Motivation for Pregnant Women to Get Covid-19 Vaccination

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ABSTRACT

Introduction: In Indonesia, the uptake of COVID-19 vaccines has emerged as a divisive topic, sparking debate and controversy among the population. Despite government efforts to promote vaccination, the acceptance rate remains low in certain regions. For instance, in Central Java, only approximately 60% of pregnant women have been vaccinated against COVID-19, well below the national target of 80%. This lack of acceptance is largely due to misinformation, fear, and the lack of knowledge within the community, exacerbated by insufficient government oversight in vaccination campaigns. As a result, pregnant women have displayed varying levels of hesitancy and concern, which influences their response to the COVID-19 vaccine **Methods:** This type of study quantitativeand involved pregnant woman conducted across Central Java. A total of participants is 1084 person and duration two year in 2022-2024th. Data were collected through primarry and secondary data. Data analysis using multiple linear regression and R-Square test. Ethical approval was obtained from research and community service STIKES Serulingmas instituation and participants provided Informed consent. **Results:** The motivation of pregnant women has a positive and significant direct effect on the interest in vaccination with $\rho v = 0.000 < 0.05$, meaning that the better the mother's motivation. The coefficient value of 78.3% has an effect on interest in vaccination against Covid-19. **Conclusion:** Motivation of pregnant women influences interest in vaccination. The extent of societal unease and skepticism leading to misconceptions about COVID-19 immunization.

INTRODUCTION

Coronavirus called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) emerged, sparking a worldwide outbreak of the illness now referred to as COVID-19. This highly contagious virus mainly impacts the respiratory system, potentially causing an unusual form of pneumonia in serious cases. SARS-CoV-2 is notable for its quick human-to-human transmission, which enabled its rapid spread across the globe. The virus gains entry to host cells via the ACE2 receptor, inducing a spectrum of symptoms ranging from mild, flu-like conditions to acute respiratory difficulties. As the outbreak evolved, scientists and medical experts worked relentlessly to comprehend the virus's mechanisms, create diagnostic methods, and develop effective therapies and immunizations to curb its proliferation and lessen its influence on worldwide public health (Kim et al., 2020). The virus's extensive morbidity and

mortality have accelerated efforts to discover effective treatments and preventive strategies. As safe and efficacious vaccines have been developed, nations across the globe now confront the significant challenge of ensuring fair distribution and widespread accessibility. This endeavor necessitates meticulous planning and coordination to surmount logistical obstacles, tackle vaccine hesitancy, and give precedence to at-risk populations. The successful execution of immunization campaigns is vital for curbing viral transmission, decreasing death rates, and progressively restoring normalcy to communities and economies worldwide. As countries navigate this intricate process, global collaboration and the sharing of resources will be instrumental in achieving worldwide immunity and alleviating the enduring consequences of the pandemic (Makmun & Hazhiyah, 2020).

Indonesia has been heavily affected by the COVID-19 outbreak, with the national task force documenting 1,713,684 confirmed cases by 2021. This total comprised 98,395 (5.7%) active cases, 1,568,277 (91.5%) recoveries, and 47,012 (2.7%) deaths. Expectant mothers have been especially susceptible to the virus, experiencing increased chances of severe illness and death. By 2021, COVID-19-related complications had reportedly claimed the lives of over 1,000 pregnant women in Indonesia. In response to the crisis, the government launched a vaccination program, with 13,340,957 Indonesians receiving their initial dose and 8,634,546 completing both doses. At first, pregnant women were not included in the initial vaccination phase due to safety worries. The subsequent phase began incorporating pregnant women with high-risk conditions or those working in healthcare, following specific guidelines from the Ministry of Health. Nevertheless, vaccination rates among pregnant women remained suboptimal, with data from the Indonesian Ministry of Health showing that less than 20% of pregnant women had been vaccinated by the end of 2021, considerably lower than the general population (World Health Organization Dashboard, 2022).

The COVID-19 pandemic has introduced distinct obstacles for expectant women, nursing mothers, and children in making vaccination choices. This reluctance and postponement can be linked to worries about vaccine efficacy, false information, and insufficient clinical studies involving pregnant individuals. The swift creation and emergency approval of COVID-19 vaccines have sparked inquiries about their safety for specific groups, including pregnant women, lactating mothers, and children. These apprehensions have been intensified by the proliferation of inaccurate information via social media and other platforms, fostering an atmosphere of doubt and mistrust. Moreover, the minimal inclusion of pregnant women in initial vaccine studies has led to a dearth of data specific to this demographic, further contributing to hesitancy. Consequently, medical professionals and public health authorities face the task of addressing these concerns while underscoring the significance of immunization in safeguarding both mothers and their unborn children from the potentially grave outcomes of COVID-19 infection (Skjefte et al., 2021).

