally healthy women residing in Parañaque City, and were randomly selected for the study. Main setting of this research was at the government hospital in Parañaque City,

There were three separate researcher-made questionnaires used in data gathering given to each respondent. First are contextual factors that described the demographic data of the respondents. It contains seven constructs: age, religion, ethnicity, occupation, educational attainment, gravida, and medical illness. Second is a vaccination determinant that contains three constructs: social factors, individual influences, and vaccine-specific issues. It used the 4-point Likert Scale to measure respondent's response. The instrument was validated by a panel of experts and pilot tested for reliability with 50 pregnant women who were not included as the actual respondents of the study. The results of reliability statistics showed the computed Cronbach's alpha values for Vaccination Determinants: Social Factors (0.7689), Individual Influence (0.8150), Vaccine Specific Issues (0.8330) signifies that the set of statements in the questionnaire was considered valid and reliable. And lastly is adherence to COVID-19 inoculation that contains four constructs: self-efficacy, confidence, convenience, and complacency. It used a 4-point Likert Scale where the result of

reliability statistics among 50 pregnant women who were not included as the final respondents of the study showed that the set of statements in the questionnaire was considered valid and reliable with the computed Cronbach's alpha value of Adherence to COVID-19 Inoculation of Self-efficacy (0.8519), confidence (0.8786), convenience (0.7665), and complacency (0.7836). In assessing the level of adherence to COVID-19 inoculation in the study.

The researcher obtained permission from Misamis University's Dean, Ethics Committee, Chief Nurse, Hospital Administrator, and Director to conduct a study on pregnant women. They consulted with the OB-OPD department and obtained consent from respondents, ensuring confidentiality and anonymity. The researcher respected the decision of the pregnant women to participate. The study ensured the protection of the privacy of respondents, the confidentiality of the research data, and the anonymity of individuals participating in the research. Moreover, the researcher also assured that the results would not be used for a purpose other than the study. Data gathered shall be stored until the study is finished or until published. Fairness and just treatment to those involved in this research were upheld.

Table 1: Contextual Factors in Adhering to COVID-19 Inoculation (n=245)

Contextual Factors	Frequency	Percentage
<u>Age</u>		
Below 20 years old	29	11.84
20 years old – 30 years old	148	60.41
31 years old – 40 years old	60	24.49
Above 40 years old	8	3.27
<u>Religion</u>		
Roman Catholics	210	85.71
Other Religion	35	14.29
<u>Ethnicity</u>		
Tagalog	174	71.02
Cebuano	14	5.71
Bicolano	10	4.08
Ilocano	9	3.67
Kapampangan	4	1.63
Muslim	7	2.86
Others	27	11.02
<u>Occupation</u>		
None	169	68.98
Teacher	6	2.45
Saleslady	8	3.27
Self-Employed	16	6.53
Health Worker	4	1.63
BPO/Call Center	9	3.67
Office Employee	23	9.39
Food Industry	10	4.08
<u>Educational Attainment</u>		
Elementary	8	3.27
Secondary	122	49.80
College Level	62	25.31
College Graduate	53	21.63
<u>Gravida</u>		
Gravida 1	107	43.67
Gravida 2-3	96	39.18
Gravida 4 and above	42	17.14
<u>Medical Illness</u>		
With Diagnosed Medical Illness	32	13.06
Without Medical Illness	213	86.94

Frequency and Percentage were used to analyze the contextual factors in terms of age, religion, ethnicity, occupation, educational attainment, gravida, and medical illness. Mean and Standard Deviation were used to analyze vaccination determinants and adherence to COVID-19 inoculation. Analysis

of Variance test was used to determine the significant difference in the respondents' adherence to COVID-19 inoculation when grouped according to contextual factors. Pearson Product-Moment Correlation Coefficient was used to determine the significant relationship between vaccination determinants and adherence to COVID-19 inoculation. Regression Analysis was used to determine the predictors of adherence to COVID-19 inoculation.

RESULT

Contextual Factors in Adhering to COVID-19 Inoculation

Table 1 shows the frequency and percentage of the respondents' age, religion, ethnicity, occupation, educational attainment, gravida/number of pregnancies, and medical illness.

Vaccination Determinants in Adhering to COVID-19 Inoculation

Table 2 shows the vaccination determinants in adhering to COVID-19 inoculation among pregnant women in terms of social factors, individual influences, and vaccine-specific issues. Based on the table, the different factors highly determined the respondent's adherence to COVID-19 inoculation (WM=3.06; SD=0.342).

