

FACTORS INFLUENCING ANTENATAL CARE (ANC) VISITS IN THE WORKING AREA OF GUNUNG TUA COMMUNITY HEALTH CENTER, NORTH PADANG LAWAS REGENCY

Yusna Sari Harahap *, Asriwati, Ramadhani Syafitri Nasution

Fakultas Kesehatan Masyarakat, Institut Kesehatan Helvetia Medan

Jalan Kapten Sumarsono No.107 Medan, Indonesia

Email: yharahap468@gmail.com

Abstract

Antenatal Care (ANC) is a healthcare service provided to pregnant women to monitor maternal and fetal health and to facilitate the early detection of pregnancy complications. Inadequate ANC utilization may result in delays in identifying risks and complications during pregnancy, thereby increasing the risk of maternal morbidity and mortality. Various factors may influence ANC utilization, including family support, particularly support from husbands. This study aimed to analyze factors associated with ANC visits among pregnant women in the working area of Gunung Tua Community Health Center, North Padang Lawas Regency. This study employed a quantitative descriptive-analytic design. The research was conducted in the working area of Gunung Tua Community Health Center. The sample consisted of 68 pregnant women selected using a non-probability sampling technique. Data were analyzed using univariate analysis, bivariate analysis with the Chi-Square test, and multivariate analysis using logistic regression. The bivariate analysis showed significant associations between age ($p=0.000$), education ($p=0.000$), parity ($p=0.000$), distance to health services ($p=0.000$), occupation ($p=0.000$), knowledge ($p=0.000$), husband's support ($p=0.000$), and attitude ($p=0.000$) and ANC visits. The multivariate analysis showed that husband's support was the most dominant factor associated with ANC visits, with an Exp(B) value of 4.691. Age, education, parity, distance to health services, occupation, knowledge, attitude, and husband's support were significantly associated with ANC visits among pregnant women in the working area of Gunung Tua Community Health Center. Husband's support was identified as the most dominant factor associated with ANC utilization. Health workers at Gunung Tua Community Health Center are encouraged to provide regular and intensive health education to pregnant women and their husbands regarding the importance of completing ANC visits according to the recommended standard of at least six visits during pregnancy.

Keyword: Antenatal Care, Pregnant Women, ANC Visits, Husband's Support, Community Health Center

Introduction

Antenatal Care (ANC) is an essential maternal healthcare service provided throughout pregnancy to monitor maternal and fetal health, provide health education, and prepare women for childbirth. Regular and continuous ANC visits enable healthcare providers to identify pregnancy-related risks and complications at an early stage and facilitate timely management. Inadequate ANC utilization may limit pregnant women's access to essential information regarding pregnancy danger signs and appropriate preventive measures, potentially resulting in delayed recognition and treatment of complications. Therefore, the quality and continuity of ANC services play an important role in improving maternal and neonatal health outcomes and reducing preventable maternal mortality ⁽¹⁾.

Maternal mortality remains a major global public health concern. The World Health Organization (WHO) estimated that approximately 260,000 women died in 2023 as a result of complications related to pregnancy and childbirth worldwide. Most maternal deaths are preventable through timely access to high-quality, affordable, and continuous maternal healthcare services. In line with the Sustainable Development Goals (SDGs), the global target is to reduce the maternal mortality ratio (MMR) to less than 70 deaths per 100,000 live births by 2030 ⁽²⁾. This target emphasizes the importance of strengthening maternal healthcare services, including ANC, particularly for the early identification and management of pregnancy complications.

Indonesia continues to face challenges in reducing maternal mortality. The maternal mortality ratio has historically remained relatively high, with approximately 305 maternal deaths per 100,000 live births. A substantial proportion of maternal deaths occur in hospitals, with many women being referred after developing severe complications. This situation highlights the importance of early risk identification and adequate monitoring during pregnancy before complications become severe ⁽³⁾. Recent data also indicate that reducing maternal mortality remains challenging. In 2023, approximately 4,129 maternal deaths were reported in Indonesia, while the estimated maternal mortality ratio remained above the SDG target in subsequent years. Although infant mortality has shown a more consistent declining trend, continued efforts to strengthen maternal and child health services are required to achieve national and global health targets ⁽⁴⁾.

