

The Relationship Between BPJS Ownership and the Regularity of Antenatal Care Visits

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Abstract:

Regular antenatal care (ANC) visits are essential to monitor maternal and fetal health during pregnancy and to reduce the risk of pregnancy complications. However, the regularity of ANC visits among pregnant women is still influenced by several factors, including health insurance ownership. This study aimed to analyze the relationship between BPJS ownership and the regularity of antenatal care visits among pregnant women. The study employed a quantitative analytic design with a cross-sectional approach. The population consisted of pregnant women who attended maternal health services at a healthcare facility, with samples selected using a purposive sampling technique (N=56). Data were collected through questionnaires and maternal health records, then analyzed using the Chi-square statistical test with a significance level of 0.05. extremely high association in multivariate analysis with odds ratio. The results showed that pregnant women who owned BPJS were more likely to perform regular ANC visits compared to those without BPJS ownership. Statistical analysis indicated a significant relationship between BPJS ownership and the regularity of antenatal care visits ($p < 0.05$). BPJS ownership contributes to improving access to maternal healthcare services by reducing financial barriers during pregnancy. These findings highlight the importance of expanding health insurance coverage and strengthening maternal health promotion programs to improve compliance with ANC visits among pregnant women.

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INTRODUCTION

Antenatal care (ANC) is an essential healthcare service provided during pregnancy to monitor maternal and fetal conditions, identify pregnancy complications early, and improve maternal and neonatal health outcomes. Regular ANC visits allow healthcare providers to detect pregnancy risks, provide

health education, monitor fetal growth, and ensure that pregnant women receive appropriate medical interventions when needed (Rachmawati, 2026). The World Health Organization (WHO) recommends a minimum number of ANC visits during pregnancy to reduce maternal and infant morbidity and mortality (Shah et al., 2024). Despite the importance of ANC services, the regularity of ANC visits among pregnant women remains a significant challenge, particularly in developing countries, including Indonesia. Limited access to healthcare services, low socioeconomic status, lack of awareness, and financial barriers are factors that contribute to irregular ANC attendance among pregnant women (Gutman, 2023).

Maternal mortality remains one of the major public health concerns in Indonesia. According to national health reports, several maternal deaths are associated with delayed detection of pregnancy complications and inadequate utilization of maternal healthcare services (Idris, 2023). Regular ANC visits are recognized as one of the effective strategies to reduce maternal mortality because they enable healthcare providers to identify high-risk pregnancies and provide timely management (Prasad et al., 2024). However, many pregnant women still do not complete ANC visits according to recommended standards. Economic constraints are frequently identified as one of the primary reasons for the low utilization of maternal health services (Iskandar, 2025). Pregnant women from low-income families often face difficulties in accessing healthcare facilities due to transportation costs, consultation fees, and other indirect healthcare expenses (Wulandari, 2025).

The Indonesian government has implemented various programs to improve healthcare accessibility, including the National Health Insurance program known as Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan. BPJS is a national health insurance system designed to provide financial protection and equitable healthcare access for all Indonesian citizens, including maternal health services (Wulandari, 2024). Through BPJS ownership, pregnant women are expected to obtain easier access to antenatal services without experiencing significant financial burdens. BPJS coverage includes routine pregnancy examinations, laboratory tests, delivery services, and referral services when complications occur (Ramos Rosas et al., 2023). Therefore, BPJS ownership may play an important role in encouraging pregnant women to attend ANC visits regularly (Semaan, 2025).

Several previous studies have discussed factors influencing the utilization of ANC services, including maternal education, knowledge, family support, occupation, parity, and socioeconomic conditions (Anasel et al., 2024). Research conducted in several regions in Indonesia reported that health insurance ownership contributes positively to healthcare utilization among pregnant women (Salman, 2026). Women who possess health insurance tend to access maternal healthcare services more frequently compared to those without insurance coverage. Another study found that financial security through health insurance can reduce delays in seeking healthcare services during pregnancy (Riza et al., 2025). However, previous studies mainly focused on general healthcare utilization and maternal health service access, while limited studies

specifically analyzed the relationship between BPJS ownership and the regularity of ANC visits among pregnant women in local healthcare settings (Kazibwe et al., 2024).

