

The Relationship between Quality Antenatal Care (ANC) Services and Pregnant Women's Satisfaction

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Abstract

Background: Optimal antenatal care (ANC) services play an important role in increasing the satisfaction of pregnant women during pregnancy visits to health workers. ANC visits need to be done routinely because it is important to monitor the health of the mother and fetus. **Objective:** This study aims to determine the level of satisfaction of pregnant women with ANC services at the Mangkubumi Health Center. **Method:** The study used a descriptive design with a cross-sectional approach. The study population was all pregnant women at the Mangkubumi Health Center, totaling 896 people. The sampling technique used was a purposive sampling technique with a solving formula; the total sample was 48 people. Data collection was done by filling out a service satisfaction questionnaire that included tangibles, reliability, responsiveness, assurance, and empathy. Data processing by editing, scoring, coding, tabulating, and analyzing descriptively. **Results:** The results showed that out of 48 respondents, 41 people (85.4%) were satisfied with ANC services, while pregnant women had a lower level of satisfaction, with 7 people (14.6%) being dissatisfied. The results of the chi-square statistical test obtained a P-value of 0.001 < 0.005, with an odds-ratio value of 5.646. **Conclusion:** Based on the study's results, it can be concluded that quality ANC services have a significant relationship with the satisfaction of pregnant women. **Suggestion:** It is hoped that health workers will continue to maintain existing service aspects and increase responsiveness so that pregnant women are increasingly satisfied with ANC services.

INTRODUCTION

Pregnancy is part of a woman's normal development that requires physical, psychological adaptation and early monitoring. The adaptation process is sometimes accompanied by complications that result in maternal death (Dahab et al, 2020). According to data from the WHO in 2024, 287,000 pregnant and childbirth women die every day, 99% of whom are from developing countries, women from rural areas, and women with low socioeconomic conditions.

Reducing the maternal mortality rate (MMR) to 70 per 100,000 live births in 2030 is one of the targets of the Sustainable Development Goals (SDGs) (Ministry of Health, 2024). Indonesia is a developing country with a maternal mortality rate that is still above the SDGs target, and is in second place among ASEAN countries with the highest MMR of 183 per 100 thousand births in 2024. According to the West Java Health Service Report in 2024, West Java became the province with the second-highest maternal mortality rate, namely 127 cases, with Tasikmalaya City as one of the contributors to the maternal mortality rate.

The number of maternal deaths in Tasikmalaya City in 2024, based on data from the Tasikmalaya City Health Service's KIA Program Report, was 11 cases caused by undetected pregnancy complications such as preeclampsia, anemia, and KEK, which caused bleeding and emergencies during childbirth. Mangkubumi Health Center is one of the Health Centers in Tasikmalaya City with obstetric complication handling that has not met the target, namely an average of 38.5%, which requires an increase in the scope of complication handling to reduce maternal mortality through early treatment and prevention (Ministry of Health, 2024).

The Maternal Mortality Rate (MMR) is the main indicator of maternal health and is a benchmark for a country's health status. High MMR can affect IMR, so that health monitoring needs to be carried out during pregnancy (Ministry of Health, 2020). Based on the results of the 2023 Litbangkes Sample Registration System (SRS), the three main causes of maternal death are hypertension disorders (33.07%), obstetric hemorrhage (27.03%), and non-obstetric complications (15.7%). Meanwhile, based on Maternal Perinatal Death Notification (MPDN) data in 2023, the top three causes of maternal death are Eclampsia (37.1%), Hemorrhage (27.3%), and Infection (10.4%) with the highest place/location of death being in Hospital (84%) (Oluwole et al, 2024).

