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THE ASSOCIATION BETWEEN MATERNAL KNOWLEDGE AND COMPLETION OF THE SIXTH ANTENATAL CARE VISIT (K6)

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ABSTRACT
Antenatal care (ANC) is a series of pregnancy examinations aimed at optimizing the physical and mental health of pregnant women, enabling them to adequately prepare for childbirth, the postpartum period, breastfeeding, and the restoration of reproductive health. Adequate maternal knowledge is considered an important factor influencing pregnant women's compliance with antenatal care visits, including the sixth antenatal care visit (K6). This study aimed to examine the association between maternal knowledge and completion of the K6 antenatal care visit among pregnant women at Gandapura Public Health Center, Bireuen Regency. This study employed an analytic survey with a cross-sectional design. The study population consisted of all pregnant women with gestational ages of 36–40 weeks. A total of 31 respondents were selected using accidental sampling. Data were collected using a structured questionnaire to measure maternal knowledge and medical records to verify K6 visits. Data were analyzed using univariate and bivariate analyses, with the chi-square test applied to determine the association between variables. The findings showed that the majority of respondents with moderate knowledge did not complete the K6 visit, accounting for 7 respondents (22.6%). Statistical analysis using the chi-square test revealed a p-value of 0.000 ($p < 0.05$), indicating a significant association between maternal knowledge and K6 antenatal care visits. This study demonstrates a significant association between maternal knowledge and completion of the sixth antenatal care visit (K6) among pregnant women.

Keywords: antenatal care; maternal knowledge; pregnant women; sixth antenatal care visit (K6)

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INTRODUCTION

Pregnancy is a normal and natural physiological process that should be recognized and understood by healthcare providers, particularly midwives. Consequently, the provision of appropriate maternity care should emphasize a promotive approach rather than a purely curative one. One of the most accessible and effective forms of promotive care is the implementation of Communication, Information, and Education (CIE) for pregnant women, focusing on maternal health monitoring and the management of common discomforts during pregnancy. Antenatal care services should be delivered in a continuous and integrated manner (continuity of care), ensuring consistency between one service and another. This approach aims to enable pregnant women to receive care from the same healthcare professional or a small, consistent team of professionals. Through continuity of care, changes in maternal conditions can be closely monitored over time, while simultaneously fostering trust and openness, as pregnant women feel familiar and comfortable with their care providers (Hatijar et al., 2020).

Antenatal care services provided by healthcare professionals in Indonesia are regulated under Regulation of the Minister of Health of the Republic of Indonesia No. 21 of 2021, which governs

the provision of health services during the preconception period, pregnancy, childbirth, postpartum care, contraceptive services, and sexual and reproductive health services. According to this regulation, pregnant women are required to attend a minimum of six antenatal care visits, consisting of one visit during the first trimester, two visits during the second trimester, and three visits during the third trimester. These antenatal care examinations must be conducted at authorized healthcare facilities and provided by qualified healthcare professionals. Furthermore, at least two antenatal visits are required to be performed by a general practitioner or an obstetrician, specifically during the first and third trimesters (Ministry of Health of the Republic of Indonesia, 2023; World Health Organization, 2022). Knowledge plays a crucial role in shaping healthy behaviors, as individual decision-making is strongly influenced by the level of knowledge possessed. Pregnant women who have adequate knowledge regarding the standard of the sixth antenatal care visit (K6) are more likely to recognize the importance of adhering to the recommended antenatal care schedule throughout pregnancy. Adequate maternal knowledge facilitates informed decision-making related to the completion of K6 antenatal care visits in accordance with established standards during pregnancy (Adelita A et al., 2024).