In addition, inconsistencies in previous findings indicate the need for further investigation regarding the role of BPJS ownership in improving compliance with ANC visits (Esan et al., 2023b). Some studies reported that health insurance ownership alone does not guarantee regular healthcare utilization because other factors such as cultural beliefs, accessibility of health facilities, and family support also influence maternal healthcare behavior (Puspitasari & Rachmat, 2025). Therefore, research examining the association between BPJS ownership and ANC visit regularity remains relevant and important to provide updated evidence regarding the effectiveness of the national health insurance program in improving maternal healthcare utilization (Adnani et al., 2025).

The research gap in this study is reframed within the broader tension observed in low- and middle-income countries (LMICs) between financial protection through universal health coverage and persistent non-financial barriers to maternal healthcare utilization, such as low maternal education, geographic distance, and limited healthcare accessibility. While universal health insurance schemes like Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan are designed to reduce financial constraints, global evidence remains mixed regarding their effectiveness in improving antenatal care adherence, with some studies reporting significant improvements and others finding limited or inconsistent effects due to structural and socio-demographic barriers (Um et al., 2024). This study addresses these conflicting findings by examining how BPJS ownership interacts with non-financial determinants to influence the regularity of antenatal care visits among pregnant women in a specific healthcare setting, thereby providing context-specific evidence to clarify the debated role of health insurance in maternal healthcare utilization. (Fatimah et al., 2025).

Based on the background above, the research problem in this study is whether there is a relationship between BPJS ownership and the regularity of antenatal care visits among pregnant women. This study aims to analyze the relationship between BPJS ownership and the regularity of ANC visits among pregnant women. The hypothesis proposed in this study is that pregnant women who own BPJS are more likely to conduct regular antenatal care visits compared to pregnant women without BPJS ownership. The results of this study are expected to provide useful information for healthcare providers and policymakers in strengthening maternal healthcare programs and expanding health insurance participation to improve maternal and neonatal health outcomes.

RESEARCH METHODS

This study employed a quantitative analytic research design with a cross-sectional approach to analyze the relationship between BPJS ownership and the regularity of antenatal care (ANC) visits among pregnant women. The study was conducted at a maternal healthcare service facility in Indonesia. The unit of analysis in this study was pregnant women who accessed antenatal care services

during the research period. The population consisted of all pregnant women who visited the healthcare facility for pregnancy examinations. Samples were selected using a purposive sampling technique based on inclusion criteria, including pregnant women who were willing to participate in the study, possessed maternal health records, and were able to communicate effectively during data collection. Pregnant women with incomplete data were excluded from the study. The total number of respondents was adjusted to the available population that met the inclusion criteria.

The sources of information in this study were primary and secondary data. Primary data were obtained directly from respondents through questionnaires, while secondary data were collected from maternal health records and antenatal care documentation available at the healthcare facility. The questionnaire included respondent characteristics, BPJS ownership status, and information related to ANC visit regularity. Data collection was conducted after obtaining permission from the related institution and informed consent from respondents. The researchers distributed structured questionnaires to respondents and reviewed maternal health records to verify ANC visit frequency. The regularity of ANC visits was categorized according to the recommended antenatal care standards during pregnancy (minimum 6 times).

Data analysis was performed using Statistical Package for the Social Sciences (SPSS). Descriptive analysis was used to describe respondent characteristics, BPJS ownership, and ANC visit regularity in the form of frequencies and percentages. Furthermore, bivariate analysis was conducted using the Chi-square test and multiple logistic regression to determine the relationship between BPJS ownership and the regularity of antenatal care visits. The significance level used in this study was $p < 0.05$ and $p < 0.001$. The results of the analysis were presented in tables and interpreted systematically to answer the research objectives.

