Research

# Factors Associated with Pregnant Women's Engagement in COVID-19 Vaccination

*Desi Kurnia Putri, Dien Gusta Anggraini Nursal, Yessy Markolinda, Masrizal\**

*Faculty of Public Health, Universitas Andalas, Jl. Perintis Kemerdekaan No.94, Jati, East Padang, Padang City, West Sumatra 25129 Indonesia*

### CORRESPONDING AUTHOR

**Masrizal**

E-mail: masrizal.dtmangguang@gmail.com

### A B S T R A K

**Background:** The Belimbing Community Health Centre in Padang City exhibits a limited level of engagement among pregnant women in the administration of Covid-19 vaccinations.

**Purpose :** The objective of this study was to ascertain the factors associated with the engagement of pregnant women in the Covid-19 vaccine within the operational jurisdiction of the Belimbing Health Centre.

**Methods:** The present study adopts a quantitative approach and employs a cross-sectional study design. The data collection period spans from January to June 2022, and the study is conducted within the operating area of the Belimbing Health Centre. The study sample consists of 93 pregnant women. The method employed for sampling in this study is simple random sampling.

**Results:** The findings of the study indicated that a significant majority of the participants, specifically 87.1%, had completed the initial step of the Covid-19 vaccination process. The study explored the association between pregnant women's knowledge, attitudes, the role of health personnel, the involvement of husbands, socio-economic status, and their level of participation in Covid-19 immunisation. The findings of the multivariate analysis indicated that the variable with the greatest influence was the mother's readiness for pregnancy (p-value = 0.028; POR = 4.510). The participation of pregnant women in Covid-19 immunisation is influenced by various factors, including knowledge, attitudes, the role of health providers, the role of spouses, and socio-economic factors. The primary determinant is the attitude exhibited by pregnant mothers. There is an expectation that healthcare professionals and family can enhance the level of confidence among pregnant women regarding their engagement in Covid-19 vaccination.

## INTRODUCTION

The global community is presently grappling with the Covid-19 epidemic, which has been attributed to the SARS-CoV-2 virus, commonly referred to as the coronavirus. The Covid-19 pandemic was initially identified in Wuhan, China, and was subsequently classified by the World Health Organisation (WHO) as a significant global concern and a public health emergency on February 30, 2020[1]. The Covid-19 pandemic led to the implementation of limitations on a wide range of regular services, including the provision of medical care for both women and babies. An illustration of the consequences of the Covid-19 epidemic is the suspension of posyandu activities, leading to significant disruptions in essential immunisation services and the monitoring of infants' and young children's growth.

In 2020, Angeliki Antonakou observed that pregnant women exhibit apprehension towards participating in screening procedures due to concerns regarding the potential implications of positive results. This apprehension stems from the

understanding that their subsequent delivery will be subject to Covid-19 rules.The user's text is already academic and does not need to be rewritten. The presence of the coronavirus in pregnant women might exacerbate pre-existing medical conditions, resulting in severe symptoms and potentially fatal outcomes. Moreover, pregnant women who exhibit significant manifestations of Covid-19 are also susceptible to the adverse outcomes of premature labour, miscarriage, and mortality.According to official data from Padang City, the total number of individuals who have received the first vaccine is 739,137, which corresponds to the province target. Additionally, the number of individuals who have received the second vaccine is 508,680, again in line with the provincial aim. Padang City in West Sumatra exhibits the greatest incidence rate of Covid-19, with a cumulative total of 42,922 cases and 555 fatalities. However, the vaccination coverage for pregnant women remains suboptimal, with just 10%7 having received the Covid-19 vaccine. According to data provided by the West Sumatra Indonesian Obstetrics and Gynaecology Association (POGI), a mere 10 percent or 2,000 individuals out of about 20,000 pregnant women in West Sumatra had received the vaccine.The user's text is already academic and does not require any rewriting.