The development of effective COVID-19 vaccines by multiple research teams represents a major scientific breakthrough in response to a worldwide health emergency. Yet, the creation of vaccines alone is not sufficient to effectively tackle the pandemic, considering the enormous population that needs to be immunized to establish widespread protection and community immunity (Galanis et al., 2023). The task of large-scale vaccination is made more difficult by growing vaccine skepticism, which has been partially driven by the spread of conspiracy theories. These baseless claims have been associated with an uptick in vaccine hesitancy globally, potentially jeopardizing public health initiatives aimed at controlling the virus's transmission (M et

al., 2020). As a result, addressing misinformation and building public trust in vaccination programs has become a crucial component of the overall strategy to combat COVID-19, working alongside ongoing research efforts and vaccine distribution initiatives (Ariani & Putri, 2016). Combating vaccine hesitancy and encouraging widespread immunization requires a comprehensive approach from governments, health experts, and advocacy groups. These initiatives should aim to address concerns, counter misinformation, and improve public understanding of vaccine safety and effectiveness. Transparent and clear communication is crucial to counteract the impact skeptics and anti-vaccine groups who have initiated campaigns in various nations to undermine vaccination efforts. Public health programs should emphasize scientific evidence supporting vaccines, offer easily accessible information about their development and testing, and stress the societal advantages of extensive immunization. Moreover, customizing messages for specific communities and engaging trusted local figures can help build trust and overcome cultural or religious obstacles to vaccination. By integrating education, community outreach, and focused communication tactics, stakeholders can work to increase vaccine acceptance and safeguard public health (Lushington, 2022).

It remains safe to administer vaccines to mothers who are nursing, as the advantages of breastfeeding outweigh the potential risk of COVID-19 transmission and can substantially reduce infant mortality rates. Mothers who breastfeed are recognized for possessing antibodies that provide both biological and clinical protection for their infants (CDC, 2021; Lechosa-Muñiz et al., 2021; Low et al., 2022; Oluklu et al., 2021). Research indicates that breast milk does not contain the COVID-19 virus, and infants have a low risk of contracting the illness. As a result, mothers who have tested positive for COVID-19 are permitted to continue breastfeeding, provided they maintain a healthy lifestyle (Low et al., 2022;Blaszczyk, 2022; Jakuszko et al., 2021). The rapid development of vaccines has heightened public concern and could lead to reduced acceptance. Both the general population and governmental bodies should evaluate the current level of backing for the COVID-19 vaccine and examine how vaccine hesitancy relates to its overall acceptability (Di Gennaro et al., 2020). Therefore, the goal of this research is to perform a literature analysis.

Protecting expectant mothers from COVID-19 through immunization has become a crucial focus in public health efforts. Although pregnant individuals were not included in initial vaccine trials, subsequent research and real-world evidence have confirmed the safety and effectiveness of COVID-19 vaccines during pregnancy. Based on these findings, leading health authorities such as the WHO and CDC now advocate for pregnant women to receive the vaccine. This recommendation stems from data indicating that pregnant women face a higher risk of severe COVID-19 complications compared to their non-pregnant counterparts of similar age. Furthermore, maternal vaccination can transfer antibodies to the fetus, potentially safeguarding newborns. However, despite these advantages, vaccination rates among pregnant women remain suboptimal in numerous regions. This underscores the necessity for focused educational initiatives and outreach programs to address concerns and boost vaccine acceptance within this susceptible group (Low et al., 2022;Oluklu et al., 2021).

The objective of this study is to analyze the factors influencing the interest of pregnant women in Central Java toward COVID-19 vaccination. Specifically, this research aims to identify the impact of motivation among pregnant women on their interest in receiving the COVID-19 vaccine. The study also aims to explore the relationship between public anxiety and doubt with misconceptions regarding COVID-19 vaccination, and assess how these factors influence vaccination decisions among

pregnant women.

