

Research Article

Client Satisfaction with Antenatal Care and Associated Factors Among Pregnant Women Attending Three Teaching Hospitals in Addis Ababa, Ethiopia: A Cross-Sectional Study

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Background: Antenatal care gives pregnant women a structured point of contact with the health system, and client satisfaction is a key measure of whether that contact is working. Satisfied women are more likely to keep visits, follow advice, deliver in a facility, and recommend the service. Evidence from Addis Ababa teaching hospitals, which differ from primary-level facilities in caseload and case mix, remains limited. This study assessed satisfaction with antenatal care and its associated factors among pregnant women at three teaching hospitals in Addis Ababa.

Methods: A facility-based cross-sectional study included 325 pregnant women at Tikur Anbessa Specialized Hospital, Zewditu Memorial Hospital, and Gandhi Memorial Hospital (December 2024-February 2025), selected by systematic random sampling proportional to each hospital's caseload. Data were collected by interviewer-administered questionnaires adapted from the WHO Maternal Satisfaction on Health Care (Part IV) tool and analysed in SPSS version 26. Satisfaction, measured on 12 Likert-scale items, was dichotomised using a demarcation threshold. Binary logistic regression screened variables at $p < 0.2$ for a multivariable model; associations are reported as adjusted odds ratios (AOR) with 95% CI, significance at $p < 0.05$.

Results: Overall, 177/325 women (54.6%) were satisfied, below the WHO benchmark of 80-90%. Satisfaction was lowest for waiting time (51.1%) and latrine/water adequacy (56.3%), and highest for cost fairness (96.6%). Women on their first antenatal visit were more likely to be satisfied than those on repeat visits (AOR=3.55, 95% CI 1.49-8.42); women with an abortion history were less likely to be satisfied (AOR=0.28, 95% CI 0.16-0.51); and higher-income women were more likely to be satisfied (AOR=2.57, 95% CI 1.35-4.88).

Conclusions: Just over half of participants were satisfied with antenatal care, well below the WHO benchmark. Long waiting times and inadequate sanitation drove dissatisfaction, while abortion history, income, and visit number were independently associated with satisfaction. Expanding outpatient capacity and staffing, improving latrine and water provision, and keeping counselling substantive at every visit could narrow this gap.

Keywords: Antenatal Care, Client Satisfaction, Pregnant Women, Associated Factors, Teaching Hospital, Ethiopia

1. Introduction

Antenatal care is the package of clinical, preventive, and counselling services that trained providers offer to pregnant women and adolescent girls to protect the health of the mother and the fetus throughout pregnancy [1,2]. Beyond its clinical content, the World Health Organization frames antenatal care as an opportunity to give every pregnant woman respectful, individualised care built on sound clinical practice, timely information, and psychosocial support [2]. Delivered well, it lets pregnancy be a positive experience rather than only a period of risk to be managed [1]. Client

satisfaction is a standard yardstick for whether care is meeting this goal. The Robert Wood Johnson Foundation defines it as a measurement of the reports and ratings clients give about the services they received from an organisation, hospital, or provider [3]. It is shaped by what clients expected going in, by how they were treated at the point of care, and by psychosocial factors such as pain or distress that colour their experience [3]. Dissatisfaction, in turn, is linked to poorer recall of medical advice, weaker adherence to treatment, and delay in seeking further care [4]. Women who are satisfied with antenatal care are more likely to keep

later appointments, follow the advice they are given, return to the same facility, and encourage others to attend [4].