According to the available data on pregnant women diagnosed with Covid-19 and the administration of vaccinations to pregnant women in December 2021, the Padang City Health Service has set a target of vaccinating 1,173 pregnant individuals. As of now, a total of 218 pregnant women have received the vaccination. Among these, 7 individuals received vaccine I, while only 1 individual received vaccine II.A study completed in 2021 by the PMDDUKCAPIL Service of Riau Province, which consistently stays abreast of Covid-19 and vaccine advancements, has determined that the efficacy of the Covid-19 vaccination programme is contingent upon various interconnected elements, with public communication being one such component.The user did not provide any text to rewrite. A study conducted at the Casa Medika Clinic in Bandung City in May 2020 elucidated that a significant proportion of pregnant women exhibited a commendable level of awareness and a favourable attitude towards the prevention of Covid-19. The findings of this study indicate a correlation between knowledge and behaviour regarding the prevention of Covid-19. However, there is no significant association between knowledge and attitude towards preventing Covid-19. It is recommended that pregnant women maintain a positive attitude towards preventing Covid-19 in their daily lives during the pandemic, as this can help mitigate the transmission of the virus.According to the aforementioned statement and the initial data collected, there is a cohort of 200 pregnant women who have monthly pregnancy check-ups at the clinic, with nearly 30 pregnant women delivering their babies at the clinic on a monthly basis. Hence, there is a significant scholarly interest in conducting research within the operational domain of the Community Health Centre. The proposed research aims to investigate the factors that are correlated with the level of engagement exhibited by pregnant women in receiving the Covid-19 vaccination. Specifically, the study will be conducted in the working area of the Belimbing Community Health Centre, located in Padang City, during the year 2022.

## METHOD

This research employs a quantitative research methodology, specifically utilising a cross-sectional study design, to investigate the factors associated with the engagement of pregnant women in the Covid-19 immunisation programme within the Working Area of the Belimbing Health Centre, Padang City, in the year 2022. The process of data collection involves the distribution of a questionnaire to individuals from whom responses are sought. The study was carried out between the months of January and July 2022. The study encompassed a population of 1173 pregnant women residing in the Working Area of the Belimbing Health Centre, located in Padang City. The participants in this study consisted of pregnant women who had been administered a minimum of one dose of the Covid-19 vaccine within the operational jurisdiction of the Belimbing Health Centre, located in Padang City, during the year 2022. The sample methodology employed in this investigation was Simple Random sample. The data analysis employed in this study encompassed univariate analysis, bivariate Chi-Square Test, and multivariate analysis utilising multiple logistic regression. These analytical techniques were adjusted to align with the research objectives and were presented in the form of a frequency distribution table.

## RESULT DAN DISCUSSION

**Table 1: Univariate Analysis Table Frequency Distribution of Independent and Dependent Variables Research**

| Variable | Frequency (n) | Percentage (%) |
|---|---|---|
| **Vaccination** | | |
| Received at least one vaccination. | 81 | 87.1 |
| Didn't get the vaccination. | 12 | 12.9 |
| **Total** | 93 | 100 |
| **Knowledge Level** | | |
| Good | 77 | 82.8 |
| Poor | 16 | 17.2 |
| **Total** | 93 | 100 |
| **Attitude** | | |
| Willing | 78 | 83.9 |
| Not willing | 15 | 16.1 |
| **Total** | 93 | 100 |
| **Role of Health Workers** | | |
| Role | 75 | 80.6 |
| Less Role | 18 | 19.4 |
| **Total** | 93 | 100 |
| **Husband's Role** | | |
| Support | 75 | 80.6 |
| Less Supportive | 18 | 19.4 |
| **Total** | 93 | 100 |
| **Socioeconomic** | | |
| High | 78 | 83.9 |
| Low | 15 | 16.1 |
| **Total** | 93 | 100 |

According to the data presented in the table, a significant proportion of pregnant women, specifically 87.1% or 81 individuals who participated in the immunisation programme, reported having received at least one vaccination. Based on the data presented in the table, it was seen that a significant proportion of pregnant women exhibited a commendable level of knowledge pertaining to their engagement in vaccination. Specifically, 82.8% of individuals, corresponding to a total of 77 respondents within the jurisdiction of the Belimbing Community Health Centre, had a satisfactory understanding in this respect. According to the data presented in the table, a significant proportion of pregnant women had positive attitudes about engaging in vaccination, with 83.9% or 78 individuals in the working area of the Belimbing Community Health Centre expressing favourable sentiments.

According to the data presented in the table, it can be observed that a significant proportion of health professionals, specifically 80.6% or a total of 75 individuals, actively engage in various aspects of the vaccination process within the operational jurisdiction of the Belimbing Community Health Centre. Based on the data presented in the table, it can be observed that a significant proportion of husbands (80.6%) residing in the Belimbing Community Health Centre region fulfil a supportive role in the context of vaccination. This corresponds to a total of 75 individuals. Presented below is a frequency distribution table illustrating the responses obtained from inquiries pertaining to the involvement of husbands in supporting pregnant women within the occupational domain of the Belimbing Community Health Centre during the year 2022.