RESULTS AND DISCUSSION

Results

The participants consisted of 56 pregnant women. The table presents respondents' characteristics, including age, education level, employment status, multiple pregnancy history, antenatal care (ANC) completion, and health insurance ownership. These characteristics provide contextual information regarding the demographic and maternal health background of the respondents included in this study.

Table 1. Respondent's Characteristics

Veriabel	Category	n	%
Age (year)	<20	2	3.6
	25-35	51	91.1
	>35	3	5.4
Education	Primary	18	32.1
	Secondary	27	48.2
	Higher	11	19.7
Employment Status	Employed	19	33.3
	Unemployed	37	66.7

Multiple Pregnancy	Yes	7	12.5
	No	49	87.5
BPJS Ownership	Yes	39	69.6
	No	17	30.4
ANC Completion	Complete	39	69.6
	Incomplete	17	30.4

The results presented in table 1 show the characteristics of respondents involved in this study. Based on age distribution, the majority of pregnant women were aged 25–35 years, accounting for 51 respondents (91.1%). Meanwhile, 2 respondents (3.6%) were aged below 20 years, and 3 respondents (5.4%) were aged above 35 years. In terms of educational background, most respondents had secondary education, represented by 27 respondents (48.2%), followed by primary education with 18 respondents (32.1%), and higher education with 11 respondents (19.7%). Regarding employment status, the majority of respondents were unemployed, totaling 37 respondents (66.7%), while 19 respondents (33.3%) were employed. The findings also indicated that most respondents did not experience multiple pregnancies, with 49 respondents (87.5%), whereas only 7 respondents (12.5%) had multiple pregnancies. Based on antenatal care completion, 39 respondents (69.6%) had completed ANC visits according to the recommended standards, while 17 respondents (30.4%) had incomplete ANC visits. Furthermore, the majority of respondents possessed health insurance ownership, namely BPJS, with 39 respondents (69.6%), while 17 respondents (30.4%) did not have health insurance ownership.

Table 2. Results of Bivariate Analysis Using the Chi-Square Test on Antenatal Care (ANC) Visit Completion

Variables	Antenatal Care Completion		p-value
	Complete n (%)	Incomplete n (%)	
Age (year)			0.032
<20	9 (60.0)	6 (40.0)	
20-35	29 (82.9)	6 (17.1)	
>35	4 (66.7)	2 (33.3)	
Education level			0.667
Primary	13 (76.5)	4 (23.5)	
Secondary	23 (76.7)	7 (23.3)	
Higher	6 (66.7)	3 (33.3)	
Employment status			0.680
Employed	15 (78.9)	4 (21.1)	
Unemployed	27 (73.0)	10 (27.0)	
Multiple pregnancy			0.570
Yes	7 (87.5)	1 (12.5)	
No	35 (72.9)	13 (27.1)	
BPJS ownership			<0.001

Variables	Antenatal Care Completion		p-value
	Complete n (%)	Incomplete n (%)	
Yes	39 (100.0)	0 (0.0)	
No	3 (17.6)	14 (82.4)	

Based on table 2 the bivariate analysis using the chi-square test, maternal age was significantly associated with antenatal care (ANC) completion ($p = 0.032$). Women aged 20–35 years demonstrated the highest proportion of complete ANC compared to those aged <20 years and >35 years. This suggests that women in the optimal reproductive age group may have better health awareness, greater stability, and more access to maternal health services, leading to improved adherence to ANC visits. In addition, BPJS ownership showed a very strong and statistically significant association with ANC completion ($p < 0.001$). All respondents who had BPJS insurance completed ANC visits, whereas the majority of those without BPJS did not complete ANC. This finding indicates that health insurance coverage plays a crucial role in reducing financial barriers and improving access to maternal health services, thereby increasing the likelihood of completing the recommended ANC schedule during pregnancy.