METHODS

The The research methodology uses a quantitative approach, as this study aims to obtain answers to questions about people's perspectives on a subject or issue to produce data analysis results. The research population consists of all pregnant women in the Central Java region, with the study period spanning from 2022 to 2024. The sampling technique used is purposive sampling, with a total sample of 1,084 respondents. The inclusion criteria are all pregnant women who received the COVID-19 vaccine, while the exclusion criteria are pregnant women who received the COVID-19 vaccine but were unwilling to participate as respondents and did not complete the questionnaire. Data collection consists of both primary and secondary data. Primary data were collected using a questionnaire distributed through Google Forms. Data collection was carried out by the research team. Ethical approval was obtained from the Research and Community Service Board of LP2M, and participants provided informed consent in accordance with ethical principles, including obtaining consent from the respondents. All respondent data confidentiality was maintained, and data were not disclosed to protect participants' rights. Secondary data were sourced from scientific journals, books, and statistical data. In this study, maternal motivation is the independent variable, and COVID-19 vaccination is the dependent variable. Each of the 11 questionnaire items was used to measure the research findings, using a Likert scale. The validity of the questionnaire was tested using Pearson's product-moment correlation, with r-values greater than 0.30. The reliability test results using Cronbach's Alpha showed that maternal motivation and interest in vaccination had values of 0.785 and 0.778, respectively, indicating reliability. The data analysis technique employed was multiple linear regression, using the SPSS 25.0 software tool. Linear regression was applied because this study used a single independent variable, namely maternal motivation, to determine its influence on the dependent variable, which is the interest in receiving the COVID-19 vaccine.

RESULTS

This study involved all pregnant women in Central Java, Indonesia, from 2023 to 2024, with a total of 1,047 registered respondents, and 1,084 respondents met the inclusion criteria established for the research. The demographic profile of the research population includes [highlight key demographic details]. Random respondent selection was performed on those who completed the questionnaire during the specified period. The study results showed that all 1,084 pregnant women received the COVID-19 vaccination. Below are the results of the respondent distribution by age and last educational attainment.

Table 1. Respondent Distribution

Variables	Frequency (n)	Percentage (%)
Age		
<20 years old	125	11.5
25 - 35 years old	789	72.8
> 35 years old	170	15.7
Education		
High School	504	46.49
Diploma	14	1.29
Bachelor's Degree	310	28.60
Master's Degree	256	23.62

Table 1 shows that the majority of respondents were between the ages of 25 to 35 years (789 people, 72.8%), respondents older than 35 years old (170 people, 15.7%), those aged under 20 years old (125 people, 11.5%). In terms of educational background, most respondents had completed high school (504 people, 46.49%), followed by those with a bachelor's degree (310 people, 28.60%), a master's degree (256 people, 23.62%), and those with a diploma (14 people, 1.29%). To determine if the data were normally distributed, a normality test was conducted, with the results shown below :

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			1084
Normal Parameters[a,b]	Mean		0.00
	Std. Deviation		2.77
Most Extreme Differences	Absolute		0.027
	Positive		0.027
	Negative		-0.026
Test Statistic			0.027
Asymp. Sig. (2-tailed)			**.057[c]**
Monte Carlo Sig. (2-tailed)	Sig.		**.386[d]**
	95% Confidence Interval	Lower Bound	**0.358**
		Upper Bound	**0.415**

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Based on 1100 sampled tables with starting seed 299883525.

Table 2 reveals that the normality test conducted using the Kolmogorov-Smirnov method yielded a Sig. value of 0.057, and the Monte Carlo test result was 0.386, which is greater than the α-value of 0.05. Additionally, the calculated KS value (1.35 / √1084 = 0.041) was smaller than the table KS value. Thus, the Kolmogorov-Smirnov normality test showed that the data met the normality requirement, with a Sig. value greater than α = 0.05, indicating that the data had a normal distribution. Next, to test whether the variance of residuals from one observation to another was equal, a heteroscedasticity test was performed using a scatter plot, with the results as follows:
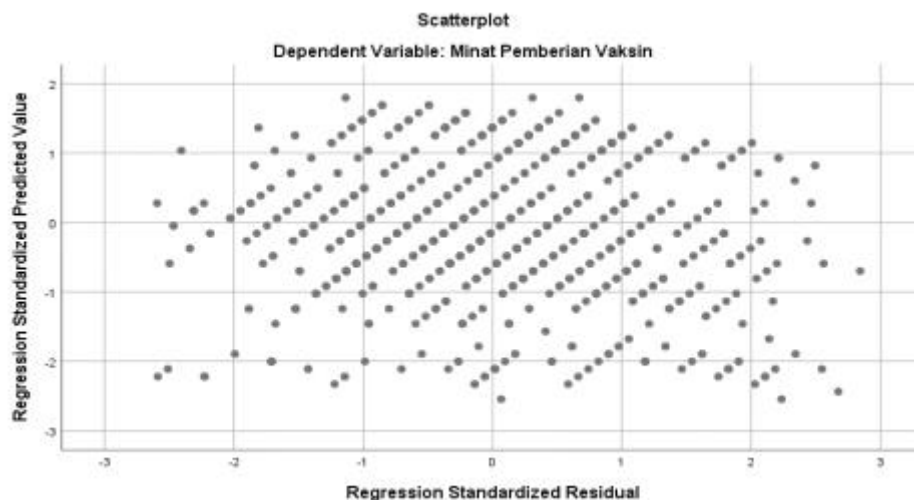