According to the data presented in the table, it can be observed that a significant proportion of individuals engaged in socio-economic activities in the context of vaccination participation surpass the UMR threshold of 2.5 million rupiah, accounting for 83.9% or 78 individuals within the operating jurisdiction of the Belimbing Community Health Centre.

**Table 2: The Relationship between Knowledge Level Factors and the Participation of Pregnant Women in the Work Area of the Belimbing Health Center, Padang City in 2022**

| Knowledge Level | Vaccination | | | | Total | | POR (95% CI) | p-value |
| | Received at least one vaccination | | Didn't get the vaccination | | | | | |
| | frequency | % | frequency | % | frequency | % | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Good | 70 | 75,2 | 7 | 7,5 | 77 | 82,7 | 4,545 | |
| Poorly | 11 | 11,8 | 5 | 5,5 | 16 | 17,3 | (1,224- | 0,046 |
| Total | 81 | 87 | 12 | 13 | 100 | 100 | 16,879) | |

The tabulated findings indicate that a greater proportion of pregnant women opted to take the Covid-19 immunisation compared to pregnant women possessing a high degree of awareness (75.2%). Based on the results of statistical analyses, the obtained p-value of 0.046 (p < 0.05) indicates a statistically significant association between the level of awareness regarding pregnant women's engagement in immunisation within the operational jurisdiction of the Starfruit Health Centre in Padang City. The point estimate for the prevalence odds ratio (POR) is 4.545, indicating that pregnant women with a high level of knowledge are 4.545 times more likely to engage in Covid-19 immunisation. Based on the conducted bivariate analysis, a statistically significant association was observed between the level of knowledge and vaccination uptake among pregnant women in the working area of the Belimbing health centre in Padang City in 2022, as indicated by a p-value of 0.046 (p-value < 0.05). The statistical analysis yielded a POR value of 4,545, indicating that individuals with a high degree of knowledge exhibited a much higher likelihood of engaging in Covid-19 immunisation, with a magnitude of 4,545 times greater compared to those with lower levels of knowledge. The acquisition of knowledge is a crucial factor in shaping human behaviour. The significance of knowledge in shaping human behaviour is significant, since it influences the formation of beliefs that subsequently shape one's perception of reality and ultimately dictate their attitudes and behaviours. As per the assertion made by Prof. Dr. Musta'in Mashud, a Sociology Expert from Airlangga University, there exists a noteworthy correlation between knowledge and the inclination to undergo additional vaccinations, such as influenza and TT vaccinations, among pregnant women. The rejection of the COVID-19 vaccine can be attributed, in part, to the community's insufficient knowledge and comprehension regarding the advantages and risks associated with vaccines [42].

According to the research conducted by Sri Untari, a correlation was found between knowledge and participation in the Covid-19 immunisation within the Brati Grobogan District. There exists a positive correlation between the level of knowledge had by pregnant women regarding Covid-19 and their inclination to engage in the administration of the Covid-19 vaccine. The majority of respondents exhibited a high school level of education, comprising approximately 54.5% of the sample. In terms of employment status, a significant proportion of respondents, specifically 93.1%, reported not being engaged in any form of labour. The level of information pertaining to Covid-19 is classified as satisfactory, with a percentage of 63.6%. A total of 30 pregnant individuals, accounting for 68.1% of the sample, were included in the Covid-19 immunisation study. The study's findings indicated a p-value of 0.017, which is less than the predetermined significance level of 0.05. As a result, it may be inferred that the alternative hypothesis (Ha) was accepted, suggesting a significant association between the amount of knowledge and participation in the Covid-19 vaccine [42].

There is a need for increased dissemination of information among pregnant women regarding the significance of vaccination. The aforementioned factor influences the programmes and activities undertaken by the mother during the gestational period. Moreover, based on the findings of the study, it is evident that a considerable number of pregnant women maintain the

belief that Covid-19 possesses the potential to cause fatalities. Undoubtedly, Covid-19 is an infectious ailment that poses significant risks to the well-being of expectant mothers. Consequently, it is imperative to prioritise vaccination initiatives as a means to mitigate these risks. In order to mitigate the risk of exposure to the Covid-19 epidemic, it is necessary to possess knowledge pertaining to preventive measures and activity limitations.