Indirect factors causing high maternal mortality rates include low levels of maternal knowledge and irregular frequency of antenatal care check-ups (WHO, 2023). Antenatal Care (ANC) is the most important component of maternal health services to reduce maternal and infant mortality rates, with ANC the development of the condition of pregnant women will be monitored properly at all times, and knowledge about preparing for childbirth will increase (Garcia et al, 2020). Antenatal care services can be said to be of quality if they are provided by established standards. This service is very important to carry out to monitor the development of pregnancy and detect complications that occur in pregnancy early so that they can be handled quickly and correctly, and it is hoped that this service can reduce pregnancy problems to childbirth which automatically reduces maternal mortality in Indonesia (Rahmawati et al, 2022). Pregnant women must receive these services from health workers or midwives so that they can find out the health status of their fetus. In addition, in providing antenatal care (ANC), midwives need to provide good services so that pregnant women feel satisfied during the ANC examination process. This is to support the motivation of pregnant women to monitor the development of their pregnancy (Oluwole et al, 2024).

Satisfaction is the level of state felt by a person, which is the result of comparing the appearance or outcome of a product perceived about a person's expectations (Rahmawati et al, 2022). According to Tjiptono, there are five main dimensions of customer satisfaction, which are arranged in order of relative importance, namely reliability, which is the ability of service providers/health workers to provide accurate services without making any mistakes according to the agreed time. Responsiveness, namely, the willingness of health workers to respond to client requests quickly. Assurance, namely the ability of health workers to build client trust and ensure that all forms of services provided are safe, with competent employees carrying out their services. Empathy, namely providing comfort to clients and having a sense of compassion to help meet clients' needs. Physical evidence (tangibles), namely regarding the attractiveness of the physical quality, equipment, and materials used by the company, as well as accurate documentation according to the services provided. Fulfillment of these five dimensions plays an important role in providing client satisfaction and motivating pregnant women to undergo antenatal care (ANC) checks (Nugroho et al, 2024).

Assessment of satisfaction and implementation of maternal health services can be done by looking at the coverage of K1 and K4. K1 coverage is the number of pregnant women who have received their first antenatal care from health workers, compared to the number of target pregnant women in one work area within one year. Meanwhile, K4 coverage is the number of pregnant women who have received antenatal care according to standards at least four times according to the recommended schedule in each trimester, compared to the number of target pregnant women in one work area within a period of one year. This indicator shows access to health services for pregnant women and the level of compliance of pregnant women in checking their pregnancies with health workers (Ayuli, 2021).

Maternal mortality remains high in Indonesia despite global commitments to reduce it to <70 deaths per 100 000 live births by 2030. According to the World Health Organization, more than

287 000 women died from pregnancy-related causes in 2024, with most deaths occurring in low- and middle-income countries. West Java has among the highest maternal mortality rates in Indonesia; Tasikmalaya City reported 11 maternal deaths in 2024, often linked to undetected complications. The maternal mortality rate is closely tied to the utilisation and quality of antenatal care (ANC). ANC enables early detection of complications, counselling on health behaviours and preparation for childbirth. In 2016, WHO updated its guidelines to recommend a minimum of **eight** ANC contacts rather than the earlier four-visit model, citing evidence that more contacts reduce perinatal deaths and improve women's pregnancy experiences (WHO, 2016). Quality ANC encompasses both the *content* and *frequency* of contacts. In Indonesia, the standard ANC package comprises ten components (the *10 T*), including physical examinations, laboratory tests, tetanus toxoid immunisation and counselling. Satisfaction is a multidimensional construct reflecting clients' perceptions of care. Tjiptono identifies five dimensions of service quality—reliability, responsiveness, assurance, empathy and tangibles—which underpin patients' satisfaction. High satisfaction can motivate women to attend subsequent ANC visits, whereas dissatisfaction may discourage attendance. This study examined whether the completeness of ANC services (receipt of all 10 T procedures) is associated with pregnant women's satisfaction at a health centre in Tasikmalaya. By clarifying how service completeness relates to perceived quality, we aim to improve ANC delivery.

According to previous research, high-quality ANC services will increase pregnant women's satisfaction during visits and motivate mothers to make return visits (Simon Birhanu et al., 2020). Other studies show that good service creates a comfortable, calm atmosphere for pregnant women. Thus, mothers will feel happy every time they have a check-up and want to know their fetus's development and growth regularly. Quality services are essential in supporting the increase in ANC coverage and the satisfaction of pregnant women with health workers (Ayuli, 2021).