Figure 1. Heteroscedasticity Test Results

Based on Figure 1, no clear pattern can be observed, with the points scattered above and below zero on the Y-axis. The points are randomly distributed, and no specific pattern is formed, indicating that the data tested is free from heteroscedasticity. To measure the degree of association or linear relationship between independent variables, multicollinearity testing was performed using the Variance Inflation Factor (VIF), with the following results:

Table 3. Multicollinearity Test Results

Coefficients[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1 (Constant)	8.983	0.317		28.353	0.000		
Maternal Motivation	0.783	0.009	0.934	85.727	0.000	1.000	1.000

a. Dependent Variable: Interest in Receiving the COVID-19 Vaccine

Based on Table 3, the VIF values for each variable are less than 10. Therefore, it can be concluded that no multicollinearity exists in the tested data. The data analysis technique used in this study was linear regression analysis, which was employed to determine the influence of maternal motivation on the interest in receiving the COVID-19 vaccine.

Table 4. Multiple Linear Regression Results for Interest in Receiving the Vaccine

Coefficients[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Explanation |
	B	Std. Error	Beta			
1 (Constant)	8.983	0.317		28.353	0.000	
Maternal Motivation	0.783	0.009	0.934	85.727	0.000	**Significant Positive Impact**

b. Dependent Variable: Interest in Receiving the COVID-19 Vaccine

Source: Analysis Data (2024)

Table 4 shows that the relationship between maternal motivation and interest in receiving the vaccine is significant, with a t-value of 85.727 (t-value > t-table) and a Sig. value of 0.000, which is less than 0.05. The coefficient is positive at 0.783, indicating that the relationship between maternal motivation (X) and interest in receiving the vaccine is positive by 78.3%. Therefore, it can be concluded that maternal motivation significantly influences the interest in receiving the COVID-19 vaccine.

DISCUSSION

Interpretation of Key Findings

The study involving 1,084 pregnant women reveals that aspects such as

knowledge, attitude, perception, stress, anxiety, social support, motivation, and access to healthcare services have a positive influence on pregnant women's interest in receiving the COVID-19 vaccine. This aligns with the view that individuals are driven, either consciously or unconsciously, to act in ways that seek to fulfill their needs and achieve their life goals (Coe et al., 2022). The findings of this study show that 100% of participants demonstrated strong motivation (1,084 respondents), indicating a high willingness among pregnant women to receive the COVID-19 vaccine as a form of disease prevention. This is consistent with the theory of needs, which posits that motivation is based on the idea that people seek to meet their physiological and psychological needs in life (Soares et al., 2021). The group of vaccine recipients felt they had received sufficient information about the COVID-19 vaccination, with media being their primary source of information. Public information outlets are crucial for informing the population about the value of immunization. According to research suggesting that physiological and psychological deficiencies driving behavior are considered needs, various factors can influence pregnant women's motivation (Moore et al., 2022). These include their personal aspirations, expectations, and preferences, as well as support from family members, friends, and neighbors. Additionally, their surrounding environment and exposure to social media can play a role in shaping their motivations (Kowalski et al., 2023).