Table 2: Vaccination Determinants in Adhering to COVID-19 Inoculation (n = 245)

Vaccination Determinants	WM	SD	I
Social Factors	3.45	0.4118	Very
Individual Influences	2.92	0.6193	High
Vaccine Specific Issues	2.81	0.5512	High
Overall Weighted Mean	3.06	0.342	High

Legend: 3.26 - 4.0: Very High, 2.51 - 3.25 : High, 1.76 - 2.50 : Fair, 1.00 -1.75: Poor

Level of the Respondents 'Adherence to COVID-19 Inoculations:

Table 3: Level of the Respondents' Adherence to COVID-19 Inoculation (n = 245)

Vaccination Determinants	WM	SD	I
Self-Efficacy	3.59	0.3758	Very High
Confidence	3.5	0.4624	Very High
Convenience	3.39	0.3955	Very High
Complacency	2.92	0.4918	High
Overall Weighted Mean	3.37	0.309	Very High

Legend: 3.26 - 4.0: Very High, 2.51 - 3.25 : High, 1.76 - 2.50 : Moderate, 1.00 -1.75: Low

Table 3 shows the level of the respondent's adherence to COVID-19 inoculation. In terms of self-efficacy, confidence, convenience, and complacency, the table reveals that the respondents had a very high adherence to COVID-19 inoculation (WM=3.37; SD=0.309). This indicates that most of the respondents had their COVID-19 vaccine and complied with the health promotion activity of the government.

Significant Difference on the Respondents' Adherence to COVID-19 Inoculations when Grouped According to Contextual Factors

Table 4 shows the significant difference in the respondents' adherence to COVID-19 inoculations when grouped into contextual factors.

Table 4: Significant Difference in the Respondents' Adherence to COVID-19 Inoculations When Grouped According to Contextual Factors

Variables	Test Statistics		Remarks
	f-value	p-value	
<u>Adherence to COVID-19 and:</u>			
Age	0.27	0.849	Do Not Reject Null Hypothesis
Religion	0.00	0.972	Do Not Reject Null Hypothesis
Ethnicity	0.65	0.689	Do Not Reject Null Hypothesis
Occupation	0.79	0.598	Do Not Reject Null Hypothesis
Educational Attainment	0.38	0.765	Do Not Reject Null Hypothesis
Gravida	0.731	0.731	Do Not Reject Null Hypothesis
Medical Illness	4.12	0.043*	Reject Null Hypothesis

Ho1: There is no significant difference on the respondents' adherence to COVID-19 inoculation when grouped into contextual factors.

Legend: 0.00-0.01** Highly Significant; 0.02-0.05* Significant; above 0.05 Not Significant

Significant Relationship between the Vaccination Determinants and Adherence to COVID-19 Inoculation among Pregnant Women

Table 5 shows the significant relationship between the vaccination determinants as to social factors, individual influences, vaccine-specific issues, and adherence to COVID-19 inoculation in terms of self-efficacy, confidence, convenience, and complacency.

Table 5: Significant Relationship between the Vaccination Determinants and Adherence to COVID-19 Inoculations

Variables	Test Statistics		Remarks
	r-value	p-value	
<u>Social Factors and:</u>			
Self-Efficacy	0.425	0.00**	Reject Null Hypothesis
Confidence	0.423	0.00**	Reject Null Hypothesis
Convenience	0.468	0.00**	Reject Null Hypothesis
Complacency	0.317	0.00**	Reject Null Hypothesis
<u>Individual Influences and:</u>			
Self-Efficacy	0.046	0.478	Do Not Reject Null Hypothesis
Confidence	0.064	0.317	Do Not Reject Null Hypothesis
Convenience	0.160	0.01**	Reject Null Hypothesis
Complacency	0.151	0.01**	Reject Null Hypothesis
<u>Vaccine Specific Issues and:</u>			
Self-Efficacy	-0.003	0.966	Do Not Reject Null Hypothesis
Confidence	-0.051	0.427	Do Not Reject Null Hypothesis
Convenience	0.117	0.067	Do Not Reject Null Hypothesis
Complacency	0.266	0.00**	Reject Null Hypothesis

Ho2: There is no significant relationship between the vaccination determinants and adherence to COVID-19 inoculation among pregnant women.