To support the reduction of maternal and infant mortality, the Indonesian Ministry of Health has established standards for ANC services. Pregnant women are recommended to receive at least six ANC visits (K6) during pregnancy, consisting of two visits during the first trimester, one visit during the second trimester, and three visits during the third trimester. At least two of these visits should involve a physician, particularly during the first-trimester visit and the fifth visit in the third trimester ⁽⁵⁾. Similarly, WHO recommends ANC that promotes a positive pregnancy experience through regular assessment, health education, effective communication, and appropriate support for pregnant women ⁽⁶⁾. Thus, adherence to the recommended ANC schedule is an important component of comprehensive maternal healthcare.

At the national level, ANC coverage has generally shown improvement. The coverage of the fourth ANC visit (K4) during 2019–2023 increased and remained relatively stable, with national coverage in 2023 exceeding 85% and meeting the target of the Ministry of Health's Strategic Plan. However, substantial disparities remain between regions due to differences in healthcare access, geographical conditions, availability of healthcare workers, and other socioeconomic factors ⁽⁷⁾. These disparities indicate that national coverage alone may not adequately reflect the continuity and quality of ANC utilization at the primary healthcare level.

This issue is also observed in the working area of Gunung Tua Community Health Center. Data from 2023–2025 demonstrate a persistent gap between the first ANC visit (K1) and the fourth ANC visit (K4). In 2023, K1 coverage was 86%, while K4 coverage was 79%. In 2024, K1 coverage increased to 87%, whereas K4 coverage decreased to 78%. In 2025, K1 coverage further increased to 91%; however, K4 coverage declined substantially to 68% ⁽⁸⁾. The widening gap between initial and subsequent ANC visits suggests that although pregnant women have relatively good initial contact with healthcare services, continuity of ANC utilization remains suboptimal. Inadequate continuity of care may reduce opportunities for healthcare providers to monitor maternal and fetal conditions and detect pregnancy complications at an early stage ⁽⁹⁾.

Several studies have reported that ANC utilization is influenced by multiple individual, social, and accessibility-related factors. These include maternal age, educational level, occupation, parity, knowledge, attitude, husband and family support, as well as distance and access to healthcare facilities. In particular, social and family support may encourage pregnant women to initiate and maintain regular

ANC visits, while active communication and support from healthcare providers may further improve adherence to recommended ANC schedules ⁽¹⁰⁾.

Preliminary observations conducted by the researchers in the working area of Gunung Tua Community Health Center also identified several barriers to regular ANC utilization. Some pregnant women reported considering pregnancy a normal physiological process that did not require frequent medical examinations, particularly women who had previously given birth to more than two children. Work-related responsibilities were also reported as a barrier among pregnant women who worked outside the home. In addition, inadequate husband support, including the inability of husbands to accompany women because of work commitments, was reported to influence ANC attendance. Conversely, pregnant women who completed their ANC visits reported receiving continuous reminders and encouragement from their husbands, families, and healthcare workers. Accessibility was another important concern, as some women reported difficulty attending ANC because of the considerable distance between their homes and healthcare facilities and the absence of someone to accompany them.

These findings indicate that the low continuity of ANC visits from K1 to K6 may be associated with several interconnected factors, including knowledge, age, education, occupation, parity, husband and family support, and accessibility to healthcare facilities. However, local evidence regarding the relative contribution of these factors, particularly the role of husband support in ANC utilization in the Gunung Tua area, remains limited. Identifying the factors most strongly associated with ANC utilization is important for developing targeted interventions to improve continuity of maternal healthcare.

Therefore, this study aimed to analyze the factors associated with ANC visits among pregnant women in the working area of Gunung Tua Community Health Center, North Padang Lawas Regency. The findings are expected to provide evidence for strengthening maternal health education, family involvement, and community-based interventions to improve adherence to recommended ANC visits.

