

## Original Research Article

# Exploring pregnant women's expectations, perceptions, and satisfaction with antenatal care services in Lumbini province, Nepal: a cross-sectional study

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## ABSTRACT

**Background:** Antenatal care (ANC) plays a crucial role in ensuring the health and well-being of pregnant women by providing regular checkups to identify potential complications and deliver important guidance on pregnancy and childbirth. While the expectations surrounding ANC services are shaped by user's individual needs and preferences, the quality of care experienced is largely determined by the service providers. The level of service quality significantly influences the utilization of ANC service, as women are more likely to use services that satisfied their expectations. This study aimed to assess the expectations, perceptions, and satisfaction levels of pregnant women concerning the ANC services offered by health institutions in Lumbini Province.

**Methods:** An institution-based cross-sectional analytical study was carried out involving 2,986 pregnant women, selected through multistage cluster sampling. Quantitative analysis was carried out to calculate the perception, expectation, and satisfaction score. The SERVQUAL tool was utilized to measure expectation, perception and service quality gap.

**Results:** The study involved 2,986 pregnant women, the majority of whom (76.7%) were aged 20-30 years, 38.5% were Janajati, most of them (32.5%) had a secondary level of education, and 78.8% were housewives. The expectation score was higher than the perception. Overall, only 67% of pregnant women were satisfied with the services.

**Conclusions:** Significant disparities exist between the expectations and actual perceptions of ANC users, indicating a lower level of satisfaction among mothers with the ANC services. The study concluded that decreased satisfaction with the service is likely to reduce the trend of service utilization.

**Keywords:** Expectation, Satisfaction, Antenatal care, Pregnant women

## INTRODUCTION

Maternal health is a critical focused program within Nepal's healthcare system. The Safe Motherhood Program in Nepal aimed at reducing maternal and neonatal morbidity and mortality through preventive measures.<sup>1,2</sup> Antenatal care (ANC) is designed to provide routine

checkups for pregnant women, enabling early diagnosis of complications and delivering vital information about lifestyle, pregnancy, and delivery.<sup>1</sup> Inadequate ANC service quality can result in reduced service utilization<sup>3</sup> with pregnancy complications remaining a leading cause of morbidity and mortality among women in Nepal<sup>1</sup>. Adequate care during pregnancy is essential for both

maternal health and fetal development, as quality healthcare throughout the antenatal, delivery, and postpartum periods can prevent complications and decrease maternal mortality and morbidity.<sup>4,5</sup>

Addressing the expectations of pregnant women is a critical priority for healthcare delivery systems, as satisfaction is largely determined by the perceived quality of service.<sup>6</sup> Many mothers opt for private health facilities over public ones due to lower satisfaction with the latter. Research shows a growing trend of visits to private facilities for maternal and child healthcare in Nepal.<sup>7</sup> The 2018 Health Facility Survey Report revealed that only around 40% of antenatal care (ANC) clients were satisfied with public services.<sup>8</sup> To improve satisfaction, it is essential to consider the expectations of pregnant women during service delivery.<sup>9</sup> Factors contributing to dissatisfaction include poor physical facilities, inadequate audio-visual privacy, insufficient essential drugs and supplies, staff absenteeism, and negative attitudes of healthcare providers.<sup>10</sup> Additionally, the competence of health workers is crucial in bridging the gap between expectations and perceptions of ANC services. A national survey of birthing centers in Nepal found that only half of the nursing staff were certified skilled birth attendants (SBA), and infection prevention practices were notably inadequate among the staff.<sup>11</sup>

Despite improvements in maternal health indicators in Nepal, significant challenges remain in providing quality service and the effective utilization of maternal health services. In the fiscal year 2075/76 (2019), 56% of pregnant women nationwide completed the recommended four antenatal care (ANC) visits. In Lumbini Province, 65% of women achieved this, though eight out of twelve districts fell short of the provincial average. Institutional deliveries accounted for 75% of births, but the percentage of mothers receiving the recommended three postpartum care (PNC) visits dropped from 22% in 2074/75 to 19% in 2075/76. To boost client satisfaction and increase the utilization of maternal health services, public health facilities need to enhance both their service readiness and the quality of antenatal care they offer.<sup>8</sup> Although the promotion of antenatal care services and institutional deliveries in Nepal has been successful, the impact of this rapid increase in service utilization on the quality of care, as well as women's experiences and satisfaction, has not been thoroughly examined.

This study seeks to understand pregnant women's expectations, perceptions, and satisfaction with the care they have received, with the goal of identifying any gaps between expected and perceived service quality. Meeting mothers' expectations with high-quality ANC services could enhance service utilization, reduce maternal and newborn mortality, and contribute to the achievement of the Sustainable Development Goals (SDGs).

## METHODS

### *Study design and setting*

We carried out an institution-based cross-sectional study among pregnant women attending antenatal care (ANC) services at public health institutions in Lumbini Province, Nepal, comprising 12 districts with diverse terrains, including hilly and plains regions. We selected six districts representing both geographic areas. Using a quantitative approach, we assessed the expectations, perceptions, and satisfaction with the ANC services received. The study population was based on an estimated 52,966 pregnancies expected during the fiscal year 2077/78.