Antenatal contact is also a gateway into the wider health system. It is often a woman's first formal contact with maternity services, and a visit that goes well makes her more likely to seek a skilled attendant at birth and to continue into postnatal care [5,6]. The reverse also holds: globally, only about half of pregnant women receive the eight or more contacts recommended by WHO, and dissatisfaction is one of the reasons women disengage from the schedule of visits [3,7]. In Ethiopia, only around one-third of pregnant women complete the recommended number of antenatal visits, and low satisfaction has been identified as a contributor to this shortfall [8]. Attending antenatal care at all is protective: women who attend at least once are more likely to have a skilled attendant at delivery, and studies from Ethiopia link antenatal attendance to reductions of up to 45% in under-five mortality [9,10]. Reported satisfaction with antenatal care varies widely across settings. Surveys have found satisfaction above 80% in India, Ghana, and Iraq in the 70-80% range in Sweden, Malaysia, Nigeria, and Uganda and closer to 50% in Myanmar and in parts of Ethiopia, including Sidama and Debre Tabor [11-20]. Within Ethiopia specifically, reported satisfaction has ranged from 33% in Sidama zone to 83.9% in Tigray and studies attribute this spread to differences in study population, facility level, sample size, and the specific items used to define satisfaction [18,21-23].

Several groups of factors are consistently linked with how satisfied women are. Sociodemographic characteristics such as age, education, and income have been associated with satisfaction in Ethiopian studies, though not always in the same direction [20,24-26]. Obstetric history, including parity, planned or unplanned pregnancy, and prior stillbirth, has also been implicated [24,25]. Service-related factors, particularly waiting time, distance to the facility, and the perceived skill and commitment of the provider, appear repeatedly across settings: women who waited under 30 minutes for care have been two to three times more likely to be satisfied than those who waited longer and provider commitment has emerged as the strongest single predictor of satisfaction in at least one Ethiopian study [24,26-28]. Ethiopia's health sector has invested heavily in expanding antenatal, delivery, and postnatal coverage as part of its strategy to reduce maternal mortality to 70 per 100,000 live births by 2030 [3,5]. Coverage has grown, but quality indicators, including continuity of counselling, syphilis screening, tetanus immunisation, and prevention of mother-to-child HIV transmission, still lag behind coverage figures [3,5]. Because satisfaction is closely tied to whether women return for further visits and follow the advice they are given, it offers a useful, client-centred complement to these coverage statistics [27,29]. Most Ethiopian data on antenatal satisfaction, however, comes from health centres and general hospitals; teaching hospitals, which manage a higher proportion of referred and high-risk pregnancies and operate under different staffing and caseload pressures, are comparatively under-studied. This study assessed the level

of satisfaction with antenatal care and its associated factors among pregnant women attending three teaching hospitals in Addis Ababa, Ethiopia, to help identify where these facilities can act to improve the experience of the women they serve.

2. Methods

2.1. Study Design and Setting

We conducted an institution-based cross-sectional study at three teaching hospitals in Addis Ababa, Ethiopia: Tikur Anbessa Specialized Hospital, Zewditu Memorial Hospital, and Gandhi Memorial Hospital. Addis Ababa, the Ethiopian capital, sits at approximately 2,355 metres above sea level and had an estimated population of 5.46 million in 2023 [30,31]. The city has more than 25 private and 12 government hospitals; the three hospitals in this study were selected because they are affiliated with Addis Ababa University, manage a high volume of deliveries each year, and provide antenatal, intrapartum, and postnatal care. Data were collected between December 2024 and February 2025.

2.2. Study Population

The source population comprised all women receiving antenatal, delivery, or postnatal care at the three hospitals during the data collection period. The study population comprised all women attending antenatal care at these hospitals during the same period. Women aged 18 years or older attending antenatal care at one of the three hospitals were eligible; women who were unable to communicate were excluded.

2.3. Sample Size and Sampling Procedure

The sample size was calculated using the single population proportion formula, based on an antenatal care satisfaction proportion of 74% reported from an institution-based cross-sectional study in Hossana, Ethiopia, a 95% confidence level ($Z=1.96$), and a 5% margin of error [26]. This gave an initial sample of 295 women; adding a 10% allowance for non-response yielded a final sample size of 325. An estimated 2,150 women attended antenatal care across the three hospitals during the study period: 917 (42.4%) at Gandhi Memorial Hospital, 721 (33.5%) at Zewditu Memorial Hospital, and 512 (24.1%) at Tikur Anbessa Specialized Hospital. The total sample was allocated to each hospital in proportion to this caseload. Within each hospital, participants were selected by systematic random sampling using a sampling interval calculated from the expected number of attendees and the hospital's sample allocation; the first participant at each site was chosen by the lottery method, and every k -th eligible woman thereafter was invited to participate.