**Table 3: Relationship between Attitude Factors towards the Participation of Pregnant Women in the Working Area of the Belimbing Health Center, Padang City, in 2022**

| Attitude | Vaccination | | | | Total | | POR (95% CI) | p-value |
|---|---|---|---|---|---|---|---|---|
| | Received at least one vaccination | | Didn't get the vaccination | | | | | |
| | frequency | % | frequency | % | frequency | % | | |
| Willing   Not | 71 | 76,3 | 7 | 7,5 | 78 | 83,8 | 5,071 | |
| Willing | 10 | 10,7 | 5 | 5,5 | 15 | 16,2 | (1,348- | 0,031 |
| Total | 81 | 87 | 12 | 13 | 100 | 100 | 19,077) | |

The tabulated findings indicate that there is a higher proportion (76.3%) of pregnant women who exhibit a positive inclination towards receiving the Covid-19 immunisation. Based on the results of the statistical analysis, a p-value of 0.031 (p < 0.05) was found, indicating a significant association between attitude characteristics and the participation of pregnant women in vaccination within the operating area of the Belimbing Health Centre in Padang City. The Point of Response (POR) score of 5.071 indicates that pregnant women who possess a positive inclination are 5.071 times more likely to engage in the Covid-19 immunisation process. Based on the conducted bivariate analysis, a significant association was observed between attitude factors and vaccination uptake among pregnant women in the working area of the Belimbing Health Centre in Padang City in 2022. The statistical analysis yielded a p-value of 0.031, indicating a statistically significant link (p-value <0.05). The statistical test yielded a Point of Ratio (POR) value of 5.071, indicating that those with a positive attitude were 5.071 times more likely to receive the Covid-19 vaccination.

This study aligns with the studies conducted by Andi Hasliani. Based on the findings of the study, it was observed that among the 74 participants, 91.4% exhibited a positive attitude. Out of them, 67.9% experienced a favourable pregnancy process, while 23.5% encountered challenges during their pregnancy. Out of the total sample size of seven participants, 8.6% exhibited a negative attitude. Among these respondents, two individuals (2.5%) reported a positive pregnancy experience, whereas five participants (6.2%) reported a negative pregnancy experience. The Chi Square statistical test (specifically, Fisher's exact test) yielded a p-value of 0.022, which is less than the predetermined significance level of α = 0.05. Consequently, the alternative hypothesis (Ha) was accepted, while the null hypothesis (Ho) was rejected. This outcome indicates the presence of a significant association between attitudes towards the pregnancy process. The obtained p-value of 0.022, which is less than the predetermined significance level of 0.05, indicates statistical significance [44].

According to the findings of Rafika Oktova's study, the investigation revealed that pregnant women's attitudes towards COVID-19 were predominantly positive. Out of a total of 98 participants, approximately 75.5% (n=74) exhibited a positive attitude, while approximately 24.5% (n=24) displayed a negative attitude. Out of the total sample size of 74 participants who exhibited a favourable attitude, it was observed that 64 individuals, accounting for 86.5% of the respondents, demonstrated commendable behaviour in terms of COVID-19 prevention [39]. The findings of this study align with the research conducted by Sari et al. (2020), which reported that a significant proportion of the Banjar population exhibited a favourable attitude towards COVID-19 prevention measures (99.15%) and demonstrated commendable behavioural practises in preventing the spread of the virus (90.20%) [45]. Yanti et al. (2020) conducted a study that revealed a comparable finding, indicating that 59% of participants exhibited a favourable attitude, while 93% demonstrated commendable behaviour in relation to preventive measures against COVID-19 [46]. The findings of Mudawaroch's 2020 study similarly indicated that a significant proportion of participants who

exhibited a positive attitude also had favourable behavioural patterns. The research findings indicate a significant correlation between attitudes and individuals' behaviour [47].

