Antenatal care service satisfaction and its associated factors among pregnant women in public health centres in Hawassa city, Southern Ethiopia

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Abstract

Background: Self-reported client satisfaction is vital in order to address service provider and facility-based factors that can be upgraded to maximise antenatal care (ANC) satisfaction and utilisation in service-providing institutions.

Objective: This study aimed to assess ANC service satisfaction and associated factors among pregnant women attending Hawassa city public health centres (HC), Sidama regional state, Southern Ethiopia.

Methods: This health facility–based cross-sectional study was conducted on 422 pregnant women from 14 March to 13 April 2017. Exit interview data were collected from pregnant women attending care service at five randomly selected public HC.

Results: Overall, 79.2% were satisfied with the ANC service. As per specific components, 74.2% of respondents were satisfied with the information provided, and 74.2% were satisfied with the institution’s health care. Respondents who had received iron tablets were 3.2 times more likely to be satisfied than their counterparts (adjusted odds ratio (AOR)=3.2, 95% confidence interval (CI) 1.7–5.9). Pregnant women who were counselled on human immunodeficiency virus infection and its testing were 4.3 times more likely to be satisfied than those who had not received such counselling (AOR=4.3, 95% CI 2.2–8.4). Also, those women who waited ≤30 minutes (AOR=2.6, 95% CI 1.2–5.5) and who received information on foetal movement (AOR=3.5, 95% CI 1.8–6.5) were significantly associated with ANC service satisfaction.

Conclusion: More than 20% of pregnant women were not satisfied with ANC services. This reflects a need for attention in each aspect of health-care service provision in order to assure client satisfaction.

Keywords
Antenatal care, pregnant women, satisfaction, health centres, Hawassa city administration

Introduction

Antenatal care (ANC) is an opportunity to guide pregnant women on how to prepare themselves for pregnancy related health problems and to promote the benefit of skilful attendance at childbirth.1 In addition, ANC is critical to provide an opportunity to give advice on medical as well as social-related issues for pregnant women on how to manage pregnancy-related problems and to endorse the advantage of delivery in health-care facilities with skilled health professionals.2,3 The ANC service has a great role in the reduction of maternal as well as neonatal death.4 In Ethiopia, 16,740 and 15,234 maternal deaths occurred in 1990 and 2013, respectively. Of the 15,234 deaths in 2013, 25.7%, 19.6%, 12.2%, 10.3% and 9.6% were due to complications anaesthesia, embolism, air, amniotic fluid, and blood clot and peripartum cardiomyopathy and to complications of abortion, maternal haemorrhage, hypertensive disorders, maternal sepsis and other maternal infections, respectively.5 More than 70% of all maternal deaths are due to five major complications: haemorrhage, infection,
unsafe abortion, hypertensive disorders of pregnancy and obstructed labour.⁶ In addition, anaemia is the foremost reason for morbidity and mortality in pregnant women in low-income countries, including Ethiopia.⁷ According to the 2016 Ethiopian National and Demographic Health Survey (EDHS) report, about 23% of women of reproductive age are suffering from anaemia,⁸ while the prevalence is 30.6% among pregnant women,⁹ and the most common (75%) of all anaemia during pregnancy is due to iron deficiency.¹⁰

Moreover, complications during pregnancy and childbirth greatly increase the chance of maternal mortality rate. From 1990 to 2015, the global maternal mortality ratio was decreased by 44%, with an annual reduction of 2.3% according to United Nations (UN) inter-agency estimates.¹¹ Women’s satisfaction regarding ANC services is crucial and it may vary from facility to facility as well as from country to country, especially in the developing world.¹² In support, ANC service-related poor satisfaction might predispose pregnant women to home delivery rather than the delivery in health-care facilities.¹³ According to the World Health Organization (WHO) report, about 2–8% of pregnant mothers are at risk of developing pre-eclampsia/eclampsia, and this may cause an estimated 9% of maternal deaths in Asia and Africa. Therefore, early case identification, screening and management during ANC visits are ways of lessening poor outcomes linked to pre-eclampsia/eclampsia.¹⁴ According to the 2014–2015 Hawassa city administration public health facility report, there was an institutional maternal mortality rate of 0.28%, and the ANC drop-out rate was 45%, which was higher than the region drop-out rate (25.5%).¹⁵

Data are still scarce on a specific component of ANC services satisfaction in Ethiopia comprising the study area in a specific. Therefore, this study tried to indicate its input through its outcomes.