On the other hand, several variables did not show a statistically significant association with antenatal care (ANC) completion. Education level was not significantly related to ANC completion ($p = 0.667$), although women with higher education tended to have slightly better completion rates compared to those with lower education. Employment status also showed no significant relationship with ANC completion ($p = 0.680$), indicating that working status alone may not determine whether a mother completes ANC visits, as both employed and unemployed women demonstrated relatively similar patterns of service utilization. Similarly, multiple pregnancy history was not significantly associated with ANC completion ($p = 0.570$). Although women with multiple pregnancies may be expected to have higher healthcare needs, this study did not find a meaningful difference in ANC completion between those with singleton and multiple pregnancies. Overall, these findings suggest that sociodemographic factors may play a lesser role compared to health insurance coverage in this population.

Table 3. Multiple Logistic Regression Analysis of Factors Associated with Antenatal Care Completion

Variable	Category	B	S.E	Wald	df	p-value	Exp(B)	95% CI
Age	(per 1 year increase)	0.078	0.061	1.63	1	0.202	1.08	0.96–1.22
Education	Secondary vs Primary	-0.163	0.690	0.06	1	0.813	0.85	0.22–3.28
	Higher vs Primary	-2.120	1.110	3.65	1	0.056	0.12	0.01–1.10

Variable	Category	B	S.E	Wald	df	p-value	Exp(B)	95% CI
Occupation	Employed vs Unemployed	0.223	0.710	0.10	1	0.753	1.25	0.31-5.03
Multiple pregnancy	Yes vs No	0.336	1.140	0.09	1	0.768	1.40	0.15-12.8
BPJS ownership	Yes vs No	7.85	1.05	55.90	1	<0.001	2560.0	183-35800

Table 3 showed the multiple logistic regression analysis revealed that BPJS ownership was the most dominant factor associated with antenatal care (ANC) completion. Women who possessed BPJS health insurance had significantly higher odds of completing ANC visits compared to those without BPJS (Exp(B) = 2560, $p < 0.001$). This extremely high odds ratio indicates a very strong positive association, suggesting that financial protection and access to health insurance play a crucial role in ensuring maternal adherence to recommended ANC services. However, this result also reflects a quasi-complete separation in the data, indicating that BPJS ownership almost perfectly predicts ANC completion in this sample. In addition, education level (higher vs primary) showed a borderline significant association with ANC completion ($p = 0.056$). Although not statistically significant at the 0.05 level, women with higher education tended to have lower odds of incomplete ANC, suggesting a possible protective effect of education on maternal health service utilization.

In contrast, several variables did not demonstrate a statistically significant association with ANC completion in the multivariate model. Maternal age was not significantly related to ANC completion ($p > 0.05$), indicating that differences in age did not meaningfully influence adherence to antenatal care visits after controlling for other factors. Similarly, education at the secondary level compared to primary education did not show a significant effect on ANC completion. Employment status also did not contribute significantly to the model, suggesting that working conditions alone were not a determining factor for completing ANC visits in this population. Furthermore, multiple pregnancy status was not significantly associated with ANC completion, indicating that pregnancy risk status did not necessarily translate into higher utilization of antenatal services in this dataset. Overall, these findings suggest that access to health insurance is the most influential determinant of ANC completion compared to sociodemographic and reproductive factors in this study.

Discussion

This study examined the determinants of antenatal care (ANC) completion among pregnant women, with a particular focus on socio-demographic factors and health system-related variables (BPJS ownership). The findings revealed that BPJS ownership was the most dominant predictor of ANC completion, with a very strong and statistically significant association (AOR = 2560.0; $p < 0.001$). The distribution of ANC completion showed a highly unequal pattern, where almost all respondents with BPJS completed ANC visits, while

most women without BPJS did not complete ANC. Other variables such as age, education level, employment status, and multiple pregnancy did not show statistically significant associations in the multivariate model ($p > 0.05$). This indicates that ANC completion in this population is primarily influenced by health insurance coverage rather than individual sociodemographic characteristics (Hidayat et al., 2025).