**Table 4. Relationship between the Factors of the Role of Health Workers on the Participation of Pregnant Women in the Work Area of the Belimbing Health Center in Padang City in 2022**

| Role of Health Workers | Vaccination | | | | Total | | POR (95% CI) | p-value |
|---|---|---|---|---|---|---|---|---|
| | Received at least one vaccination | | Didn't get the vaccination | | | | | |
| | frequency | % | frequency | % | frequency | % | | |
| Support | 69 | 74,1 | 6 | 6,5 | 75 | 80,6 | 5,750 | |
| Less Support | 12 | 12,9 | 6 | 6,5 | 16 | 19,4 | (1,588- | 0,013 |
| Total | 81 | 87 | 12 | 13 | 93 | 100 | 20,825) | |

The data presented in the table indicates that there is a higher proportion of pregnant women who receive the Covid-19 immunisation among those who have healthcare staff involved in their care (74.1%). Based on the statistical analysis, a p-value of 0.013 (p < 0.05) was found, indicating a significant association between attitude characteristics and the participation of pregnant women in immunisation within the operating area of the Belimbing Health Centre in Padang City. The Point of Risk (POR) value is determined to be 5,750, indicating that pregnant women who are accompanied by healthcare professionals have a significantly higher likelihood, approximately 5,750 times greater, of engaging in the Covid-19 vaccination process. The conducted bivariate analysis revealed a significant association between the involvement of health professionals and the vaccination of pregnant women in the operational jurisdiction of the Belimbing Health Centre in Padang City in 2022. This association was determined to be statistically significant, as indicated by a p-value of 0.013, which is below the conventional threshold of 0.05. The statistical analysis yielded a POR value of 5.750, indicating that health personnel who are actively involved had a significantly higher likelihood, approximately 5.750 times larger, of encouraging pregnant women to acquire the Covid-19 vaccine.

Expressing dissent towards the findings of Nuzulul Rahmi's 2021 study reveals contrasting outcomes. Among the 20 participants who had health workers assuming a more prominent role, the proportion of individuals who deemed it suitable to undergo ANC visits was 47.6%. Conversely, among the 22 respondents who did not have health workers playing a dominant role, the percentage of individuals who considered ANC visits inappropriate was 52.3%. The bivariate test yielded a p-value of 0.004, indicating a statistically significant association between health professionals and Antenatal Care (ANC) visits in the working area of the Ie Alang Health Centre, Aceh Besar District, during the Covid-19 pandemic [34].

This study aligns with the research conducted by Mamalanggo et al. (2019). The findings of their study indicate that 38.3% of mothers received adequate support from health workers and attended antenatal care visits regularly, whereas 18.5% received less consistent support. On the other hand, 29.6% of mothers received inadequate support from health workers with irregular visits, while only 13.6% received regular visits. The statistical analysis using the chi-square test revealed a significant relationship between the support of health professionals and prenatal care visits (ANC) at the Ranotana Weru Health Centre in Manado City. The obtained p-value of 0.003 indicates that there is a statistically significant association between these variables [43].

One of the responsibilities of healthcare professionals is to establish an educational programme for expectant mothers, aimed at enhancing healthcare provisions for both pregnant women and their families. By implementing such a programme, the knowledge of pregnant women and their families regarding maternal health can be augmented, subsequently influencing the attitudes and behaviours of expectant mothers in utilising healthcare facilities. Particularly in the context of pregnancy verification [44].

**Table 5. Relationship between Husband's Role Factors and Participation of Pregnant Women in the Working Area of the Belimbing Health Center, Padang City in 2022**

| Husband's Role | Vaccination | | | | Total | | POR (95% CI) | p-value |
|---|---|---|---|---|---|---|---|---|
| | Received at least one vaccination | | Didn't get the vaccination | | | | | |
| | frequency | % | frequency | % | frequency | % | | |
| Role | 69 | 74,1 | 6 | 6,5 | 75 | 80,6 | 5,750 | |
| Less Role | 12 | 12,9 | 6 | 6,5 | 16 | 19,4 | (1,588- | 0,013 |
| Total | 81 | 87 | 12 | 13 | 93 | 100 | 20,825) | |

The tabulated findings indicate that a higher proportion of pregnant women received the Covid-19 immunisation compared to pregnant women whose spouses were involved (74.1%). Based on the results of statistical analysis, it was determined that the p-value was 0.013 (p < 0.05), indicating a significant association between attitude characteristics and the level of involvement of pregnant women in immunisation within the operational jurisdiction of the Starfruit Health Centre in Padang City. The Point of Relative (POR) value is determined to be 5,750, indicating that pregnant women who possess a supportive spouse exhibit a significantly amplified likelihood, 5,750 times more, of engaging in the Covid-19 vaccination process. Based on the conducted bivariate analysis, a statistically significant association was observed between the husband's role and the vaccination status of pregnant women within the jurisdiction of the Belimbing health centre in Padang City in 2022. The obtained p-value of 0.013 (p-value < 0.05) indicates the presence of a significant link. The statistical analysis yielded a POR value of 5,750, indicating that individuals with husbands who play an active part possess a significantly higher likelihood, 5,750 times greater, of obtaining the Covid-19 vaccine.