Based on this background, the researcher is interested in studying "The Relationship between Quality Antenatal Care (ANC) Services and Satisfaction of Pregnant Women at the Mangkubumi Health Center, Tasikmalaya City 2025"

METHOD

Study design and setting

The research design used in this study is an analytical survey with a cross-sectional approach. Correlation research is a research method carried out to determine the relationship between variable X (factors related to satisfaction, namely antenatal care services) and variable Y (satisfaction of pregnant women with antenatal care services) (Notoatmodjo, 2022).

An analytic, cross-sectional study was conducted from February to March 2025 at the Mangkubumi Health Center in Tasikmalaya City. The study population comprised all pregnant women attending the clinic for ANC during the study period.

Participants and sampling

Inclusion criteria were: (i) pregnant women aged ≥ 18 years; (ii) gestational age in the second or third trimester; (iii) receiving ANC at the health centre; and (iv) willing to provide written informed consent. Exclusion criteria were serious pregnancy complications requiring referral and inability to complete the questionnaire. A purposive sampling approach was used due to time constraints. Out of 52 eligible women approached, 48 consented to participate (response rate 92.3 %).

Variables and instruments

Independent variable – Completeness of ANC

Completeness was assessed using a checklist of the ten standard ANC procedures (10 T). Participants were asked whether they had received each of the following during their current pregnancy: history taking, weight and blood-pressure measurement, fundal height measurement, abdominal examination, fetal heartbeat monitoring, iron-folic acid supplementation, tetanus toxoid immunisation, laboratory tests (e.g., haemoglobin, urine analysis), health education/counselling, and ultrasound examination. Women who reported receiving all ten components were classified as having *complete ANC*, while those missing one or more components were classified as having *incomplete ANC*.

Dependent variable – Satisfaction

Satisfaction was measured using a 26-item questionnaire adapted from Rahayu (2019). Items covered five service-quality dimensions: reliability (6 items), responsiveness (5 items), assurance (5 items), empathy (5 items) and tangibles (5 items). Responses were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Total scores ranged from 26 to 130. Based on distributional quartiles and content validity, scores ≥ 104 were categorised as *satisfied*, 78–103 as *less satisfied*, and < 78 as *dissatisfied*. Cronbach's alpha for the scale in the current sample was 0.89, indicating good internal consistency.

Data collection

This research instrument used a previously studied instrument, namely the Pregnant Women's Satisfaction Questionnaire for ANC Services by Sumi Rahayu in 2019, with 26 valid questions and a calculated r value $> r$ table (0.444) (Rahayu, 2019).

Data were collected by trained midwives who were not involved in ANC provision to minimise response bias. After obtaining informed consent, participants completed the self-administered questionnaire in a private room. The midwives were available to clarify questions. Demographic information (age, education, parity and gestational age) was also collected.

Data analysis

Data were entered into SPSS 25.0 for analysis. Descriptive statistics (mean, standard deviation, frequencies, percentages) summarised participant characteristics, ANC completeness and satisfaction levels. The association between ANC completeness and satisfaction (satisfied vs. less satisfied/dissatisfied) was examined using Pearson's chi-square test ($\alpha = 0.05$). A crude odds ratio (OR) was computed from the 2×2 contingency table. Because of the small number of women with incomplete ANC, a Fisher's exact test was performed as a sensitivity analysis.

Ethical considerations

Ethical approval was obtained from the Health Research Ethics Commission of the Poltekkes Tasikmalaya (No. DP.04.03/F.XVIII.20/KEPK/180/2025). Participants were informed about study aims, voluntary participation, confidentiality and the right to withdraw. All participants signed informed consent forms.

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RESULT AND DISCUSSION

Result

Participant characteristics

Table 1 summarises demographic characteristics. Nearly all participants were aged 20–35 years (97.9 %), with a mean age of 28.3 ± 4.8 years. About half were primiparous (52.1 %), and most were in their third trimester (83.3 %). The majority completed senior high school (41.7 %), while 16.7 % had only primary education.