While media and public information outlets can be valuable sources of information, they may not always provide a complete or balanced perspective on vaccination (Falcone et al., 2022). Relying solely on these sources could lead to misconceptions or incomplete understanding of the risks and benefits. Moreover, social influences and personal desires may not always align with scientific consensus or public health recommendations, potentially leading individuals to make decisions based on emotions rather than factual information (Sule et al., 2023). Healthcare professionals and reputable medical organizations can provide more comprehensive and evidence-based information to complement public sources. Additionally, addressing individual concerns and providing personalized education may be more effective in promoting informed decision-making about immunization during pregnancy (Zavala et al., 2022).

The COVID-19 vaccine has demonstrated a substantial positive influence on pregnancy outcomes and maternal health throughout the pandemic (Bhattacharya et al., 2022). Vaccination has been shown to reduce the risk of severe COVID-19 infection in pregnant individuals, who are considered a high-risk group for complications. Studies have indicated that vaccinated pregnant women have a lower likelihood of hospitalization, intensive care admission, and adverse pregnancy outcomes compared to their unvaccinated counterparts (Santi Laurini et al., 2023). Additionally, research suggests that antibodies generated by the vaccine can be passed to the fetus through the placenta and to newborns through breast milk, potentially offering some protection to infants. Despite initial hesitancy, growing evidence supports the safety and efficacy of COVID-19 vaccines during pregnancy, leading major health organizations to recommend vaccination for pregnant individuals (Ciapponi et al., 2023). This widespread vaccination effort has played a crucial role in safeguarding maternal health and improving overall pregnancy outcomes during the challenging times of the pandemic. While vaccination has shown benefits, some argue that the long-term effects of COVID-19 vaccines on fetal development and pregnancy outcomes remain uncertain due to the relatively short period of observation. Critics contend that the rapid development and emergency authorization of these vaccines may not have allowed for comprehensive studies on their impact during various stages of pregnancy. Some

individuals express concerns about potential unknown risks and prefer to rely on other preventive measures, such as social distancing and mask-wearing, during pregnancy.

Studies have shown that vaccination during pregnancy is safe and effective, providing protection not only for the mother but also potentially for the newborn through passive antibody transfer (Galanis et al., 2022). Pregnant women who contract COVID-19 are at higher risk for severe illness, complications, and adverse pregnancy outcomes, making vaccination particularly important for this population. Research has demonstrated that vaccinated pregnant women have a lower risk of hospitalization and severe disease compared to unvaccinated pregnant women (RCOG, 2022). Additionally, there is growing evidence that antibodies produced in response to vaccination can cross the placenta, potentially offering some protection to the fetus (Worede et al., 2023). While initial vaccine rollouts excluded pregnant women from clinical trials, subsequent studies and real-world data have consistently supported the benefits of vaccination during pregnancy, leading health organizations worldwide to recommend COVID-19 vaccination for pregnant individuals (WHO, 2021).

The administration of COVID-19 vaccines to pregnant women during the pandemic has been a subject of considerable scientific and clinical interest. Initially, pregnant individuals were not included in early clinical trials, resulting in a paucity of data regarding vaccine safety and efficacy in this population. However, as the pandemic progressed, healthcare organizations and medical experts recognized the elevated risk of severe COVID-19 outcomes in pregnant individuals, necessitating a reassessment of vaccination recommendations (Goncu Ayhan et al., 2021). Subsequent research and observational data have demonstrated the safety and efficacy of COVID-19 vaccines during pregnancy, indicating no increased risk of adverse pregnancy outcomes and potential benefits in terms of antibody transfer to the fetus. Consequently, numerous health authorities, including the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), now advocate for COVID-19 vaccination in pregnant individuals, emphasizing the importance of protecting both the gestational parent and the developing fetus from the potential complications associated with COVID-19 infection (Ma et al., 2022).

According to the findings of Retnowati (2018), pregnant women in the control group were more motivated to follow instructions than those in the experimental group. This study supports Hardiyanti's 2021 statement that, based on the research findings, the statistical analysis of the relationship between gender and the knowledge level of teaching staff yielded values ranging from 0.003 to 0.05. With a p-value of 0.000, Argista and Sitorus (2021) also claimed that knowledge affects public opinion about the COVID-19 vaccination. Nurhasanah (2021) added that there is a relationship between knowledge (p=0.024) and perception (p=0.008) of COVID-19 vaccination and community behavior during the pandemic. From observations and document analysis, it was found that compared to pregnant women in their second and third trimesters, participants in their first trimester were more interested in receiving the COVID-19 vaccine. During the first trimester, depression and anxiety are common symptoms, as indicated by Suzuki and Eto (2017). Their study also presented new findings showing that women in their first trimester of pregnancy during the COVID-19 outbreak may experience more psychological discomfort than in previous years. This provides an explanation for the findings of this study.