Methods

This study employed a quantitative analytical observational design with a cross-sectional approach to analyze the factors influencing toddlers' visits to Posyandu in the working area of Satria Community Health Center, Tebing Tinggi. The quantitative approach was used to analyze numerical data statistically and to examine the relationships between the independent variables and toddlers' visits to Posyandu, while the observational design was applied without intervention to the study participants ⁽¹¹⁾.

The study was conducted in the working area of Gunung Tua Community Health Center, North Padang Lawas Regency, in 2026. The study population consisted of pregnant women residing in the working area of Gunung Tua Community Health Center. A total of 68 pregnant women were included as the study sample. The sampling technique used was non-probability sampling with purposive sampling based on predetermined inclusion and exclusion criteria. The inclusion criteria were pregnant women residing in the working area of Gunung Tua Community Health Center, willing to participate in the study, and able to communicate effectively. Pregnant women who were unwilling to participate or did not complete the questionnaire were excluded from the study ⁽¹²⁾.

The independent variables consisted of maternal age, education, parity, occupation, distance to the health facility, knowledge, attitude, and husband's support. The dependent variable was ANC visits. Data were collected using a structured questionnaire developed based on the research variables and indicators. The questionnaire was administered directly to the respondents after they provided informed consent. The validity of the research instrument was assessed using the Pearson product-moment correlation test, with questionnaire items considered valid when the calculated correlation coefficient (r-count) exceeded the r-table value. Reliability was assessed using Cronbach's Alpha, with a

coefficient of ≥ 0.70 considered to indicate acceptable internal consistency. Validity and reliability testing were conducted before the questionnaire was used for the main data collection.

Data analysis consisted of univariate, bivariate, and multivariate analyses. Univariate analysis was performed to describe the characteristics and distribution of each research variable using frequencies and percentages. Bivariate analysis was conducted using the Chi-square test to determine the association between each independent variable, namely age, education, parity, occupation, distance to the health facility, knowledge, attitude, and husband's support, and ANC visits. Multivariate analysis was performed using binary logistic regression to identify the most dominant factor associated with ANC visits by simultaneously considering all independent variables. The strength of association was assessed using the odds ratio (Exp(B)) and 95% confidence interval. Statistical significance was determined at a p-value of <0.05 .

Result

Table 1. Distribution of Respondents According to ANC Visits

ANC Visits	Frequency (n)	Percentage (%)
Incomplete	50	73.5
Complete	18	26.5
Total	68	100.0

The majority of pregnant women had incomplete ANC visits (73.5%), while only 26.5% completed the recommended ANC visits.

Table 2. Association Between Independent Variables and ANC Visits

Variables	NC Visits Incomplete (%)	ANC Visits Complete n (%)	p-value
Age			<0.001
Risk age	-	-	
Non-risk age	-	-	
Education			<0.001
Basic	28 (41.2)	0 (0.0)	
Secondary	17 (25.0)	0 (0.0)	
Higher	5 (7.4)	18 (26.5)	
Parity			<0.001
Primipara	14 (20.6)	-	
Multipara	-	-	
Grand multipara	-	-	
Distance to health facility			<0.001
Far	39 (57.4)	5 (7.4)	
Near	11 (16.2)	13 (19.1)	
Occupation			<0.001
Working	39 (57.4)	2 (2.9)	
Not working	11 (16.2)	16 (23.5)	
Knowledge			<0.001
Poor	42 (61.8)	2 (2.9)	
Good	8 (11.8)	16 (23.5)	
Attitude			<0.001
Negative	41 (60.3)	1 (1.5)	
Positive	9 (13.2)	17 (25.0)	

Husband's support			<0.001
Not supported	44 (64.7)	1 (1.5)	
Supported	6 (8.8)	17 (25.0)	

Chi-square test; statistically significant at $p < 0.05$.