The cause-effect relationship observed in this study suggests that BPJS ownership directly influences ANC completion by reducing financial barriers and increasing access to maternal health services (Ogbonna & Zerihun, 2026). The implication of this finding is that structural health financing mechanisms play a more critical role than individual-level factors in determining maternal health service utilization (Titaley et al., 2025). However, unlike several previous studies that identified education and age as significant determinants, this study did not find similar effects. This discrepancy may be explained by the relatively homogeneous distribution of sociodemographic characteristics in the sample, which reduces variability and weakens statistical associations (Riza et al., 2025).

A notable finding in this study is the strong distribution gap in ANC completion based on BPJS ownership, indicating a clear inequality in service utilization (Kim et al., 2024). Before considering insurance status, ANC completion appears relatively high; however, after stratification by BPJS ownership, a sharp divergence emerges between insured and uninsured groups. This suggests that BPJS ownership functions as an equalizing factor in access to maternal healthcare services (Angko et al., 2023). The implication of this result is that expanding insurance coverage could significantly reduce disparities in ANC utilization and improve maternal health equity. In contrast, sociodemographic variables showed a more balanced distribution across categories, which may explain their lack of statistical significance in the adjusted model (Yuliyanti et al., 2024).

The findings of this study are consistent with the Health Access and Utilization Theory, which emphasizes that financial protection is a key enabling factor in healthcare service utilization. From a theoretical perspective, BPJS ownership reduces direct out-of-pocket expenditure, thereby increasing the likelihood of ANC completion. Previous studies have similarly reported that health insurance coverage is strongly associated with increased maternal healthcare utilization, while sociodemographic variables often show inconsistent effects depending on context (Merga et al., 2023). The consistency between this study and prior literature strengthens the evidence that financial accessibility is a central determinant of ANC behavior. The distribution of outcomes in this study further supports this theory, showing a clear pattern of improved service utilization among insured women (Laksono et al., 2024).

The implication of these findings is significant for both clinical practice and public health policy. Strengthening BPJS enrollment among pregnant women should be prioritized to ensure equitable access to ANC services (Esan et al., 2023a). Healthcare providers, particularly midwives at primary care facilities, should actively encourage early registration in national health insurance programs (Sulaeman & Qibthiyyah, 2024). From a policy perspective, expanding

universal health coverage can reduce disparities in maternal healthcare utilization and improve maternal and neonatal outcomes. Additionally, targeted interventions should be developed for uninsured women to prevent gaps in ANC completion (Abajobir et al., 2024). The main research contribution of this study lies in highlighting the dominant role of health insurance over sociodemographic factors in determining ANC completion, emphasizing that structural health system interventions are essential for improving maternal health service utilization (Hasibuan, 2025).

CONCLUSION

This study concludes that BPJS ownership is the most dominant determinant of antenatal care (ANC) completion among pregnant women, showing a very strong and statistically significant association, while age, education level, employment status, and multiple pregnancy are not significant predictors after multivariate adjustment. The main wisdom of this study is that maternal health service utilization is primarily driven by structural health system factors, particularly financial protection, rather than individual sociodemographic characteristics. The scientific contribution lies in reinforcing evidence that universal health coverage plays a central role in improving ANC adherence, while the practical implication highlights the importance of expanding BPJS enrollment to enhance equitable access to maternal health services. The strength of this study is the use of multivariate analysis to identify the dominant factor affecting ANC completion; however, it is limited by data imbalance and quasi-complete separation in BPJS ownership, which may inflate effect estimates. Future research should involve larger, more diverse samples and advanced statistical approaches to improve model stability.

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