2.4. Data Collection Instrument and Procedure

Data were collected through face-to-face, interviewer-administered questionnaires. The 12-item, five-point Likert scale used to measure satisfaction (from strongly agree to strongly disagree) was adapted from the WHO Maternal Satisfaction on Health Care (Part IV) instrument, which focuses on antenatal care satisfaction [32]. The sociodemographic and obstetric sections, and the Amharic translation of the instrument, were adapted from comparable

published studies [11,20,26,33]. The questionnaire was pre-tested before use and administered in Amharic. Three general practitioners were trained as data collectors. The principal investigator conducted a half-day training session covering the data collection tool, interview technique, eligibility criteria, the sampling procedure, and ethical considerations. Data collectors obtained informed verbal consent from each participant before beginning the interview.

2.5. Study Variables

The dependent variable was satisfaction with antenatal care, dichotomised as satisfied or dissatisfied. Independent variables were grouped as: sociodemographic factors (age, marital status, religion, educational status, occupation, and monthly household income); obstetric factors (parity, wanted status of the pregnancy, history of abortion, and number of antenatal visits for the current pregnancy); and service- and facility-related factors captured within the satisfaction items themselves (provider communication and courtesy, waiting time, waiting area adequacy, privacy, cost, cleanliness and sanitation, and availability of water and latrines).

2.6. Operational Definitions

Client satisfaction with antenatal care was defined as the extent to which a client's expectations of the service were met, in relation to both provider-related and facility-related factors [26,33]. The level of satisfaction was measured by summing scores across the 12 Likert-scale items (each scored 1-5) and applying the demarcation threshold formula: cut-off point = $\{(\text{maximum possible total score} - \text{minimum possible total score})/2\} + \text{minimum possible total score}$ [26,33]. Respondents scoring above this cut-off were classified as satisfied; those scoring at or below it was classified as dissatisfied [33].

2.7. Data Quality Control

The data collection tool was cross-checked against available facility records before use, and item order was adjusted to improve flow. Completed questionnaires were reviewed daily for completeness during the data collection period, and any incomplete questionnaire was returned to the field for re-administration.

2.8. Data Processing and Analysis

Data were coded, entered, and analysed using SPSS version 26. Descriptive statistics (frequencies and percentages) were used to summarise sociodemographic and obstetric characteristics and item-level satisfaction. Bivariate binary logistic regression was used to screen candidate variables for their association with overall satisfaction; variables with $p < 0.2$ at this stage were entered into a multivariable logistic regression model. Crude odds ratios (COR) and adjusted odds ratios (AOR) with 95% confidence intervals are reported, with statistical significance set at $p < 0.05$.

2.9. Ethical Considerations

Ethical clearance was obtained from the Department Research and Publication Committee of the Department of Obstetrics and Gynecology, Addis Ababa University. Support letters were provided to each participating hospital, and permission to conduct the study was obtained from hospital administration. All participants were informed of the purpose, procedures, benefits, and risks of the study, and of their right to decline or withdraw at any stage, using a standard information sheet. Verbal informed consent was obtained from every participant before data collection began, and responses were kept confidential.

3. Results

3.1. Sociodemographic Characteristics

All 325 women approached agreed to participate, giving a response rate of 100%. Most participants (149, 45.8%) were aged 26-30 years, and 290 (89.2%) were married. Orthodox Christians made up 188 (57.8%) of the sample, followed by Muslim (89, 27.4%) and Protestant (48, 14.8%) participants. Regarding education, 115 (35.4%) had completed primary school, 88 (27.1%) secondary school, and 82 (25.2%) had a tertiary-level education, while 40 (12.3%) had no formal education. Housewives made up half the sample (163, 50.2%), and just over half of participants (175, 53.8%) reported a monthly household income between 5,000 and 10,000 Ethiopian birrs (Table 1).