This study aligns with the findings of Rafika Oktova, who discovered a statistically significant association between spousal support and pregnant women's preventive behaviours against COVID-19, with a p-value of 0.001 (p<0.05). The findings of this study indicated that a majority of pregnant women, namely 64 individuals (92.8%), reported receiving support from their husbands and exhibited favourable behaviours in preventing the transmission of Covid-19. Conversely, a smaller proportion of pregnant women, specifically 5 individuals (7.2%), who got support from their husbands demonstrated inadequate behaviours in preventing the transmission of Covid-19. In the study, it was observed that among the pregnant women, a total of 13 individuals (44.8%) who did not receive support from their husbands exhibited good behaviour in relation to COVID-19. On the other hand, 16 pregnant women (55.2%) with unsupportive husbands shown poor behaviour. These findings were reported in a previous study [39].

One of the primary factors contributing to maternal hesitancy towards vaccination during pregnancy and postpartum is the husband's disapproval of engaging in vaccination-related activities, driven by concerns for the well-being of his pregnant spouse. Therefore, there is a need to enhance the education of spouses of the potential risks associated with vaccination during pregnancy, particularly in typical circumstances. In this context, it is evident that there exists a commendable degree of maternal engagement and awareness pertaining to the administration of the Covid-19 vaccination. This observation is noteworthy as it underscores the significance of the health dynamics involved, which in turn offer favourable provisions for both the well-being of the mother and the developing foetus.

**Table 6: Relationship between Socio-Economic Factors and the Participation of Pregnant Women in the Working Area of the Belimbing Health Center, Padang City in 2022**

| Socioeconomic | Vaccination | | | | Total | | POR (95% CI) | p-value |
|---|---|---|---|---|---|---|---|---|
| | Received at least one vaccination | | Didn't get the vaccination | | | | | |
| | frequency | % | frequency | % | frequency | % | | |
| High | 72 | 77,3 | 6 | 6,5 | 75 | 80,6 | 8,000 | |
| Low | 9 | 9,7 | 6 | 6,5 | 16 | 19,4 | (2,122- | 0,003 |
| Total | 93 | 87 | 12 | 13 | 93 | 100 | 30,155) | |

The table presents the findings of the investigation, indicating that a higher proportion of pregnant women had the Covid-19 vaccine when their socio-economic parameters above the threshold of 2.5 million rupiah, with a percentage of 77.3%. Based on the results of statistical analyses, it was determined that the resultant p-value was 0.003 (p < 0.05), indicating a statistically significant association between socio-economic factors and the involvement of pregnant women in immunisation within the operational jurisdiction of the Starfruit Health Centre in Padang City. The Point of Relative (POR) value is determined to be 8,000, indicating that pregnant women belonging to high socioeconomic position possess a significantly amplified likelihood, around 8,000 times more, of engaging in Covid-19 vaccination. The conducted bivariate analysis revealed a statistically significant association between socio-economic roles and the vaccination status of pregnant women in the work area of the Belimbing health centre in Padang City in 2022, as indicated by a p-value of 0.003 (p-value < 0.05). The statistical analysis yielded a Point of Risk (POR) value of 8,000, indicating that individuals with a high socioeconomic position exhibited a significantly elevated likelihood, approximately 8,000 times larger, of receiving the Covid-19 vaccination.