### Methods

#### Study setting and study population

This health facility–based cross-sectional study was conducted from 14 March to 13 April 2017 in Hawassa city, Sidama regional state, Southern Ethiopia. Hawassa is an administrative city of Southern Nation, Nationalities and Peoples Regional State (SNNPR) and is located 275 km from the capital city of Addis Ababa. Hawassa city administration covers an area of 157.2 km², with eight sub-cities and 32 kebeles. According to the 2015 Ethiopian Central Statistical Agency (CSA), the estimated population number of Hawassa for 2015 was 351,469, with an annual population growth rate of just over 4%.¹⁶ The population is relatively young, with 65% being younger than 25 years of age and around 5.5% older than 50 years of age. Furthermore, in 2015, 170,510 women were living in the city, 12,167 of whom were of reproductive age (i.e. 15–49 years old).¹⁷ Regarding the health-care infrastructure, according to the 2015–2016 city health department report, there are two public hospitals, four private hospitals, 10 public health centres (HC), 15 health posts and 51 private clinics.¹⁸ All pregnant women who attended the ANC service in the selected Hawassa city public HC (Millennium, Alamura, Adare, Tiltte and Gemeto) during the study period were eligible for the study. However, clients who were seriously ill and those who came repeatedly for further consultation were excluded from the study.

#### Sample size and sampling procedure

The sample size was calculated using a single population proportion formula based on the assumptions of a 95% confidence interval (CI), 50% proportion and a 10% non-response rate. Therefore, the total sample size was calculated to be 422.

Out of the 10 public HC, five (Alamura, Millennium, Adare, Tiltte and Gemeto) were selected randomly using the lottery method for exit interview. The allocation of the number of study participants was done by a 1-month review of log-book for ANC flow in each HC. The flow trend indicated the overall 455 cases, and based on this, the required sample size was proportionated to each health facility (Table 1).

An interviewer-administered structured questionnaire was applied to collect socio-demographic and satisfaction-related data through an exit interview. In addition, the data-collection tool was adapted from a handbook developed by the United States Agency for International Development and population council frontiers in 2008.¹⁸ The exit interview questionnaire was translated into Amharic language and vice versa by an independent language teachers in order to assess its consistency.

#### Statistical analysis

Data completeness was visually checked and entered into EPI-INFO v3.5.2. Then, it was exported IBM SPSS for Windows v20 (IBM Corp., Armonk, NY) for statistical analysis. Frequency and percentage were used to describe the study population with different variables. Bivariate and multivariable logistic regression analyses were used to evaluate the differences in the distribution of categorical variables in relation to the study groups. Likewise, variables with p-values <0.25 in the bivariate analysis were candidates to consider.

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**Table 1.** Sample size allocation in selected public health centres in Hawassa city administration (1-month client flow rate in five randomly selected public health centres in Hawassa=455).

| Millennium health centre | Alamura health centre | Adare health centre | Tiltte health centre | Gemeto health centre |
|--------------------------|-----------------------|---------------------|---------------------|----------------------|
| Client flow              | 185                   | 90                  | 90                  | 50                   |
| Factor                   | 185/455 = 0.401       | 90/455 = 0.197      | 90/455 = 0.197      | 50/455 = 0.11        |
| Required sample size     | 0.401×422 = 173       | 0.197×422 = 83      | 0.197×422 = 83      | 0.11×422 = 46        |
| Total                    | 173 + 83 + 83 + 46 + 37 = 422 |
for multivariable analysis, and p-values <0.05 were considered statistically significant at a 95% CI.

Women’s satisfaction with the ANC service was measured using 11 indicator items, with each item having a five-point Likert scale ranging from 1 = ‘very dissatisfied’ to 5 = ‘very satisfied’. The demarcation threshold formula ((total highest score–total lowest score)/2 + total lowest score) was used to set cut points for satisfaction level. Those women who responded to the satisfaction items at or above the threshold cut point were categorised as ‘satisfied’, whereas those who responded below the threshold cut limit were categorised as ‘not satisfied’.19

Data quality control

The quality of data collection was guaranteed by giving training for data collectors (five midwives) and supervisors (two clinical nurses). A pretest was done on 42 (10%) questionnaires in Loke HC which is about 8 km from the nearest study HC, and then all required amendments were made to the questionnaire based on the feedback. In addition, the reliability of the satisfaction-related questions were checked using Cronbach’s alpha (0.898). Nobody was selected from the study health facilities as a data collector/supervisor in order to manage bias during data collection. All the compulsory advice was given to data collectors before the next day’s data collection when mistakes were observed. Furthermore, the Hosmer–Lemeshow goodness-of-fit test was used to observe data quality in the logistic regression model.