According to United Nations Children's Fund (UNICEF) data in 2022, global coverage of antenatal care (ANC) services reached 88% for the first antenatal visit (K1) and 69% for the fourth visit (K4). The East Asia and the Pacific region recorded the highest ANC coverage worldwide, with 97% for K1 and 89% for K4 (UNICEF, 2022). In Indonesia, the National Medium-Term Development Plan (RPJMN) 2022 set a target of 60% coverage for the sixth antenatal care visit (K6) among pregnant women. Recent data indicate that this target has been exceeded, with national K6 coverage reaching 70.9%. At the provincial level, Banten Province reported the highest K6 coverage at 84.6%, whereas Aceh Province remains substantially below the RPJMN target, with K6 coverage of only 53.4%. One of the main challenges in the implementation of maternal health services is the need to improve service quality, particularly ensuring that all essential components of antenatal care are delivered during each visit (Ministry of Health of the Republic of Indonesia, 2022). Within Aceh Province, the highest K6 coverage was observed in Sabang District, reaching 211.1%, while Bireuen District reported a K6 coverage of 62.4% (Aceh Provincial Health Office, 2022). This study aimed to examine the association between maternal knowledge and completion of the K6 antenatal care visit among pregnant women at Gandapura Public Health Center, Bireuen Regency.

METHOD

This study employed an analytic survey design aimed at examining the relationship between two variables: maternal knowledge as the independent variable and completion of the sixth antenatal care visit (K6) as the dependent variable among pregnant women. A cross-sectional approach was applied, in which observations and measurements of all variables were conducted at a single point in time. The sampling technique used was accidental sampling, resulting in a total of 31 respondents. The study was conducted at Gandapura Public Health Center. Data were collected using a structured questionnaire to assess maternal knowledge, while K6 visit completion was derived from the respondents Maternal and Child (KIA) handbooks or medical record. Univariate analysis was performed to describe the distribution and frequency of each variable, and bivariate analysis using the chi-square test was conducted to evaluate the relationship between maternal knowledge and K6 visit completion, with a significance level set at $p<0.05$.

RESULT

Univariate Analysis

Respondent Characteristics

The characteristics of respondents in this study included age, educational level, occupation, and parity. Overall, the distribution of respondent characteristics is presented in the frequency distribution table below:

Table 1.
Frequency Distribution of Respondent Characteristics

Category	f	%
Maternal Age		
20–30 years	19	61.3
31–40 years	12	38.7
Educational Level		
Junior High School	4	12.9
Senior High School	17	54.8
Higher Education	10	32.3
Occupation		
Housewife	25	80.6
Contract/Temporary Worker	6	19.4
Parity		
Primiparous	8	25.8
Multiparous	20	64.5
Grand multiparous	3	9.7

Based on table 1, the majority of respondents were aged 20–30 years, with 18 mothers (58%). In terms of educational level, most respondents had completed senior high school, totaling 18 mothers (58%). Regarding occupation, the majority of respondents were housewives, accounting for 25 mothers (81%). With respect to parity, most respondents were multiparous, defined as having more than one child, comprising 20 mothers (65%).

Respondents' Level of Knowledge

The respondents' level of knowledge was classified into three categories, namely good, moderate, and poor, as presented in the table below:

Table 2.
Frequency Distribution of Respondents' Knowledge

Respondents' Knowledge	f	%
Good	9	29.0
Moderate	2	38.7
Poor	10	32.2

Based on table 2, the majority of respondents had a moderate level of knowledge, comprising 12 respondents (38.7%).

Level of K6 Antenatal Care Visits

The respondents' K6 antenatal care visits were classified into two categories, namely appropriate and inappropriate, as presented in the table below:

Table 3.
Frequency Distribution of Respondents' K6 Antenatal Care Visits

K6 Antenatal Care Visits	f	%
Appropriate	15	48.4
Inappropriate	16	51.6

Based on table 3, the majority of respondents had inappropriate K6 antenatal care visits, comprising 16 respondents (51.6%).