### *Study period*

This study was conducted from November 2022 to May 2024.

### *Inclusion criteria*

The study included pregnant women who visited health facilities specifically for antenatal care (ANC) services.

### *Exclusion criteria*

We excluded those who sought care for non-ANC-related reasons, were seriously ill, or were unable to communicate effectively.

### *Sample size and sampling technique*

The sample size was calculated using the following formula.

$$n = \frac{N \times Z^2 S^2}{(N-1)e^2 + Z^2 S^2}$$

$N=52,996$  (the study population),  $S=2$  (SD of mean gap between perception and expectation from a previous study)<sup>12</sup>,  $Z$  corresponds to a 95% confidence interval, and  $e=10\%$  (the margin of error).

The calculated sample size for the study was 1,493 pregnant women, but to account for design effect and ensure statistical reliability, the sample size was doubled to 2,986. A multi-stage cluster random sampling method was used to select health facilities. First, the 12 districts of Lumbini Province were grouped into two clusters, and six districts were randomly chosen. These districts contained 151 public health facilities; each considered a cluster. In the second stage, the 30-cluster method was applied to select facilities, and within each, the number of pregnant women was determined using the proportional to population size (PPS) method.

### Data collection tools

We used a pretested structured questionnaire to collect data on respondents' socio-demographic characteristics and their satisfaction with antenatal care (ANC) services. To evaluate expectations and perceptions of ANC services, we applied the SERVQUAL standard questionnaire, which covers five key dimensions: tangibility, reliability, responsiveness, assurance, and empathy.

### Data analysis

We analyzed the data using SPSS version 25. Frequencies and percentages were used to assess sociodemographic variables, along with satisfaction, perception, and expectation scores. To identify the quality gap, we calculated the difference between the expectation and perception scores. The gap was then analyzed by comparing pregnant women's perceptions and expectations using paired t-tests, with a p-value of less than 0.05 indicating statistical significance.

### Ethical consideration

The study was granted ethical approval by the Nepal Health Research Council, Kathmandu, Nepal. Additionally, formal permissions were obtained from relevant provincial and local authorities. Participants provided informed consent and were assured of their anonymity throughout the research process.

## RESULTS

### Socio-demographic information of the respondents

The study included 2986 pregnant women, with 76.7% aged 20-30 years, 19.2% aged 30-40 years, and 4.1% under 20 years old. The mean age was 25 years, ranging from 17 to 39 years. Among the participants, 38.5% were Janajati, 19.4% were Brahmin/Chhetri, 17.3% were Dalit, 16% were Madhesi, 8% were Muslim, and the rest identified with other ethnic groups. Most participants, 82.6%, were Hindus, followed by Muslims. Decision-making regarding maternal health was primarily in the hands of the father-in-law (45.9%). Only 16.7% of participants made decisions themselves, while 29% reported that their husbands made the decisions, and 7% indicated that the mother-in-law had decision-making power. Additionally, 32.5% of the participants received secondary education. Nearly three-fourths (78.8%) were housewives, followed by 11% who worked in agriculture (Table 1).

### Expectation, perceptions, and associated gaps

The mean score of expectations of the service users on all five dimensions captured in the scale were consistently higher than their perceptions. Hence the gap observed in all five dimensions was statistically significant with p-

value <0.001. The highest expectation was in assurance dimension,  $4.29 \pm 0.53$  whereas highest perception was in empathy dimension,  $3.77 \pm 0.73$ . The gap between the expectation and the perception was observed to be highest for the "tangible" dimension with a negative gap score of -0.89 (95% CI: -0.91, -0.85), whereas the lowest gap was observed in "empathy" dimension with negative gap score of -0.49 (95% CI: -0.52, -0.45) (Table 2).

**Table 1: Socio-demographic information of the respondent.**

Variables	Number (N)	Percent (%)
<b>Age (in years)</b>		
<20	123	4.1
20-30	2290	76.7
>30	573	19.2
Mean= 25 years±4, Minimum= 17 years and Maximum= 39 years		
<b>Ethnicity</b>		
Janajati	1151	38.5
Bhramin/Chhetri	580	19.4
Dalit	517	17.3
Madhesi	478	16.0
Muslim	240	8.0
Others	20	0.7
<b>Religion</b>		
Hindu	2466	82.6
Muslim	331	11.1
Christian	128	4.3
Buddhist	61	2.0
<b>Decision maker in family regarding maternal health</b>		
Father-in-law	1372	45.9
Husband	866	29.0
Own self	498	16.7
Mother-in-law	221	7.4
Other	29	1.0
<b>Educational status</b>		
Non formal	144	4.8
Primary	577	19.3
Lower secondary	272	9.1
Secondary	969	32.5
Intermediate	722	24.2
Bachelor and above	302	10.1
<b>Occupation</b>		
Housewife	2352	78.8
Agriculture	342	11.5
Service (Govt/Pvt)	168	5.6
Labour	117	3.9
Other	7	.2

### Pregnant women's satisfaction in ANC service

Regarding overall satisfaction, about 67% of the participants were satisfied with the service they received,

43.7 % were very satisfied and 23.8% were fairly satisfied. 14.9% of the participants were neutral on service satisfaction, where 17.5% were dissatisfied while receiving the ANC service provided from the health institutions. Almost half (46.4%) of participants were charged fees for services at health institutions. More than

half (57.9%) visited ANC due to previous satisfaction, and 52% planned to return to the same health facility due to satisfaction or lack of alternatives. Additionally, 44.4% would recommend the same institutions to friends (Table 3).