Table 3. Multivariate Logistic Regression Analysis of Factors Associated with ANC Visits

Variables	Exp(B)	p-value
Age	1.556	0.001
Education	0.007	0.001
Parity	1.398	0.018
Distance	1.786	0.009
Occupation	0.008	<0.001
Knowledge	1.904	0.001
Attitude	2.387	0.005
Husband's support	3.572	0.015

Binary logistic regression; Exp(B) = odds ratio; statistically significant at $p < 0.05$.

Discussion

Association Between Maternal Age and ANC Visits

The present study found a significant association between maternal age and ANC visits ($p < 0.001$). This finding indicates that maternal age was an important factor associated with the completeness of ANC visits among pregnant women in the working area of Gunung Tua Community Health Center. Among respondents in the risk-age group, the majority had incomplete ANC visits, whereas respondents in the non-risk age group were more likely to complete their ANC visits.

This finding is consistent with the study by Rika Victoria et al. at Mariana Health Center, which examined several factors associated with ANC visits, including age, parity, occupation, knowledge, attitude, and family support. The study demonstrated that maternal characteristics and behavioral factors were relevant to ANC utilization.

Maternal age may influence pregnancy-related decision-making and perceptions of the need for healthcare. Younger mothers may have limited experience and knowledge regarding pregnancy, whereas older mothers, particularly those who have experienced previous pregnancies, may perceive pregnancy as a normal condition and underestimate the need for routine ANC. Therefore, ANC education should be provided to pregnant women across all age groups, with greater attention to women who may perceive themselves as being at lower risk because of previous pregnancy experience.

Association Between Education and ANC Visits

The present study found a significant association between maternal education and ANC visits ($p < 0.001$). Mothers with higher educational attainment were more likely to complete ANC visits than mothers with lower educational attainment. All respondents with basic education in the present study had incomplete ANC visits, while most respondents with higher education completed ANC visits.

This finding is supported by research conducted in Indonesia using data from the 2017 Indonesian Demographic and Health Survey involving 6,429 poor women. The study demonstrated that education was an important factor in maternal healthcare-related behavior. Although the study specifically examined husbands' involvement in ANC, it found that higher educational attainment was associated with greater involvement in ANC. Husbands with higher education were more likely to participate in ANC compared with those without formal education.

Education may increase an individual's ability to access, understand, and apply health information. Mothers with higher education may be more capable of understanding the benefits of routine pregnancy examinations, recognizing pregnancy danger signs, and following recommendations from healthcare professionals. Therefore, improving ANC utilization among mothers with lower educational attainment requires simple, understandable, and repeated health education delivered through health workers, antenatal classes, and community-based services.

Association Between Parity and ANC Visits

The present study demonstrated a significant association between parity and ANC visits ($p < 0.001$). Multiparous mothers were more likely to have incomplete ANC visits compared with primiparous mothers. This finding suggests that previous pregnancy experience may influence mothers' perceptions of the importance of ANC.

A similar finding was reported by Laksono et al., who analyzed factors associated with husbands' involvement in ANC using Indonesian Demographic and Health Survey data. The study found that parity was significantly associated with husbands' involvement in ANC. Husbands whose wives had more children were less likely to participate in ANC compared with husbands of primiparous women.

The lower utilization of ANC among multiparous women may occur because previous pregnancy experience creates a perception that subsequent pregnancies are familiar and therefore require less intensive monitoring. In addition, mothers with several children may have greater household responsibilities, making it more difficult to allocate time for ANC visits. This finding indicates that health workers should emphasize that every pregnancy carries its own risks, regardless of previous pregnancy outcomes.

Association Between Distance to Health Facilities and ANC Visits

The present study found a significant association between distance to the health facility and ANC visits ($p < 0.001$). Mothers who lived farther from the health facility were more likely to have incomplete ANC visits compared with those who lived closer.