Bivariate Analysis

This analysis was conducted to examine the relationship between each variable, namely the independent variable maternal knowledge and family support, and the dependent variable K6 antenatal care visits. The results of the bivariate analysis are presented in the table below:

Association Between Maternal Knowledge and K6 Antenatal Care Visits

Table 4.
Association Between Maternal Knowledge and K6 Antenatal Care Visits

Maternal Knowledge	Appropriate K6 Visit		Inappropriate K6 Visit		Total		*p*-value
	f	%	f	%	f	%	
Good	9	100.0	0	0.0	9	29.0	0.000
Moderate	5	41.7	7	58.3	12	38.7	
Poor	1	10.0	9	90.0	10	32.3	

Based on table 4, the results indicate that pregnant women with good knowledge predominantly completed K6 antenatal care visits in accordance with the standard, accounting for 9 respondents (100%). In contrast, the majority of pregnant women with poor knowledge were found to have inappropriate K6 visits, comprising 9 respondents (90%). Based on the chi-square test conducted at a 5% level of significance, the analysis used a 3×2 contingency table and showed that 50% of the expected cell counts were less than 5. Therefore, the determination of the *p*-value was based on the Pearson chi-square test. The analysis examining the association between maternal knowledge and K6 antenatal care visits revealed a *p*-value of 0.000 ($p < 0.05$). This finding indicates that there is a statistically significant association between maternal knowledge and the completion of K6 antenatal care visits among pregnant women at Gandapura Public Health Center, Bireuen Regency.

DISCUSSION

Knowledge represents an individual's understanding that is acquired after receiving and processing specific information. Adequate knowledge among pregnant women plays an important role in influencing their health-related behaviors, particularly in relation to attending antenatal care services. Pregnant women with good knowledge are more likely to take appropriate actions regarding pregnancy check-ups, including complying with recommended antenatal care visits. Conversely, pregnant women with limited knowledge tend to experience greater difficulties in adhering to antenatal care visits, as the information they receive may be insufficient to influence their decision-making and health-seeking behavior. A systematic review by Meldgaard et al., (2022), demonstrated that health literacy during pregnancy encompasses functional, interactive, and critical competencies, including the ability to understand health information, communicate with healthcare professionals, use digital technologies, and make informed health-related decisious throughout pregnancy. In addition, recent findings by Bintabara et al., (2021) and Rahmah et al., (2022) highlight that low maternal awareness regarding risk signs and lack of spousal support remain primary determinants of inadecuate complete ANC visits. The result corroborate recent global and national empirical evidence demonstrating that maternal knowledge directly drives compliance with updated multi-visit ANC models (Tiruneh et al., 2021; Wulandari et al., 2023).

Based on the findings of this study, the level of maternal knowledge among pregnant women was predominantly classified as moderate, with 12 respondents (38.7%) falling into this category. This finding suggests that, on average, pregnant women possess a sufficient level of knowledge regarding pregnancy and antenatal care. One possible explanation is the increasing accessibility of pregnancy-related information through various sources, including healthcare services, digital media, and community-based health education, which may contribute to improved maternal knowledge compared to previous periods. The results of this study are consistent with previous research conducted by Anwar et al. (2022), which examined factors associated with the coverage of the fourth antenatal care visit (K4) at Cot Seumeureung Public Health Center, West Aceh Regency, in 2021. That study reported that among 56 respondents, 34 respondents (60.7%) had insufficient knowledge regarding K4 antenatal care visits, indicating that maternal knowledge remains a critical factor influencing antenatal care utilization. This is in line recent literature showing that digital health tools and targeted educational intreventions significantly improve maternal helath literacy and ANC utilization (Barakat et al., 2023). These findings reinforce the importance of improving maternal knowledge as a strategy to enhance compliance with recommended antenatal care visits.

The predominance of respondents classified as having a moderate level of knowledge may be influenced by the ease of access to health information in the digital era (Desriva et al., 2026). Currently, pregnant women do not rely solely on face-to-face education provided by healthcare professionals but also actively seek information through social media, pregnancy-related mobile applications, and other digital platforms (Mohamed et al., 2025; Nurdilan & Sahin, 2026). This improvement in digital health literacy enables pregnant women to independently understand danger signs during pregnancy and recognize the importance of routine antenatal care visits. This condition is further supported by the utilization of the Maternal and Child Health (MCH) Handbook, which is now also available in a digital format, allowing pregnant women to more easily monitor fetal development and maternal health independently (Ministry of Health of the Republic of Indonesia, 2023).