In Vinny's study, the Chi Square statistical test (specifically, the Fisher exact test) yielded a p-value of 0.031, which is less than the predetermined significance level of α=0.05. Consequently, the alternative hypothesis (Ha) was accepted, while the null hypothesis (Ho) was rejected. These findings indicate the presence of a statistically significant relationship between socio-economic roles and the pregnancy process, as elucidated by the outcomes of the conducted research. Conclusions can be derived from the data collected at the Ranotana Weru Community Health Centre in Wanea District, Manado City. Firstly, it is evident that the majority of respondents fall within the age range of 21-35 years. Secondly, the educational background of most respondents is at the high school level, with some having pursued higher education at the university level. Thirdly, a significant proportion of respondents are employed. Moreover, the family income level of the majority of respo

The significance of attending to these socio-economic factors resides in their potential to influence the awareness and comprehension of families and pregnant women with regards to the Covid-19 virus and immunisation. A favourable socio-economic status is likely to foster a positive inclination among pregnant women towards vaccine acceptance, and conversely, an unfavourable socio-economic status may deter their willingness to do so. Additionally, a robust socio-economic environment, coupled with adequate support systems, facilitates prompt access to reliable information. Conversely, individuals residing in low socio-economic conditions, characterised by income levels below the minimum wage threshold of approximately 2,500,000 per month, are particularly susceptible to the influence of misinformation and economic pressures.

Table 7: Multivariate Analysis of the Participation of Pregnant Women in the Work Area of the Belimbing Health Center, Padang City in 2022

| Variable | variable is removed | p-value | POR | 95%CI | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| Role of Health Workers | Husband's Role | 0,068 | 3,713 | 0,909 | 15,175 |
| Attitude | | 0,028 | 4,510 | 1,175 | 17,305 |

In the second multivariate modelling statistical test, upon excluding the husband's role variable, it was observed that there was a change in odds ratio (ΔPOR) of less than 10%. This indicates that the husband's role does not act as a confounding variable and can be permanently excluded from the analysis. Subsequently, the variable pertaining to the husband's role was omitted from the analysis due to its significantly high p-value. Based on the obtained probability of response (POR) value, it can be inferred that the attitude variable exhibits the highest level of influence among the other variables. Specifically, the POR value of 4.510 indicates that pregnant women who possess a positive attitude towards Covid-19 vaccination are 4.510 times more likely to engage in the vaccination process.

The findings of the multivariate analysis revealed that the attitude component had the highest level of influence on the vaccination of pregnant women within the operational jurisdiction of the Belimbing Health Centre in Padang City in the year

2022. A statistically significant p-value of 0.028 was observed, indicating that pregnant women with a positive attitude are 4.510 times more likely to participate in immunisation in the working area of the Belimbing health centre in Padang city. Pregnant women have a high level of compliance and demonstrate a favourable disposition towards the prevention of Covid-19, driven by concerns over potential adverse effects on their infants. According to Peyronnet et al. (2020), in addition to the favourable mindset exhibited by pregnant women, the hospital administration promptly enacted the Covid-19 preventive policy for this demographic. Moreover, a study conducted by Yassa et al. (2020) in Turkey elucidated that among the 172 pregnant women who participated in the research, 65% exhibited a positive attitude and expressed trust in the Government and the efficacy of healthcare professionals in managing and mitigating the spread of Covid-19. Additionally, 85% of the mothers expressed their willingness to adhere to the quarantine measures implemented within their homes [11].

The prevention of Covid-19 necessitates the cultivation of a positive mindset, as such an attitude engenders a heightened sense of responsibility and facilitates the adoption of constructive behaviours. Pregnant individuals who possess a favourable disposition towards the prevention of Covid-19 stand to derive substantial advantages, access ample knowledge, and effectively implement these measures in their daily routines. Consequently, this proactive approach is expected to provide favourable outcomes by mitigating the hazards associated with Covid-19 for pregnant women. Researchers have found that the attitude of pregnant women significantly impacts their acceptance of the Covid-19 immunisation. Pregnant women lacking adequate information and knowledge regarding the COVID-19 vaccination are more likely to exhibit vaccine hesitancy. This is particularly evident due to the novelty of the COVID-19 virus, which may render pregnant women susceptible to external influences from irresponsible individuals within their communities, thereby leading to vaccine refusal.

## CONCLUSION

The present study examines the link between five characteristics, including knowledge, attitudes, the role of health workers, the role of spouses, and socio-economic status, and the level of participation in Covid-19 vaccination among pregnant women in the Belimbing Community Health Centre region, located in Padang City. This finding demonstrates that various factors, including knowledge, attitudes, the involvement of healthcare professionals, the involvement of spouses, and socio-economic circumstances, exert an influence on the level of participation in vaccination among pregnant women. The findings of the multivariate analysis indicate that the attitude variable exhibits the strongest correlation with the vaccination of pregnant women in the work area of the Belimbing health centre in Padang City in 2022. This relationship is supported by a p-value of 0.028 and a POR (Prevalence Odds Ratio) of 4.510.