Legend: 0.00-0.01** Highly Significant; 0.02-0.05* Significant; above 0.05 Not Significant

Predictor of the Adherence to COVID-19 Inoculation

In Table 6, the study reveals that 68.64 percent of the contextual factors predict adherence to COVID-19 inoculation, or only 31.36 percent of the contextual factors predicted adherence to COVID-19 inoculation.

Table 6: Predictors in the Adherence to COVID-19 Inoculation

Term	Coef	SE Coef	T-Value	P-Value
Illness	0.1188	0.0585	2.03	0.043
R-sq: 31.36%				
Regression Equation: BB = 3.147 + 0.1188 illness				
Social Factors	0.4225	0.0401	10.54	0.00
R-sq: 31.36%				
Regression Equation: BB = 1.956 + 0.4225 A1				

H03: Contextual factors and vaccination determinants are not predictors of pregnant women's adherence to COVID-19 inoculation.

DISCUSSION

Contextual Factors in Adhering to COVID-19 Inoculation. The study reveals that the majority of respondents in the Philippines are young adult women aged 20-30, with a higher likelihood of taking the COVID-19 vaccine. The age range is more amenable to coronavirus immunization (AlShurman et al., 2021). This age group is more capable of following the latest news on social media and using advanced technology compared to older adults. Religion plays a significant role in shaping an individual's perception of health and health needs, particularly among religious groups like Roman Catholics. However, Chander et al. (2020) found that religion did not influence attitudes and recommendations around maternal vaccination. Ethnicity is another significant factor in vaccine hesitation, with most respondents being Tagalog (71.02%).

The study also found that 68.98% of respondents were housewives and had no occupation, while the majorities were office employees, self-employed, food industry workers, BPO/call center workers, sales ladies, professional teachers, and health workers. The medical field was the occupation with the greatest anticipated vaccination uptake, followed by the academe, students, and public sector workers. This may be a fact that being in the medical field becomes an advantage to have access to know more about the vaccine and more trust, especially having co-workers encouraging one another to have the vaccine. In addition, a low proportion of intention to take a vaccination was linked to low income, unemployment, or retirement, residing in rural areas, being married, and having children (AlShurman et al., 2021). This could probably be due to the thought that COVID-19 vaccines are expensive and only required for working people.

Educational attainment with 49.80% of respondents in the secondary level of education, 62 respondents attending college, 53 graduated from college, 8 respondents at the elementary level. According to Mills et al. (2020) and Razai et al. (2021), uneducated and uninformed individuals are more likely to be misled about vaccination, which is a significant predictor of COVID-19 inoculation reluctance. The relationship between educational levels and vaccine hesitancy has yielded conflicting results, with many studies findings that hesitancy decreases with higher levels of education. 43.67% are currently having their first

pregnancy, 39.18% are in their second and third pregnancy, and 17.14% have more than four pregnancies. Pregnancy makes pregnant women more cautious about their diet, drinks, and medication intake. As vaccines protect both the mother and child from infectious diseases, vaccine inoculation is strongly advised. Pregnant women may experience anxiety (Pramono et al., 2020) due to not having enough knowledge of the vaccine's effectiveness and its effect on pregnancy.

Medical illnesses during pregnancy can also influence a woman's decision to have the vaccine. Pregnant women with comorbid conditions like hypertension, diabetes, and obesity may have a higher risk of developing serious illnesses due to the pandemic. Women from regions with fewer resources for emergency care are at a much greater risk of maternal morbidity and mortality. Being pregnant alone makes a woman vulnerable to illnesses, and having a medical illness condition may increase her anxiety and fear of having the vaccine.

Vaccination Determinants in Adhering to COVID-19 Inoculation. The study reveals that various factors significantly influence a pregnant woman's adherence to the COVID-19 vaccine (WM=3.06; SD=0.342). Internal and external factors, such as knowledge and experiences, social factors, individual influences, and vaccine-specific issues, also play a role in this decision. Social factors include political and religious leaders, family, friends, peers, and healthcare personnel, while individual influences include their understanding of COVID-19 infection prevention, experiences with other vaccine inoculations, and concerns about vaccine safety and efficacy.

Pregnant women's decisions regarding the vaccine are influenced by their own health and lifestyle, including activities, food, social interactions, and healthcare use (Kazemi et al., 2016). If the vaccine benefits both the mother and the unborn child, there is an increase in adherence to the inoculation. Pregnant women are among the most vulnerable populations, requiring extra precautions against the pandemic due to the high risk of vertical transmission (Mirzadeh & Khedmat, 2022). However, there is no sufficient evidence from clinical studies to completely implement a vaccination program (Dashraath et al., 2020) during pregnancy due to the novelty of COVID-19. Despite the lack of clinical studies, pregnant women have shown strong belief in the safety of the COVID-19 vaccine platform, leading to the decision to offer it to them. Concerns regarding vaccine efficacy and safety are inevitable among pregnant women, as they are among the most vulnerable populations and require extra precautions against the pandemic.