Variable	Category	N	%
Age (years)	≥25	64	19.7
	26-30	149	45.8
	31-35	74	22.8
	>35	38	11.7
Marital status	Married	290	89.2
	Single	20	6.2
	Divorced	12	3.7
	Widowed	3	0.9
Religion	Orthodox Christian	188	57.8
	Muslim	89	27.4
	Protestant	48	14.8

Educational status	No formal education	40	12.3
	Primary school	115	35.4
	Secondary school	88	27.1
	Tertiary	82	25.2
Occupation	Housewife	163	50.2
	Private employee	95	29.2
	Government employee	51	15.7
	Merchant	16	4.9
Monthly household income (ETB)	<5,000	64	19.7
	5,000-10,000	175	53.8
	>10,000	86	26.5

Table 1: Sociodemographic Characteristics of Pregnant Women Attending Antenatal Care at Three Teaching Hospitals, Addis Ababa, Ethiopia (N=325)

3.2. Obstetric Characteristics

Regarding parity, 74 women (22.8%) were primigravid, 179 (55.1%) had two to five previous pregnancies, and 72 (22.1%) had more than five. Most women, 287 (88.3%), described the current pregnancy as wanted. A history of

abortion was reported by 126 women (38.8%), while 199 (61.2%) had no such history. For the current pregnancy, 73 women (22.5%) were attending their first antenatal visit at the time of interview, and 252 (77.5%) were attending a second or subsequent visit (Table 2).

Variable	Category	N	%
Parity	Primigravida (≤ 1)	74	22.8
	2-5	179	55.1
	>5	72	22.1
Wanted status of current pregnancy	Wanted	287	88.3
	Not wanted	38	11.7
History of abortion	Yes	126	38.8
	No	199	61.2
Number of current ANC visits	1st visit	73	22.5
	≥ 2 nd visit	252	77.5

Table 2: Obstetric Characteristics of Pregnant Women Attending Antenatal Care at Three Teaching Hospitals, Addis Ababa, Ethiopia (N=325)

3.3. Satisfaction with Antenatal Care Services

Satisfaction varied considerably across the 12 individual service items. It was highest for the perceived fairness of the cost charged for the service (314, 96.6%), maintenance of privacy during consultation (304, 93.5%), and provider

communication being easy to understand (292, 89.8%). It was lowest for waiting time, with only 166 women (51.1%) satisfied, and for the cleanliness of the latrine and adequacy of the water supply, with 183 women (56.3%) satisfied (Table 3, Figure 1).

No.	Item	Satisfied N (%)	Not satisfied N (%)
1	Provider greeting was friendly	283 (87.1)	42 (12.9)
2	Waiting time was fair	166 (51.1)	159 (48.9)
3	Waiting area was adequate, with seats	245 (75.4)	80 (24.6)
4	Provider was easy to understand	292 (89.8)	33 (10.2)
5	Cost incurred for the service was fair	314 (96.6)	11 (3.4)

6	Privacy during consultation was maintained	304 (93.5)	21 (6.5)
7	Procedure was clean and sanitary	231 (71.1)	94 (28.9)
8	Antenatal clinic had a clean latrine and adequate water supply	183 (56.3)	142 (43.7)
9	Felt she received full information about ANC today	266 (81.8)	59 (18.2)
10	Wants to continue the rest of ANC follow-up at this facility	290 (89.2)	35 (10.8)
11	Would recommend antenatal care at this facility to others	309 (95.1)	16 (4.9)
12	Happy with the service overall	308 (94.8)	17 (5.2)

Table 3: Satisfaction with Individual Antenatal Care Service Items Among Pregnant Women at Three Teaching Hospitals, Addis Ababa, Ethiopia (N=325)