Results

Socio-demographic characteristics of pregnant women

A total of 422 pregnant women were approached to participate in the study, of whom 414 agreed to take part (response rate=98.1%). A total of 172 (41.5%) women were from Millennium HC, 80 (19.3%) were from Alamura HC, 83 (20%) were from Adare HC, 44 (10.6%) were from Tilte HC and the rest (35; 8.4%) were from Gemeto HC. More than half (210; 50.7%) of pregnant women were aged between 20 and 29 years. A total of 402 (97.1%) pregnant women were married, and the rest (2.9%) were unmarried or divorced. Concerning the religious distribution, the predominant religions were Protestant (201; 48.6%) and Orthodox (99; 23.9%). The dominant languages were Amharic (258; 62.3%) and followed by Sidamigna (112; 27.1%; Table 2).

Obstetric and reproductive characteristics of pregnant women

Nearly half (47.1%) of respondents were primigravida, and 206 (49.8%) were multigravida. A total of 148 (35.7%) had one child, and 202 (48.8%) had no children. A total of 113 (27.3%) women had a gestational age of 16–24 weeks, while 156 (37.7%) had a gestational age of 25–32 weeks during the exit interview visit. Regarding ANC follow-up, 21.7%, 36%, 23.4% and 18.8% of women had visited the HC for once, twice, three times, and greater than or equal to four times, respectively (Table 3).

Table 2. Socio-demographic characteristics of pregnant women at selected health facilities in Hawassa city administration, Sidama regional state, from March to April 2017.

| Variables                      | Category       | Frequency | Percentage |
|--------------------------------|----------------|-----------|------------|
| Age of pregnant women         | 15–19 years    | 40        | 9.7        |
|                                | 20–34 years    | 372       | 89.9       |
|                                | >35 years      | 2         | 0.5        |
| Residence                      | Urban          | 353       | 85.3       |
|                                | Rural          | 61        | 14.7       |
| Marital status                 | Married        | 402       | 97.1       |
|                                | Unmarried      | 10        | 2.4        |
|                                | Divorced       | 2         | 0.5        |
| Educational status             | No formal education | 51    | 12.3       |
|                                | Primary education (grade 1–8) | 164 | 39.6       |
|                                | Secondary education (grade 9–12) | 143 | 34.5       |
|                                | Tertiary education (>diploma) | 56  | 13.5       |
| Religion                       | Protestant     | 201       | 48.6       |
|                                | Orthodox       | 99        | 23.9       |
|                                | Muslim         | 88        | 21.3       |
|                                | Catholic       | 25        | 6.0        |
|                                | Others         | 1         | 0.2        |
| Occupation                     | Government employee | 54  | 13.0       |
|                                | Merchant       | 73        | 17.6       |
|                                | Daily labourers | 44        | 10.6       |
|                                | Housewife      | 208       | 50.2       |
|                                | Students       | 29        | 7.0        |
|                                | Farmers        | 6         | 1.5        |
| Monthly household income in ETB| <1000          | 24        | 5.8        |
|                                | 1001–2000      | 125       | 30.2       |
|                                | 2001–3000      | 83        | 20.0       |
|                                | >3000          | 182       | 44.0       |
| Main communication language    | Amharic        | 258       | 62.3       |
|                                | Sidamigna      | 112       | 27.1       |
|                                | Wolyitigna     | 28        | 6.8        |
|                                | Oromigna       | 7         | 1.6        |
|                                | Others         | 9         | 2.2        |

ETB: Ethiopian birr.

Pregnancy-related aspects of care and preventive services

A total of 357 (86.2%), 314 (75.8%) and 313 (75.6%) women had received information on the danger signs of vaginal bleeding, severe headaches and less or no fetal movement from healthcare providers, respectively. Only 119 (28.7%) and 118 (28.5%) women were advised on breastfeeding and family planning during the visit, respectively. In addition, 95.6% of women received a tetanus toxoid vaccination, and 69.6% received iron tablets. The majority (77.3%) of women were counselled on human immunodeficiency virus (HIV) infection and testing service, while 94.2% of women were diagnosed and knew their HIV result (Table 4).