Level of the Respondents' Adherence to COVID-19 Inoculations. The study reveals that self-efficacy contributed to high adherence to COVID-19 inoculation (WM=3.59; SD=0.3758). This finding suggests that the study's respondents strongly perceived what was best for their health and their unborn child. Pregnant women with high self-efficacy are more likely to be willing to get vaccinated (Guidry et al., 2021), as they recognize the need to be inoculated and are more at risk than those not pregnant. Confidence is another factor that very highly influences adherence to COVID-19 inoculation (WM=3.56; SD=0.4624). This reveals that the respondents had high confidence in the government's healthcare system and inoculation program, as well as trust in healthcare workers providing information and health teachings on COVID-19 inoculation importance and benefits. External factors, such as trust between the government and health professionals, may also influence adherence.

The study reveals that the respondents had very high adherence to COVID-19 inoculation as to convenience (WM=3.39; SD=0.3955). This finding means that COVID-19 vaccines were accessible and available to the respondents and the inoculation process was fast and efficient with competent and

accommodating healthcare professionals. Thus, supporting what Razai et al. (2021) emphasized, the critical importance of well-thought-out and practical vaccination delivery, emphasizing the value of an accessible location, and considering the cost of vaccination contribute to the increase in the convenience level of the respondents.

Complacency is another factor that influences adherence to COVID-19 inoculation (WM=2.92; SD=0.4918). The respondents could recognize the risk of COVID-19 infection and the risk of not having the vaccine. Recognizing one's susceptibility to infection contributes to lessening complacent behavior and acting accordingly to improve their health for themselves and their unborn child. Complacency can be positively interpreted as the high level of adherence determines their recognition of their risk and need for inoculation. Information about the efficacy of vaccinations and its benefits can influence the decision to accept or reject the vaccine.

Significant Difference on the Respondents' Adherence to COVID-19 Inoculations when Grouped According to Contextual Factors. There was no significant difference in adherence to COVID-19 inoculation based on age, religion, ethnicity, occupation, or educational attainment. This could be due to the respondents' adaptability to the new environment and social norms, as well as the free distribution of the vaccine by the government. Educational attainment did not make a significant difference in adherence to COVID-19 inoculation, as the vaccine was made available to all. Gravida or number of pregnancies did not significantly influence adherence to the vaccine, as the respondents' understanding of the need for the vaccine remained the same. This may be due to the belief that the safety and health of their unborn child is more important than other factors.

However, the presence of an illness did influence adherence to the vaccine. The study by Wadman (2020) indicated that women's bodies are already strained during pregnancy, making them more prone to severe COVID-19. Medical conditions aside from being pregnant could determine a different outcome, as pregnant women weigh the consequences of their actions. Therefore, having no medical illness or co-morbidity supported the data of this study, which revealed a very high adherence to COVID-19 inoculation. The study found that adherence to COVID-19 inoculation was not significantly influenced by age, religion, ethnicity, occupation, education, gravida. However, the findings suggest that these factors can be challenging to control and modify, potentially benefiting healthcare providers.

Significant Relationship between the Vaccination Determinants and Adherence to COVID-19 Inoculation among Pregnant Women. The study found that most vaccine determinants and adherence to COVID-19 inoculation showed no significant relationship, indicating the null hypothesis. However, social factors significantly influenced pregnant women's adherence to COVID-19 inoculation, such as self-efficacy, confidence, convenience, and complacency. Mass media, influential leaders, health providers, organizations, and the healthcare system were found to have a significant impact on adherence. Self-efficacy acts as a buffer between vaccine hesitancy and other factors, such as perceived barriers and advantages (Chen et al., 2021; Guidry et al., 2021). Health professionals may also discuss their experiences and promote vaccination, which can increase confidence in vaccine effectiveness.

Negative information about the vaccine and disease was also found to be a significant factor, with some respondents agreeing with this. However, according to Cagayan et al. (2022), misinformation can be dealt with through facts and shared personal experiences from family, friends, and community members. To enhance adherence, healthcare providers and communicators should be transparent with facts about the vaccine's efficacy, adverse effects, and mitigating interventions.