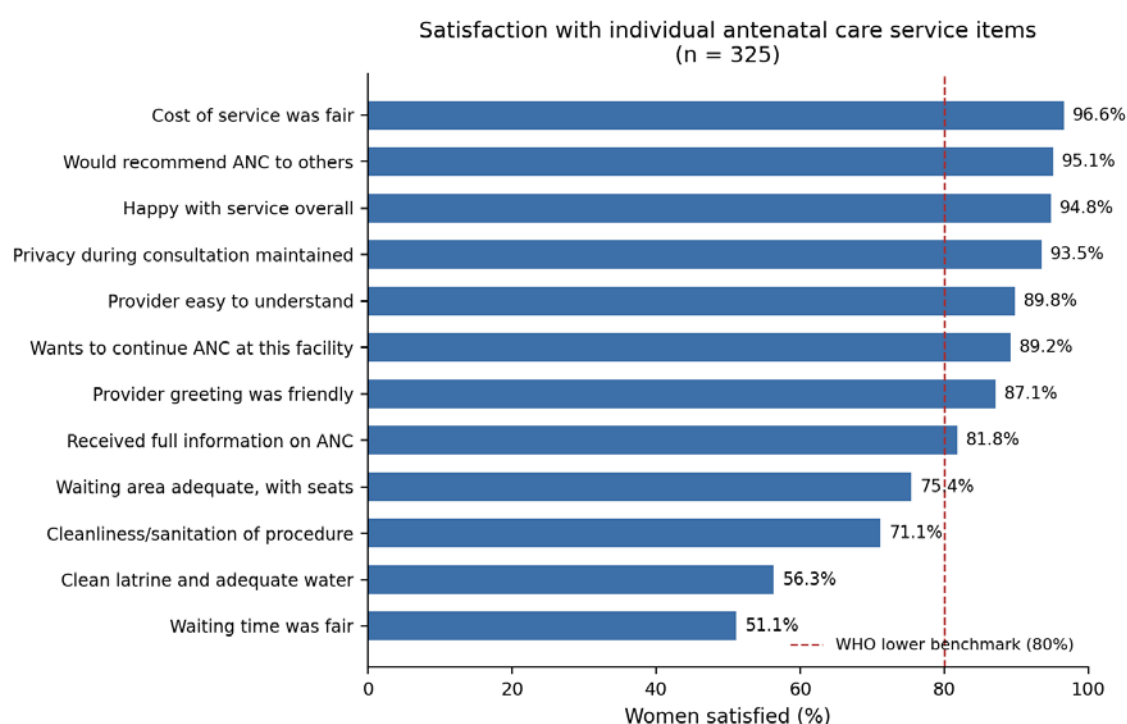


Figure 1: Percentage of Pregnant Women Satisfied with Each Antenatal Care Service Item (n=325). Dashed Line Marks the WHO Lower Benchmark of 80%

Applying the demarcation threshold to the summed Likert scores, 177 of the 325 participants (54.6%) were classified as satisfied with antenatal care overall, and 148 (45.4%) as dissatisfied.

3.4. Factors Associated with Satisfaction with Antenatal Care

In bivariate logistic regression, maternal age, educational status, occupation, monthly income, parity, history of abortion, and number of antenatal visits were associated with satisfaction at $p < 0.2$ and were carried forward into the multivariable model. In the adjusted analysis, three variables remained independently associated with satisfaction: number of antenatal visits, history of abortion, and monthly household income (Table 4).

Three factors remained independently associated with satisfaction after adjustment: number of antenatal visits, abortion history, and household income. Women on their first visit were more likely to be satisfied than those on a second or later visit (AOR=3.55, 95% CI: 1.49-8.42, $p=0.04$). A history of abortion cut the odds of satisfaction by about 70% (AOR=0.28, 95% CI: 0.16-0.51, $p<0.001$). Household income worked in the other direction: women in the higher income bracket were more likely to be satisfied than those earning less (AOR=2.57, 95% CI: 1.35-4.88, $p=0.04$). Age, religion, educational status, occupation, and parity showed no independent association with satisfaction once these factors were accounted for.