The uniqueness of the prospective design and the number of research factors are key strengths of this study. As a result, the COVID-19 vaccine has positive side effects and is recommended for use during pregnancy by health authorities. To our knowledge, this is the first investigation into pregnant women's opinions on the COVID-

19 vaccine. The main barrier to immunization, particularly for newly developed vaccines, is concern about vaccine safety (WHO, 2021). As the tetanus toxoid vaccine has been proven to reduce cases of tetanus infection and has no negative impact on both the mother and the fetus. The sentence structure needs to be processed again so that readers cannot interpret the discussion of the research material (Syamaidzar, 2020).

Hare & Womersley (2021) It was argued that acknowledging gaps in evidence should not be used as a basis for allowing breastfeeding women to receive the COVID-19 vaccine. While women should have autonomy over their bodies, the concept of women's empowerment becomes meaningless if female populations are excluded from research. Despite the ethical complexities of testing new medications on lactating women, it is crucial to prioritize comprehensive research into the safety of vaccines during breastfeeding. Current data suggests that most individuals infected with this disease experience mild to moderate symptoms, and pregnant women do not appear to contract this infection at higher rates than the general population (Galanis et al., 2023). Although the absolute risk of severe COVID-19 is low for pregnant women, pregnancy remains a significant health concern for the disease. Extensive research findings indicate that 8–11% of expectant mothers require treatment for COVID-related complications, while 2-4% necessitate admission to an intensive care unit (Brillo et al., 2021).

Although COVID-19 vaccines have been proven safe and effective in non-pregnant populations, and COVID-19 infection can have severe consequences for pregnant women, there is a lack of published research confirming the safety or efficacy of any COVID-19 vaccine during human pregnancy. To determine whether vaccination is safe (potentially reducing morbidity in both the pregnant woman and fetus) and effective (decreasing adverse pregnancy outcomes or possible harm to mother and/or fetus), a comprehensive analysis of observational studies, clinical case reports, registries, and clinical trials is essential (Garg et al., 2021).

A study by Gray et al., involving 131 individuals of reproductive age who received COVID-19 vaccines (84 pregnant, 31 lactating, and 16 non-pregnant women), revealed that mRNA-based COVID-19 vaccines elicited strong humoral immune responses in pregnant and lactating women. The immunogenicity and reactogenicity observed were comparable to those seen in non-pregnant women. Furthermore, the research indicated that both the placenta and breast milk serve as conduits for transferring protective immunoglobulins to infants (K. J. Gray et al., 2021).

According to the study by Polack et al. (2020), During the study period, no major adverse events were reported for mothers or infants. Following the initial vaccine dose, 47 (55.9%) mothers and 52 (61.9%) newborns experienced mild negative reactions. The most frequently reported side effect was localized discomfort. Throughout the research, four infants developed fevers at 7, 12, 15, and 20 days post-maternal immunization. Three of these cases resolved spontaneously with upper respiratory symptoms such as coughing and congestion. One infant was admitted to the hospital for fever evaluation due to age, receiving antibiotics while awaiting culture results. No other adverse incidents related to the vaccine were noted.

Individuals who refused vaccination showed a higher likelihood of trusting their government (OR = 1.67; 95% CI (1.54, 1.80)). Those with greater faith in their government were more prone to believe in it. Companies backing vaccination initiatives were more likely to receive positive responses compared to those that didn't (OR = 4.35; 95% CI (4.01, 4.72)). This finding, consistent across nations with high and low vaccine uptake rates, suggests employers should promote voluntary acceptance. The study evaluated 13,426 randomly selected individuals from 19 countries/regions

heavily impacted by COVID-19 regarding potential vaccine use. About 48.1% of participants stated they would get vaccinated if recommended by their physician, while 71.5% would if proven safe and effective. However, responses varied among different countries. Given that vaccine decisions can be intricate and changeable, expressing a desire to vaccinate may not always accurately predict acceptance. The lack of universal acceptance of the COVID-19 vaccine remains concerning. Several Asian countries have populations with over 80% trust in their central government (China, South Korea, and Singapore). Middle-income nations like Brazil, India, and South Africa have demonstrated high acceptance levels. Failure to properly identify and address the underlying causes of significant disparities in COVID-19 vaccine willingness may hinder global pandemic containment and subsequent social and economic recovery. The most notable differences between demographic groups are observed at lower income and education levels. Future vaccine distribution strategies should consider subgroups' general health, scientific, and cultural affiliations, as well as their most trusted information sources, rather than simply asserting vaccine safety and efficacy (Lima et al., 2020).