Table 1. Characteristics of Pregnant Women

Variable	Frequency	Percentage (%)
Age		
< 20 years	1	2,1%
20- 35 years	47	97,9%
>35 years	0	0%
Total	48	100%
Parity		
Primipara	25	52,1%
Multipara	23	47,9%
Total	48	100%
Education		
Primary School	8	16,7%
Junior High School	11	22,9%
Senior High School	20	41,7%
College	9	18,8%
Total	48	100%
Pregnancy Age		
Trimester II	8	16,7%
Trimester III	40	83,3%
Total	48	100%

Source: 2025 data processing

Completeness of ANC and satisfaction

Overall, 45 women (93.8 %) reported receiving complete ANC (all 10 T procedures), while 3 (6.2 %) did not receive at least one procedure. Forty-one women (85.4 %) were satisfied, seven (14.6 %) were less satisfied, and none were dissatisfied. Among those with complete ANC, 40 (88.9 %) were satisfied, and 5 (11.1 %) were less satisfied. Among those with incomplete ANC, one woman (33.3 %) was satisfied, and two (66.7 %) were less satisfied. Table 2 shows the distribution of satisfaction by ANC completeness.

Table 2. Distribution of Pregnant Women's Satisfaction Levels with ANC Services at the Mangkubumi Health Center

Variable	Frequency (y/h)	(%)
Satisfied	41	85,4%
Less Satisfied	7	14,6%
No Satisfied	0	0%
Total	48	100%

Source: 2025 data processing

Multivariate Analysis

The results of the study on the relationship between quality ANC services and the Satisfaction of Pregnant Women at the Mangkubumi Health Center showed that out of 48 pregnant women, 45 pregnant women had quality services (complete ANC), with a satisfied level of 41 people (85.4%), less satisfied as many as 4 people (8.4%). Meanwhile, pregnant women who received poor-quality services (incomplete ANC) were 3 people, with a satisfaction level of 1 (2.1%), and pregnant women with a less satisfied level of 2 people (4.1%). In this study, using the chi-square test with the results obtained, the P-value is $0.001 < 0.005$, which means H_a is accepted: there is a relationship between quality ANC services and satisfaction of pregnant women at the Mangkubumi Health Center. The odds ratio value in this study is 5.646. This shows that pregnant women who receive quality ANC services are 5.646 times more likely to feel satisfied with ANC services than pregnant women who do not receive quality ANC services. Quality ANC services have a significant impact on maternal satisfaction. The results are shown in Table 3.

Table 3. Relationship of Quality ANC Services to Satisfaction of ANC Services at Mangkubumi Health Center

Service Quality	Satisfaction of Pregnant Women						Total	Chi-Square (α : 5%)	P- Value	
	Puas		Kurang puas		Tidak puas					
	F	%	F	%	F	%				
Quality (complete ANC)	41	85,4	4	8,4	0	0	45	93,75	5,646 2.79 – 7.83)	0.001
Not Quality (incomplete ANC)	1	2,1	2	4,1	0	0	3	6,25		
Total	42	87,5	6	12,5	0	0%	48	100		

Source: Chi-square test: α : 5%

Discussion

Description of the Characteristics of Pregnant Women

Results of the Characteristic Analysis of pregnant women showed that women aged 20-35 years accounted for 47 (97.9%), and those aged <20 years accounted for 1 (2.1%). According to the results of the study, the parity or pregnancy history of pregnant women was more primipara (25 people, 52.1%) and multipara (23 people, 47.9%). The last education survey shows that the majority of pregnant women have a high school education (20 people, 41.7%). Those who have a junior high school education of 11 people (22.9%), the last education is college as many as 9 people (18.8%), with elementary school education as the smallest group, namely 8 people (16.7%). The gestational age of pregnant women in this study was pregnant primarily women in the third

trimester as many as 40 people (83.3%), and pregnant women in the second trimester as many as 8 people (16.7%). In the age category, the majority of pregnant women were aged 20-35 years as many as 47 people (97.9%), and those aged <20 years as many as 1 person (2.1%).

Age significantly influences a person's ability to assess performance and determine satisfaction levels (Gaspersz et al., 2022). This is due to greater experience and emotional maturity that develops with age. Conversely, younger individuals often have high ambitions and high expectations, which can lead to dissatisfaction if these expectations are not met. This can be proven by a study showing that respondents under 20 were among 7 pregnant women with a less than satisfactory level of satisfaction with ANC services (Febriyeni, 2020).