Variable	Category	COR (95% CI)	AOR (95% CI)	P-value
Age (years)	18-25	1.40 (0.61-3.23)	0.84 (0.31-2.26)	0.727
	26-30	3.19 (1.51-6.75)*	1.66 (0.69-3.99)	0.259
	31-35	2.82 (1.25-6.37)*	2.63 (0.89-6.27)	0.084
	>35 (ref)	1.00	1.00	-
Religion	Orthodox Christian	0.83 (0.43-1.59)	0.86 (0.38-1.95)	0.716
	Muslim	0.45 (0.22-0.92)*	0.45 (0.18-1.10)	0.080
	Protestant (ref)	1.00	1.00	-
Educational status	No formal education	0.39 (0.17-0.87)*	0.37 (0.12-1.07)	0.067
	Primary school	1.64 (0.92-2.92)	0.91 (0.37-2.24)	0.840
	Secondary school	1.09 (0.60-1.99)	0.60 (0.28-1.29)	0.189
	Tertiary (ref)	1.00	1.00	-
Occupation	Housewife	3.15 (1.05-9.49)*	2.49 (0.60-10.29)	0.207
	Private employee	3.03 (0.97-9.39)	1.50 (0.38-5.96)	0.565
	Government employee	1.54 (0.47-5.09)	0.77 (0.19-3.16)	0.711
	Merchant (ref)	1.00	1.00	-
Monthly household income (ETB)	<5,000 (ref)	1.00	1.00	-
	5,000-10,000	1.90 (1.12-3.49)*	2.34 (0.98-5.57)	0.055
	>10,000	1.82 (0.94-3.19)	2.57 (1.35-4.88)*	0.04
Parity	Primigravida	3.57 (1.79-7.14)*	1.70 (0.63-4.56)	0.296
	2-5	1.40 (0.81-2.43)	1.25 (0.64-2.43)	0.514
	>5 (ref)	1.00	1.00	-
History of abortion	Yes	0.33 (0.21-0.53)*	0.28 (0.16-0.51)*	<0.001
	No (ref)	1.00	1.00	-
Number of current ANC visits	1st visit	3.92 (2.14-7.19)*	3.55 (1.49-8.42)*	0.04
	≥2nd visit (ref)	1.00	1.00	-

Table 4: Factors Associated with Satisfaction with Antenatal Care Among Pregnant Women at Three Teaching Hospitals, Addis Ababa, Ethiopia (Bivariate and Multivariable Logistic Regression)

COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval; ref: reference category. * $p < 0.05$ in bivariate (COR) or multivariable (AOR) analysis.

4. Discussion

This study found that 54.6% of pregnant women attending antenatal care at three teaching hospitals in Addis Ababa were satisfied with the service, below the 80-90% range the World Health Organization considers a marker of good-quality care. This is close to figures reported elsewhere in Addis Ababa (57.6%), in Debre Tabor (53.8%), and in Oman (59%), and higher than figures from Sidama, Ethiopia (33%), Pakistan (46%), and Myanmar (48%) [18-20,31,33-35]. It is lower than figures reported from Jimma (60.4%), Arba Minch (68%), Guji (67%), Harari (70.3%), Hawassa (79.3%), Nigeria (67%), and Uganda (74.3%) [16,24,25,27-29]. Differences of this size across otherwise comparable Ethiopian studies most likely reflect differences in facility level, sample characteristics, and the timing of data collection rather than a single underlying cause, and they underline why satisfaction should be monitored locally rather than assumed from national or regional averages. The item-level

results point to a fairly consistent pattern: women were satisfied with how they were treated during the consultation, but less satisfied with the conditions around it. Satisfaction was high for privacy, provider communication, and the cost of the service, but markedly lower for waiting time and for the cleanliness of latrines and water supply. This distinction between the interpersonal and the environmental components of care has been reported in other Ethiopian studies, and it matters for planning: it suggests that provider-facing training may do less to move overall satisfaction than investment in queue management, staffing levels, and basic sanitary infrastructure.