To effectively educate individuals about vaccine safety and acceptance, it's crucial to address their specific concerns and beliefs, including religious or philosophical perspectives (RCOG, 2022). While researchers have identified promising approaches to enhance vaccine trust and reduce skepticism in various settings, implementing these strategies in a large-scale vaccination campaign requires a thorough understanding of current public sentiment, perceived needs, and attention. The support of community leaders will be vital for success. Moreover, a relationship between age and vaccination has been observed. Older adults are more prone to state they will get vaccinated, while those in the 25-54 and 55-64 age groups are more likely to accept vaccine recommendations from others. The results of these studies may represent individuals who were actually employed or commissioned when the research involved non-investigated issues. Although male participants generally show a lower likelihood of getting vaccinated or needing an employer referral compared to female participants, this connection is not significant. Higher-income individuals are more inclined to vaccinate their children than those with lower incomes. This information can be utilized by governments, policymakers, health professionals, and international organizations to improve their targeting efforts. Furthermore, inconsistencies between employer-mandated reports are an additional source of concern (Hooker & Leask, 2020).

Building trust is essential for COVID-19 vaccination, but this can be achieved gradually. Our research indicates that public confidence in the government's vaccine approval process is currently low, which affects adherence to recommended measures. Previous experiences with infectious disease outbreaks and public health crises, such as H1N1, SARS, MERS, and Ebola, have highlighted the importance of providing reliable information and guidance for managing diseases. Addressing vaccination hesitancy requires more than just fostering trust. To tackle this complex challenge effectively, collaboration among global, national, and local governments is necessary (Macartney et al., 2020).

Clear and consistent communication is essential. The credibility of government officials forms the foundation of public trust in the vaccination program. The public will be informed about the vaccine development process, from volunteer recruitment to regulatory approval based on safety and efficacy. An effective campaign should also provide extensive information on vaccine efficacy, protection duration (including multiple doses if necessary), and the importance of community-wide immunization.

Building public confidence in the regulatory process for assessing vaccine safety and efficacy is crucial. COVID-19 mitigation strategies demonstrate that credible and culturally appropriate health communication is vital for promoting positive health behaviors. This involves preparing the public, respected civil society groups, religious and fraternal organizations across all societal sectors, and local communities. Furthermore, the private sector should contribute to mass vaccination efforts through reliable spokespersons, local involvement, accurate information dissemination, and technical assistance (Akarsu et al., 2021).

The resurgence of certain infectious diseases, such as measles and pertussis, demonstrates that vaccine hesitancy is a natural occurrence posing a significant threat to worldwide health (Macartney et al., 2020). The rapid and safe development of a COVID-19 vaccine is unprecedented (Nguyen, 2020). Doubts about the COVID-19 vaccine may impede global efforts to control the current epidemic, which is causing severe health and socioeconomic disruptions. The basic reproductive number of an infectious disease is used to calculate the population immunity needed to halt virus transmission (Zhang, 2022). Current estimates for COVID-19 suggest that 60% to 75% of the population must be vaccinated to restrict virus transmission and spread within communities (Post et al., 2020).

Research linked to surveys examining attitudes towards future COVID-19 vaccines revealed that individuals were open to vaccination, believing it benefited not only themselves and their children but also the health of their community. The second reason for vaccination was the protection it offered against COVID-19. Additional studies explored people's perspectives on the COVID-19 immunization. The findings showed that 8.6% of participants stated they would refuse the COVID-19 vaccine, while 35.9% were uncertain. Furthermore, 14.8% indicated they would not vaccinate their children if a COVID-19 vaccine became available, and 43.2% were undecided on this matter.