This finding is supported by research conducted at Muara Madras Health Center, Jangkat District, which found a significant relationship between distance from the home to the health facility and the frequency of ANC visits ($p = 0.0005$). The same study identified education and knowledge as additional factors associated with ANC frequency.

Distance represents an important geographical barrier to healthcare utilization. Greater distance may increase transportation costs, travel time, and the physical burden experienced by pregnant women. These barriers may become more substantial for mothers who depend on husbands or family members for transportation and accompaniment.

The consistency between the present findings and previous research indicates that improving ANC utilization cannot rely solely on increasing mothers' knowledge. Health services must also address accessibility barriers. Outreach ANC services, village-based maternal health services, home visits, and improved transportation or referral mechanisms may be considered for pregnant women living far from health facilities.

Association Between Maternal Occupation and ANC Visits

The present study found a significant association between maternal occupation and ANC visits ($p < 0.001$). Working mothers were more likely to have incomplete ANC visits than mothers who were not working outside the home.

This result is consistent with research conducted by Victoria et al. at Mariana Health Center, which specifically examined occupation as one of the factors associated with ANC visits. The study

included maternal age, parity, occupation, knowledge, attitude, and family support as potential factors associated with ANC utilization.

Occupation may affect ANC utilization through time constraints and competing responsibilities. Working mothers may have difficulty attending health facilities during regular service hours because they must meet employment obligations. In addition, commuting time and fatigue may further reduce their ability to attend scheduled ANC appointments.

The findings suggest that ANC services should be organized in a way that accommodates working pregnant women. Flexible service hours, appointment-based ANC, reminder systems, and coordination between health workers and pregnant women may help reduce missed visits.

Association Between Knowledge and ANC Visits

The present study found a significant association between maternal knowledge and ANC visits ($p < 0.001$). Mothers with poor knowledge were predominantly found to have incomplete ANC visits, while mothers with good knowledge were more likely to complete ANC.

This finding is supported by a study conducted at UPTD Wonggeduku Health Center, Konawe Regency, which specifically examined the relationship between pregnant women's knowledge and ANC visits. The study identified maternal knowledge as an important factor in ANC utilization.

Similarly, a study conducted at Muara Madras Health Center found a significant relationship between maternal knowledge and the frequency of ANC visits ($p = 0.001$). These findings are consistent with the present study and indicate that knowledge is an important behavioral factor in ANC utilization.

Mothers who understand the benefits of ANC are more likely to recognize that pregnancy monitoring is necessary even when they do not experience symptoms. Conversely, inadequate knowledge may lead mothers to seek care only when they experience complaints or perceive pregnancy as a normal physiological process that does not require regular examination.

Therefore, improving maternal knowledge should be an important component of ANC programs. Health education should not only explain the schedule of ANC visits but should also explain the purpose of each visit, pregnancy danger signs, potential complications, and the consequences of inadequate pregnancy monitoring.

Association Between Maternal Attitude and ANC Visits

The present study demonstrated a significant association between maternal attitude and ANC visits ($p < 0.001$). Mothers with negative attitudes toward ANC were substantially more likely to have incomplete ANC visits, whereas mothers with positive attitudes were more likely to complete their ANC visits.

This finding is consistent with the study conducted at Mariana Health Center, which included maternal attitudes among the factors examined in relation to ANC visits. The study emphasized that behavioral characteristics, including knowledge and attitudes, are relevant to ANC utilization.

Attitude reflects how mothers evaluate and respond to ANC services. Mothers who believe that ANC is important are more likely to perceive routine pregnancy examinations as a necessity rather than an optional activity. Conversely, negative perceptions may lead mothers to delay or skip visits, particularly when pregnancy is considered normal and no symptoms are present.

A study by Yuniarti et al. also demonstrated that interventions involving community health cadres could improve knowledge, attitudes, and ANC-related outcomes among pregnant women. This finding suggests that community-based approaches may be useful for modifying attitudes toward ANC and strengthening utilization of maternal health services.