Individual influences and adherence to COVID-19 inoculation were found to be highly significant, with individuals' perceptions regarding the threat and severity of the disease or pandemic influencing adherence. Differences in knowledge and awareness regarding COVID-19 severity and accessibility to healthcare could explain the relationship. Vaccine-specific issues had no significant relationship with self-efficacy, confidence, and convenience but were highly significant with complacency. The positive attitude toward COVID-19 inoculation and the perceived risk of the pandemic explain high adherence among pregnant women. Their trust in healthcare professionals and the country's healthcare system increases their self-efficacy and confidence, leading to a positive outcome of complacency.

Predictor of the Adherence to COVID-19 Inoculation. The study found that only illness and social factors predicted adherence to COVID-19 inoculation, with only 68.64 percent of contextual factors influencing adherence. This is a positive development for healthcare professionals, as demographics are difficult to control and modify. Medical illnesses significantly impacted pregnant women's adherence, but proper communication about vaccine safety and efficacy is crucial for public confidence and compliance (Banik et al., 2021).

On the other hand, 68.64 percent of other variables predicted adherence, and only 31.36 percent of social factors predicted adherence. Individual influences and vaccine-specific issues were high determinants of adherence, but only had a significant relationship with convenience and complacency. Social factors had a significant relationship with all four constructs of adherence. Using social media platforms to support inoculation campaigns can be time- and money-efficient, as external stimuli influence an individual's perception and knowledge. Health professionals should evaluate patients' behavior for adaptability and encourage positive adaptation. Overall, illness and social factors were the only factors predicting adherence to COVID-19 inoculation.

CONCLUSION

Although most of the respondents were young, no occupation and has no higher level of education, their level of adherence is high. It is for a fact that most of them already had their primary dose of vaccine. The respondents' adherence to the COVID-19 inoculation in this set of respondents was uninfluenced by contextual factors. The presence of medical illness influences the pregnant woman's adherence to COVID-19 inoculation. Motivation from the community and health sector is essential for successful inoculation and other health promotion activities for pregnant women. Pregnant women can change their attitudes toward COVID-19 inoculation if they have more knowledge of the risk and trust in the health promotion program. Therefore, healthcare workers, and policymakers should focus on those concerns to halt vaccine hesitancy or refusal and implement intensive interventions because there is a possibility to change their attitudes if they have more knowledge and gain more trust in the implementers of the health promotion program.

The social community with healthcare practitioners must communicate effectively about the safety and effectiveness of the COVID-19 vaccines to increase trust and adherence among pregnant women, regardless of medical conditions or illness. Risk communication is essential to strengthen the adherence of pregnant women with the inoculation program of the government. Even if each of them has different inoculation experiences and knowledge, the push given by the community and health sector plays a vital role in the success of the inoculation activity as well as other health promotion activities designed for the pregnant women in routine and outbreak setting.

RECOMMENDATION

Based on the findings of this study, nursing students and/or professional nurse researchers may conduct further research to support the findings of this study. More quantitative or qualitative research studies exploring COVID-19 inoculation adherence to investigate more empirical findings on health promotion activities for pregnant women in different settings or in a particular contextual factor. Community health nurses and healthcare workers may provide an in-depth communication and health education discussion focusing on the risk and benefits of the COVID-19 vaccine. This can be personalized and may be widely implemented starting within the pregnant woman's community. This is to further understand their personal views on the country's inoculation program.

Nursing students and/or professional nurse researchers may conduct a future qualitative study involving pregnant women's husbands/partners and their family's perspectives on whether to participate in the government's health promotion activity. Healthcare workers may improve the conduct of prenatal lectures or health teachings involving pregnant women's community. The implementation may be initiated in their community and be reiterated among hospitals, both government and private facilities. Since most pregnant women seek consultation initially in the healthcare facility within their community.

Healthcare workers, health-related agencies and policymakers may develop a program focused on a health condition or medical illness concerns of pregnant women in relation to vaccine inoculation to halt vaccine hesitancy or refusal and implement intensive interventions to address identified concerns. And lastly, they may continue the dissemination of COVID-19 inoculation facts and possible social publication of personal testaments, most probably from social influencers or their relatives who had the vaccine may strengthen the social influence to push pregnant women to have the vaccine applicable in both pandemic and non-pandemic setting.

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Conflict of Interest

The authors declare that they have no competing interests.

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