Having a moderate level of knowledge does not necessarily guarantee that pregnant women will consistently comply with antenatal care visits if it is not supported by other reinforcing factors. However, from a theoretical perspective, pregnant women with adequate knowledge tend to develop a better perception of risk, which in turn enhances their internal motivation to engage in early detection of pregnancy-related complications through routine antenatal care. This motivation is generally higher compared to women with lower levels of knowledge. Therefore, optimizing the role of midwives in delivering interactive and client-centered counseling is essential to strengthen maternal understanding and to elevate knowledge levels from *moderate* to *good*, ultimately supporting improved adherence to recommended antenatal care visits (Pratiwi et al., 2023; Sandall et al., 2024).

With regard to K6 antenatal care visits, the findings of this study indicate that the majority of respondents did not complete K6 visits in accordance with the standard, accounting for 16 respondents (51.6%). This finding suggests that noncompliance with the recommended K6 schedule remains a concern among pregnant women. One possible explanation is that some pregnant women may not fully understand the benefits of completing antenatal care visits according to established standards. In addition, the absence of family support, the perception of pregnancy as a normal condition without complications, and the lack of significant pregnancy-related complaints may reduce motivation to attend routine antenatal care visits . Consequently, the frequency of K6 visits may remain below the recommended minimum of six visits during pregnancy. These findings are consistent with a previous study conducted by Kristiana et al. (2024), which examined the relationship between maternal knowledge and spousal support with K6 antenatal care visits in the Takisung Public Health Center area. That study reported that among 35 respondents, 22 respondents (62.9%) did not complete K6 visits according to the recommended standard. The similarity of findings across studies highlights the persistent influence of both knowledge-related and social support factors on antenatal care utilization.

The statistical analysis using the chi-square test at a 5% level of significance demonstrated a significant association between maternal knowledge and K6 antenatal care visits. The analysis was performed using a 3×2 contingency table, in which 50% of the expected cell counts were less than five; therefore, the *p*-value was determined based on the Pearson chi-square test. The results revealed a *p*-value of 0.000 ($p < 0.05$), indicating a statistically significant relationship between maternal knowledge and compliance with K6 antenatal care visits among pregnant women at Gandapura Public Health Center, Bireuen Regency. This finding suggests that maternal knowledge plays an important role in shaping pregnant women's decisions regarding adherence to the recommended antenatal care schedule. Women with higher levels of knowledge are more likely to understand the benefits of completing K6 visits and to recognize the importance of early detection of potential pregnancy complications, thereby increasing their likelihood of attending antenatal care visits according to established standards.

The findings of this study are consistent with previous research conducted by Halifah (2024), which examined the relationship between maternal knowledge of antenatal care and pregnancy examination behaviors in the service area of Krueng Barona Jaya Public Health Center, Aceh Besar. The statistical analysis in that study showed that out of a total of 85 respondents, 53 pregnant women (63.4%) had a good level of knowledge, while the remaining respondents had moderate or poor knowledge levels. The reported *p*-value of 0.000 indicated a statistically significant association between maternal knowledge and antenatal care visit behavior. The consistency between these findings and the present study further reinforces the role of maternal knowledge as an important factor influencing antenatal care utilization, particularly in supporting adherence to recommended pregnancy examination schedules.

CONCLUSION

Based on respondents' characteristics, the majority of pregnant women were aged 20–30 years (61.3%), had completed senior high school education (54.8%), worked as housewives (80.6%), and were multiparous (64.5%). The majority of respondents had a moderate level of knowledge regarding antenatal care (38.7%). Most respondents did not complete K6 antenatal care visits in accordance with the recommended standard (51.6%). There was a statistically significant association between maternal knowledge and K6 antenatal care visits among pregnant women at Gandapura Public Health Center, Bireuen Regency ($p = 0.000$; $p < 0.05$)

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