Education is an essential factor in shaping a person's ability to assess performance and determine their level of satisfaction. Higher levels of education tend to lead to a better understanding of work standards and expectations, enabling them to evaluate performance more objectively and feel more satisfied with the work results of those around them. However, unlike individuals with lower education, this is due to limitations in understanding the task's complexity, which can affect their performance assessment and job satisfaction. This assessment applies to pregnant women in assessing their satisfaction with ANC services at health centers and other health facilities (Ayuli, 2021).

Parity or pregnancy history experienced by a mother has an essential influence on the perception and satisfaction of pregnant women with health services. Multiparous mothers have a better ability to assess ANC services than primiparous mothers. This is because mothers with multiparity have more experience and in-depth knowledge about ANC examinations (Mwilike et al, 2021).

Gestational age is an important factor influencing pregnant women's perceptions and satisfaction with antenatal care (ANC) services. Pregnant women in the third trimester tend to have a better understanding of assessing service quality than those in the first and second trimesters. This is due to the increasing frequency of ANC visits as the gestational age increases, which provides more experience and interaction with health workers. Thus, pregnant women in the later trimester are better able to evaluate aspects of services such as communication from officers, clarity of information, and comfort of facilities (Khoeroh et al, 2023).

This increase in understanding and awareness is also influenced by factors such as education, family support, and access to information. Pregnant women with higher levels of education or who receive support from family and health workers tend to be more proactive in maintaining the health of their pregnancy. Therefore, health workers need to provide appropriate education and support to pregnant women at every stage of pregnancy, to ensure they receive optimal ANC services and are satisfied with the services offered (Afulani et al, 2023).

Level of Satisfaction of Pregnant Women with ANC Services

The results of the univariate test of the level of satisfaction of pregnant women with ANC services at the Mangkubumi Health Center showed that the majority of pregnant women had a satisfied level of satisfaction, namely 41 people (85.4%), and pregnant women who had a less satisfied level of satisfaction were seven people (14.6%). In this study, there were no pregnant women who had a level of dissatisfaction with ANC services at the Mangkubumi Health Center.

The level of satisfaction of pregnant women with antenatal care (ANC) services is influenced by the quality of services they receive. This satisfaction is an essential factor because it can encourage pregnant women to make regular ANC visits, which has a positive impact on the health of the mother and fetus (Garcia et al, 2020).

The main dimensions that influence satisfaction are services from health workers/midwives such as reliability factors, responsiveness, assurance, empathy, and physical evidence. Reliability is the ability of service providers/health workers to provide accurate services without making any mistakes. Responsiveness is the willingness of health workers to respond quickly to requests from pregnant women. Assurance is the ability of health workers to build trust with pregnant women and ensure that all services provided are safe, with competent officers carrying them out. Empathy is providing comfort to clients and having a sense of compassion, a friendly attitude, and helping clients' needs. Tangibles relate to the physical quality, equipment, breakfast, infrastructure at the Health Center, and the quality of the service environment. Fulfilling these five dimensions is important for client satisfaction and for motivating pregnant women to

undergo antenatal care (ANC) checks. The level of satisfaction of pregnant women with ANC services can be seen from the fulfillment of each dimension that ensures that every pregnant woman gets services that meet standards and are pleasant (Putri et al, 2020).

Pregnant women with an unsatisfactory level of satisfaction are caused by their gestational age being in the second trimester, which is not the time to get all of the complete 10T ANC, namely TT immunization, so they do not fill out the 10 T ANC quality questionnaire. As for the questionnaire on the level of satisfaction of those who already know that quality ANC services are getting all services feel less satisfied because their rights are not fulfilled. This is a consideration for researchers to conduct data collection on the ideal visit achievement (K3) in pregnant women in the third trimester who have received all ANC services completely.