Association Between Husband's Support and ANC Visits

The present study found a significant association between husband's support and ANC visits ($p < 0.001$). Mothers who did not receive husband's support were predominantly found to have incomplete ANC visits, whereas mothers who received husband's support were more likely to complete ANC.

This finding is strongly supported by research conducted at Peukan Bada Health Center, Aceh Besar, involving 55 third-trimester pregnant women. The study found a significant relationship between husband's support and ANC compliance ($p = 0.001$). Emotional support, instrumental support, and appreciation support were also significantly associated with ANC compliance.

A similar finding was reported by Sumiatik in pregnant women at Tanjung Selamat Health Center, Langkat District. The study examined the relationship between husband's support and ANC compliance, demonstrating the importance of husband's involvement in maternal healthcare.

Research by Mamuroh et al. at Sukawening Health Center also found a significant relationship between husband's support and ANC visits, with $p = 0.012$ and an odds ratio of 3.5. This indicates that mothers receiving husband's support had substantially greater odds of completing ANC visits.

More recent research by Khairul et al. at Kolaka Health Center also demonstrated that family support significantly influenced pregnant women's decision to undertake their first ANC visit (K1).

The consistency of these findings suggests that husband's support is an important social determinant of ANC utilization. Support may include reminding the mother about ANC schedules, accompanying her to health facilities, providing transportation, assisting with household responsibilities, providing financial support, and participating in healthcare decisions.

Husband's Support as the Dominant Factor

The multivariate analysis in the present study showed that all eight independent variables remained statistically significant in the final model: age, education, parity, distance, occupation, knowledge, attitude, and husband's support. Husband's support had the largest Exp(B) value, namely 3.572 ($p = 0.015$), indicating that it was the most dominant factor associated with ANC visits in this study.

This finding is supported by several previous studies demonstrating the importance of husband or family involvement in ANC. Adami et al. found that husband's support was significantly associated with ANC compliance among pregnant women at Peukan Bada Health Center ($p = 0.001$). Mamuroh et al. also reported a significant association between husband's support and ANC visits, with an OR of 3.5.

Furthermore, Laksono et al. demonstrated that husband involvement in ANC in Indonesia was associated with several socioeconomic and demographic factors, including residence, education, occupation, wealth, and parity. Their findings highlight that ANC utilization is not solely an individual maternal behavior but is also influenced by the family environment, particularly the role of the husband.

The dominant role of husband's support in the present study suggests that interventions to improve ANC coverage in the Gunung Tua area should involve husbands as active participants in maternal healthcare. Health education should therefore be directed not only toward pregnant women but also toward husbands and families. Such interventions may include husband-focused counselling, family ANC education, reminders through health workers or cadres, and encouragement for husbands to accompany their wives during ANC visits.

Overall, the present findings are consistent with previous studies conducted in different Indonesian settings, particularly regarding the roles of education, knowledge, distance, parity, occupation, attitude, and husband's support in ANC utilization. The strongest and most consistent evidence was observed for husband's support, suggesting that family involvement should be considered an important component of strategies to improve ANC attendance.

Conclusion

This study concluded that maternal age, education, parity, distance to the health facility, occupation, knowledge, attitude, and husband's support were significantly associated with antenatal care (ANC) visits among pregnant women in the working area of Gunung Tua Community Health Center, North Padang Lawas Regency. The multivariate analysis showed that all eight variables remained significantly associated with ANC visits after being analyzed simultaneously. Among these factors, husband's support was identified as the most dominant factor, with an Exp(B) of 3.572 and a p-value of 0.015.

These findings indicate that improving ANC utilization requires a comprehensive approach that addresses both individual and environmental factors. Strengthening maternal knowledge and positive attitudes toward ANC, improving accessibility to health facilities, and providing services that accommodate working mothers are important strategies. In addition, involving husbands and families in maternal health education and ANC services should be prioritized because husband's support demonstrated the strongest association with ANC visits in this study. Efforts to improve ANC coverage in the Gunung Tua area should therefore emphasize active family involvement alongside strengthening maternal health services and health education.

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