The level of education an individual has attained influences their thoughts and opinions regarding the COVID-19 vaccine. Research shows that as people become more educated, they develop a wider range of viewpoints about vaccinating their children (Akarsu et al., 2021). Studies have revealed a diverse array of doubts surrounding the COVID-19 vaccine. In a comparison of vaccine hesitancy, 29% of New York residents indicated they would refuse vaccination, which is higher than the rates in Canada (20%) and the United Kingdom (6%). Respondents expressed concerns about potential adverse reactions to the COVID-19 vaccine. Many parents harbor apprehensions about the newly developed COVID-19 vaccine for themselves and their offspring. Financial factors also play a role in determining an individual's inclination to receive vaccinations. Unemployed individuals are less prone to getting inoculated. Those with private health insurance coverage are more likely to be vaccinated compared to those without. Furthermore, individuals who received the seasonal flu vaccine were more inclined to immunize themselves and their children against COVID-19. While the COVID-19 vaccine presents a promising solution, vaccine hesitancy remains the primary obstacle to a successful immunization campaign (D. P. Gray et al., 2020).

According to the research conducted by Sallam and Mahafzah, surveys on COVID-19 vaccination acceptability have been carried out in 33 different countries. World Meter reports that vaccine hesitancy poses a significant challenge in global health. The ongoing epidemic, which is wreaking havoc on health and economic systems, may be difficult to control due to reservations about the COVID-19 vaccine. The World Health Organization (WHO) has stated that vaccine adoption would facilitate

the organization of necessary actions and measures to increase public awareness and convince people of the vaccine's advantages and safety, ultimately helping to curb the virus's spread and reduce negative impacts. Factors such as cost, efficacy, and duration of protection offered by the vaccine appear to be equally crucial in achieving this goal. However, the current COVID-19 pandemic may be challenging to manage due to reluctance regarding the acceptability of the COVID-19 vaccine. Higher rates of vaccine uptake are observed in regions where citizens have greater trust in their government and confidence in the safety and effectiveness of vaccines (Sallam & Mahafzah, 2021).

Preventative measures form the cornerstone of worldwide efforts to address the pandemic's impact and its health and economic ramifications. Substantial resources have been allocated by scientists and pharmaceutical companies, with government backing, to develop a safe and efficacious SARS-CoV2 vaccine. The World Health Organization reports that, in addition to more than 60 vaccine candidates in clinical trials, several emergency vaccines have received approval, marking a significant milestone in this endeavor. At present, over 170 potential COVID-19 vaccines are in the initial stages of development (Merryn Voysey et al., 2020). A study by Salali and Uysal, utilizing online surveys in the United Kingdom and Turkey, revealed that individuals in both countries were hesitant to receive vaccinations due to uncertainty and their acceptance of the coronavirus's natural origins. Interestingly, their belief in the natural source theory significantly increased the likelihood of their willingness to accept the COVID-19 vaccine (GD & MS, 2020).

The widespread dissemination of false information through various media channels poses a significant threat to public health efforts, particularly concerning vaccine acceptance (Fadda et al., 2020).. Misinformation and conspiracy theories about vaccine safety, efficacy, and necessity can rapidly spread across social media platforms, news outlets, and personal networks, leading to increased vaccine hesitancy among the general population (Rasmussen et al., 2021). This phenomenon, often referred to as an "infodemic," can erode public trust in scientific institutions and healthcare professionals, ultimately undermining vaccination campaigns (Zdanowski et al., 2022). As a result, individuals may become more susceptible to preventable diseases, potentially compromising herd immunity and jeopardizing the overall health of communities.

This research underscores the crucial role of COVID-19 vaccination in protecting pregnant women and their unborn children. Potentially mitigating severe disease, complications, and negative pregnancy outcomes. The findings support global health recommendations and may encourage more pregnant individuals to consider vaccination as a safe and effective preventive measure. By highlighting the potential for passive antibody transfer to the fetus, this study opens avenues for further research into protecting newborns from infectious diseases through maternal immunization.

CONCLUSION

The study involving 1,084 pregnant women demonstrates that factors such as knowledge, attitude, perception, stress, anxiety, social support, motivation, and access to healthcare services have a positive influence on pregnant women's interest in receiving the COVID-19 vaccination. The research findings reveal that 100% of the participants showed strong motivation indicating a high willingness among pregnant women to receive the COVID-19 vaccine as a means of disease prevention. Based on observations and document analysis, it was revealed that women in their first trimester of pregnancy showed greater interest in receiving the COVID-19 vaccine compared to

those in their second and third trimesters. Addressing this challenge requires a multifaceted approach, including improved science communication, media literacy education, and collaborative efforts between health authorities, technology companies, and community leaders to combat the spread of false information and promote evidence-based decision-making regarding vaccination.

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