Women on their first antenatal visit were more likely to be satisfied than those returning for a further visit, a pattern also reported in studies from north-west Ethiopia, where women who had attended only once were around 3.6 times more likely to be satisfied than those with two or more visits [36,37]. A first visit is typically longer and more thorough, since it establishes the pregnancy history and delivers a substantial amount of new information, which may leave a stronger initial impression than the more routine, briefer

contacts that typically follow. If satisfaction genuinely declines over the course of follow-up, this points less to a first-visit effect and more to a gap in what later visits deliver, which providers could address by keeping counselling substantive rather than perfunctory at every contact, not only the first.

A history of abortion was associated with lower satisfaction, consistent with a study from West Shewa zone that reported a similar, though smaller, negative association (AOR=0.19, 95% CI: 0.07-0.49) [38]. Women who have previously lost a pregnancy may carry higher expectations of reassurance and attentiveness into subsequent antenatal visits, and are likely to judge the same standard of care more critically than women without that experience [24]. This suggests a role for more deliberate, and perhaps longer, counselling for women with a prior pregnancy loss, rather than assuming a standard visit will meet their needs. Higher monthly household income was associated with greater satisfaction, in line with evidence that wealth is linked to both antenatal care use and satisfaction with it; in one multi-country analysis, women in the wealthiest quintile were around 2.6 times more likely to attend the recommended number of antenatal visits than poorer women [39]. Income may shape satisfaction indirectly, for instance through the ability to avoid the opportunity costs of waiting, arrange transport, or purchase supplementary medication, as well as through differences in expectations of care. This association is worth flagging for hospitals, since it points to a risk that satisfaction gains from service improvements may accrue unevenly unless the specific barriers facing lower-income women, such as waiting time and out-of-pocket costs, are addressed directly.

4.1. Strengths and Limitations of the Study

This study used face-to-face, interviewer-administered questionnaires, which reduced the risk of participants misunderstanding individual items, and achieved a 100% response rate. It has several limitations. It was conducted at three government-affiliated teaching hospitals, so the findings may not generalise to private facilities or to lower-level government health centres [40-44]. Its cross-sectional design means associations cannot be interpreted as causal, and satisfaction was measured at a single point during a woman's antenatal course rather than tracked across her full pregnancy. Self-reported satisfaction may also be affected by social desirability, particularly given the interviewer-administered format.

5. Conclusions

Just over half of the pregnant women attending antenatal care at these three teaching hospitals in Addis Ababa were satisfied with the service, well below the WHO's 80-90% benchmark. Dissatisfaction was concentrated in waiting time and in the cleanliness of latrines and adequacy of water supply, while satisfaction with interpersonal aspects of care, such as privacy and provider communication, was high. History of abortion, monthly household income, and number of antenatal visits were independently associated with satisfaction. Expanding outpatient department capacity and the number of antenatal care providers, improving latrine and

water infrastructure, and ensuring that counselling remains substantive at every visit, not only the first, are practical steps these hospitals could take to close this gap [45-48]. Because reported satisfaction varies markedly across facility levels and regions, similar studies in other parts of Ethiopia would help clarify how widely these findings apply.

Declarations

Ethics Approval and Consent to Participate

Ethical clearance was obtained from the Department Research and Publication Committee of the Department of Obstetrics and Gynecology, Addis Ababa University. Based on World Medical Association Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Participants all participants provided informed verbal consent before data collection, after being informed of the study's purpose, procedures, and their right to withdraw at any time without consequence for their care was undergone.

Authors' Contributions

BK conceived and designed the study, collected and analysed the data, and drafted the manuscript. SA and NM supervised the study design and data analysis, and critically revised the manuscript for important intellectual content. All authors read and approved the final manuscript.

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