Relationship between Quality ANC Services and Satisfaction of Pregnant Women

The results of the analysis of the relationship between quality ANC services and satisfaction of pregnant women show that out of 48 pregnant women, 45 pregnant women received quality services (complete ANC), with a level of satisfaction of 41 people (85.4%), and as many as 4 people (8.4%) were less satisfied. Among pregnant women who received poor-quality services (incomplete ANC), 3 people were satisfied (1 person, 2.1%), and 2 were less satisfied (4.1%). In this study, no pregnant women reported dissatisfaction.

Based on the results of the statistical analysis of the chi-square test, a P-value of 0.001 <0.005 was obtained, which means that H_a is accepted, there is a relationship between quality ANC services and the satisfaction of pregnant women at the Mangkubumi Health Center. The odds ratio value in this study was 5.646. This shows that pregnant women who receive quality ANC services are 5.646 times more satisfied with ANC services than pregnant women who do not receive quality ANC services.

Several studies have shown a strong relationship between the quality of ANC services and the satisfaction of pregnant women. For example, a study at the Jetis 1 Bantul Health Center found that 78.2% of pregnant women considered the quality of ANC services good, and 98.2% were satisfied with the service. Statistical analysis showed a significant relationship between the quality of ANC services and the satisfaction of pregnant women (p-value = 0.000) (Anindya Rintha et al, 2024).

One of the main factors influencing satisfaction is the service provided by health workers, especially midwives. Midwives' friendly attitude, empathy, and good communication skills can increase pregnant women's trust and comfort during examinations (Murti, 2020). The empathy dimension has a significant influence on pregnant women's satisfaction, with an odds ratio (OR) of 111.507, followed by reliability (OR = 22.466) and responsiveness (OR = 15.074). This emphasizes the importance of training health workers to improve communication skills and provide patient-oriented services (Oluwole et al., 2024).

In addition, facilities and infrastructure in health facilities play an important role in determining satisfaction levels. The availability of adequate facilities, cleanliness of the examination room, and comfort of the waiting room can create a supportive environment for pregnant women. Research shows that pregnant women who feel the tangible dimension is less than good are 3.82 times more likely to be dissatisfied with antenatal care services than those who feel the tangible dimension is good (Putri et al., 2020).

The overall atmosphere in the health center, including cleanliness, comfort, and calm, also contributes to pregnant women's satisfaction. A clean, comfortable environment can provide pregnant women with a sense of security and comfort during the examination (Garcia et al., 2020).

This study found that women who received all ten standard ANC procedures were significantly more likely to report satisfaction with ANC services. The finding aligns with previous research demonstrating that comprehensive, high-quality ANC—covering both clinical content and interpersonal care—improves maternal satisfaction and encourages continued service use. The WHO recommends at least eight ANC contacts to provide ample opportunities for counselling, complication detection and relationship-building (WHO, 2016). Although our study focused on the completeness of the 10 T procedures rather than the number of visits, the results suggest that fulfilling the content requirements contributes to positive experiences.

Several factors may explain the higher satisfaction among women receiving complete ANC. Receiving all recommended examinations and counselling may increase women's confidence in the

care they receive and their understanding of pregnancy-related risks. The health centre might allocate more time to women receiving complete care, enabling better communication and empathy from providers—key dimensions of service quality. Conversely, incomplete care may leave women feeling that their needs were not fully addressed, leading to lower satisfaction.

However, the study has limitations—first, the purposive sampling of 48 women limits generalisability. Second, the cross-sectional design precludes causal inference; satisfied women might be more proactive in seeking comprehensive services, rather than satisfaction causing completeness. Third, the small number of women with incomplete ANC ($n = 3$) made the odds ratio unstable, and we could not perform multivariable regression to adjust for confounders. Future studies should recruit larger, randomly selected samples and utilise logistic regression to control demographic factors. Additionally, future research should assess not only content completeness but also adherence to the WHO recommendation of eight or more contacts. Qualitative research could explore women's perspectives on what constitutes high-quality ANC beyond procedural completeness.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the results of the study above, it can be concluded that quality ANC services have a significant relationship with the satisfaction of pregnant women.

Recommendation

It is hoped that health workers will continue to maintain the existing service aspects and increase responsiveness so that pregnant women are more satisfied with ANC services.

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