**Table 2: Expectation, perceptions, and associated gaps along service quality dimensions.**

Dimension	Expectation	Perception	Mean Gap (95% CI)	P value
	Mean±SD	Mean±SD		
<b>Tangible</b>	4.28±0.59	3.40±0.55	-0.89 (-0.91, -0.85)	<0.001
<b>Reliability</b>	4.28±0.54	3.58±0.79	-0.70 (-0.73, -0.65)	<0.001
<b>Responsiveness</b>	4.28±0.53	3.60±0.89	-0.59 (-0.62, -0.55)	<0.001
<b>Assurance</b>	4.29±0.53	3.76±0.83	-0.53 (-0.56, -0.49)	<0.001
<b>Empathy</b>	4.27±0.59	3.77±0.73	-0.49 (-0.52, -0.45)	<0.001

**Table 3: Pregnant women satisfaction towards ANC service.**

Variables	Number (N)	Percent (%)
<b>User overall service satisfaction</b>		
Very satisfied	1305	43.7
Fairly satisfied	712	23.8
Fairly dissatisfied	524	17.5
Neither satisfied nor dissatisfied	445	14.9
<b>User charge fee for ANC service</b>		
Yes	1385	46.4
No	1601	53.6
<b>Receive service because of previous satisfaction</b>		
Yes	1728	57.9
No	1258	42.1
<b>Going to visit health institutions in future</b>		
Yes	1552	52.0
No	1434	48.0
<b>Going to suggest friends to visit health institutions</b>		
Yes	44.4	44.4
No	55.6	55.6

## DISCUSSION

The study revealed a significant gap between the expectations and perceptions of pregnant women regarding antenatal care (ANC) services in Lumbini Province, Nepal. Pregnant mothers reported that the services they received fell short of their expectations, particularly noting deficiencies in the physical facilities and the responsibilities of healthcare providers. This gap highlights a persistent quality issue in the healthcare services provided in the region.

All dimensions of service quality exhibited statistically significant differences between perception and expectation, with expectations consistently higher than perceptions. The highest expectation was observed in the

assurance dimension (4.29±0.53), while the highest perception was in the empathy dimension (3.77±0.73). The most substantial gap between expectation and perception was found in the tangible dimension (-0.89). These findings are consistent with previous studies, where the largest gap was also reported in the tangible dimension, with mean gaps of -0.86<sup>13</sup> and -1.59.<sup>14</sup> Other studies have noted gaps in reliability (-0.65), responsiveness (-0.28), and tangibility (-0.17).<sup>12,15,16</sup>

One possible explanation for the observed gap in our study is that pregnant women may place a higher value on providers understanding their feelings and values, with an emphasis on empathy, commitment, and responsibility, rather than just the provision of information.<sup>17</sup> A study in Greece supports this, suggesting that disparities in the expectation-perception gap are more likely due to varied evaluations of service experiences than differing initial expectations.<sup>18</sup> Similarly, research from Iran found that the highest perception was in the responsiveness dimension with a score of 3.6, closely matching our study's score.<sup>19</sup> This indicates a similar level of commitment among service providers across different countries.

Our study found that only 67% of ANC users were satisfied with the services they received, with 52% expressing a willingness to return, and 44.4% recommending the services to others. These results align with previous studies, which reported satisfaction rates of 77.6% and 60.4%.<sup>12,13</sup> For instance, Daprim et al found that 79.3% of users were willing to return to the same institutions, and 77.5% would recommend them. Similarly, Rezarta et al reported a 75% satisfaction rate with hospital services.<sup>20</sup> Other studies have shown even higher rates, with 94.6% of users willing to return and 80% likely to recommend the services. Despite these findings, the satisfaction rate in our study is notably lower, indicating that the service provision in public health institutions in Lumbini Province may require significant improvement.

This study is limited by its exclusive use of quantitative analysis, which overlooks the deeper insights that mixed methods could provide. Additionally, the use of fixed-response options in the interview schedule may have restricted participants' answers, limiting the depth of information gathered. Future research should incorporate mixed methods to gain a more comprehensive understanding of the quality of ANC services.

## CONCLUSION

This study reveals significant disparities between the expectations and actual perceptions of ANC users. This study highlighted that client satisfaction is a key component of quality healthcare, the satisfaction of ANC users will remain unmet until improvements are made across all five SERVQUAL dimensions. Therefore, it is essential to improve the quality of ANC services to better align with the expectations and satisfaction of pregnant women.

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