## ANNOUNCEMENTS

## REFERENCE

[1]    A. Setyawan, F. A. Purnomo, J. A. Firdaus, A. Nugraheni, and A. P. Balita, "Sosialisasi Peningkatan Pengetahuan Ibu Hamil dan Balita dalam Pemantauan Secara Mandiri Pada Era Pandemik COVID-19 di Kelurahan Ngesrep Semarang," pp. 549–554; 2019.

[2]    A., Pujianti, N., Laily, N., Anhar, V. Y., Anggraini, L., Azmiyannoor, M., Ridwan, A. M., & Muddin, F. I. Perilaku Pencegahan Covid-19 Ditinjau dari Karakteristik Individu dan Sikap Masyarakat. Jurnal Penelitian dan Pengembangan Kesehatan Masyarakat Indonesia,1(1).https://journal.unnes.ac.id/sju/index.php/jppkmi/article/view/41428; 2020.

[3]     B. Kec and T. Lili, "Hubungan Pengetahuan dan Sikap Terhadap Kepatuhan Ibu Hamil Dalam Pemeriksaan ANC Pada Masa Pandemi di Poskesdes," vol. 2, no. 1, pp. 108–120; 2021.

[4]     Dewi, R., Widowati, R., dan Indrayani, T. Pengetahuan dan Sikap Ibu Hamil Trimester III Terhadap Pencegahan Covid-19. Health Information Jurnal Penelitian Vol. 12 No. 2 Desember; 2020.

[5]     E. Vaksin, C. Pada, I. B. U. Hamil, D. I. Desa, P. Tanah, and A. Nurlaily, "Covid 19 Vaccine Education On Pregnant Women In Possi Tanah Village Kajang District Of Bulukumba Regency PENDAHULUAN Indonesia dan Negara-negara lain masih terus berjuang untuk mengatasi pandemic COVID- 19 , Sampai saat ini tercatat sudah lebih dari 120 ju," vol. 2, no. 2, pp. 48–52; 2021.

[6]     H. F. A. Subratha, "Literatur Review Anemia Dalam Kehamilan Dengan Kejadian Perdarahan Post Partum Hesteria Friska Armynia Subratha Program Studi D3 Kebidanan Fakultas Kedokteran Universitas Pendidikan Ganesha," J. BIMTAS, pp. 1–6, [Online]. Available; 2021.

[7]     Kemenkes RI. Profil Kesehatan Indonesia 2020. Jakarta: Kemenkes RI; 2020.

[8]     Luo, Y., & Yin, K. Management of pregnant women infected with COVID-19. The Lancet Infectious Diseases, 20 (5); 2020.

[9]     Mudawaroch,R.E. Hubungan pengetahuan dan sikap terhadap perilaku mahasiswa dalam menghadapi virus corona. Prosiding HUBISINTEK, 362, 257–263.http://ojs.udb.ac.id/index.php/HUBISINTEK/article/view/1004; 2020.

[10]    P. D. K. K. Padang, "No Title," Dinas Kesehatan Kota Padang, https://dinkes.padang.go.id/# (accessed Feb. 20, 2022).

[11]    P. Putra, "Angka Vaksinasi Ibu Hamil di Sumbar Baru 10 Persen, Ketua POGI: Karena Termakan Hoaks," PADANG, KOMPAS.com,    2021.    https://regional.kompas.com/read/2021/12/13/122014978/angka-vaksinasi-  ibu-hamil-di-sumbar-baru-10-persen-ketua-pogi-karena (accessed Feb. 19, 2022).

[12]    R. Dewi et al., "HIJP : Health Information Jurnal Penelitian Pengetahuan dan Sikap Ibu Hamil Trimester III terhadap Pencegahan Covid- 19," vol. 12; 2020.

[13]    R. Indriyani, "Implementasi Peningkatan Imunitas Pada Ibu Hamil Di Masa Pandemi Covid-19," Kesehatan, vol. 11, pp. 679–688; 2021.

[14]    S. Artuti and E. Dewi, "Komunikasi Publik Terkait Vaksinasi Covid 19,"; 2021.

[15]    Saud M, Mashud M, Ida R. Usage of social media during the pandemic: Seeking support and awareness about COVID-19 through social media platforms. J Public Aff.20(4); 2020.