Women’s satisfaction with the ANC service

Regarding the waiting area, 82.4% were satisfied with the appropriateness of the waiting area, of whom 33.6% were
very satisfied, while 3.6% were dissatisfied. About three-fourths (75.4%) of the women were enthusiastic about inviting relatives or friends to utilise the ANC services in the health facilities, of whom 24.9% showed high willingness to invite their relatives, whereas 6.5% said that they would not initiated to invite relatives or friends to use the services. Furthermore, 318 (76.8%) were satisfied with the ANC service provided, of whom 26.1% and 6% were very satisfied. About three-fourths (75.4%) of the women were enthusiastic about inviting relatives or friends to utilise the ANC services in the health facilities, of whom 24.9% showed high willingness to invite their relatives, whereas 6.5% said that they would not be satisfied with the ANC services (Table 5).

The overall satisfaction of pregnant women was classified as not satisfied or satisfied. A total of 328 (79.2%) of the respondents were satisfied with the services provided by health-care professionals. However, the rest (20.8%) were unsatisfied with the service provided. Regarding component-based satisfaction, 307 (74.2%) of the respondents were satisfied with the information provided by health-care providers, 307 (74.2%) were satisfied with the institutional aspect (cleanliness of the health facility) and 324 (78.2%) were satisfied with the privacy during a clinical examination. However, 49.5% of pregnant women were not satisfied with waiting time (Figure 1).

Factors associated with pregnant women’s satisfaction with the ANC service

Both bivariate and multivariate binary logistic regression analyses were applied to assess factors associated with satisfaction levels among pregnant women. In the bivariate analysis, gestational age, antenatal visit, receiving iron tablets, information on sexually transmitted infections, HIV counselling and testing, receiving ANC information material, an accompanying partner, advice on health facility delivery, receiving information on foetal movement and information on insecticide-treated bed net (ITN) utilisation were predictors of ANC services.

In multivariable logistic regression analysis, women who had received iron tablets were 3.2 times more likely to be satisfied than their counterparts (adjusted odds ratio (AOR)=3.2, 95% CI 1.7–5.9). HIV counselling and testing (AOR=4.3, 95% CI 2.2–8.4) and waiting times of ≤30 minutes (AOR=2.6, 95% CI 1.2–5.5) were significantly associated with being satisfied with ANC services. In addition, accessing information regarding foetal movement (AOR=3.5, 95% CI 1.8–6.5) and information on ITN utilisation (AOR=3.0, 95% CI 1.4–6.5)) were also significantly associated with being satisfied with ANC services (Table 5).

Discussion

Patient satisfaction is accepted as one of the indicators of a health-care service, and it favours or limits the utilisation of a health-care service in a certain health institution. In addition, the satisfaction level of patients highlight the breach between health-care service providers and the anticipation of patients. Therefore, the client who is satisfied with the health-care service provided will keep using the service at a particular health institution, and this might eventually help pregnant women to complete their ANC service follow-up schedule correctly.

The overall level of pregnant women’s satisfaction with the ANC service at selected public HC of Hawassa city administration was 79.2%. This finding was comparable with studies.

### Table 3. Obstetric characteristics of pregnant women at selected health facilities in Hawassa city administration, Sidama regional state, from March to April 2017.

| Variable               | Category | Frequency | Percentage |
|------------------------|----------|-----------|------------|
| Number of pregnancies  | 1        | 195       | 47.1       |
|                        | 2–4      | 206       | 49.8       |
|                        | 5–6      | 11        | 2.7        |
|                        | >6       | 2         | 0.5        |
| Number of children     | 1        | 148       | 35.7       |
|                        | 2–4      | 66        | 15.9       |
|                        | 5–6      | 4         | 1.0        |
|                        | No children | 202   | 48.8       |
| Gestational age at this visit | <16 weeks | 33   | 8.0        |
|                        | 16–24 weeks | 113  | 27.3       |
|                        | 25–32 weeks | 156  | 37.7       |
|                        | >32 weeks | 112      | 27.1       |
| Number of ANC visit    | First    | 90       | 21.7       |
|                        | Second   | 149      | 36.0       |
|                        | Third    | 97       | 23.4       |
|                        | Fourth and above | 78 | 18.8       |
| Gestational age at the initial visit | <16 weeks | 174 | 42.0       |
|                        | 16–24 weeks | 214  | 51.7       |
|                        | 25–32 weeks | 21   | 5.1        |
|                        | >32 weeks | 3        | 0.7        |
|                        | Unknown  | 2         | 0.5        |

ANC: antenatal care.

### Table 4. Pregnancy-related and preventive measure information provision status of pregnant women at selected health facilities in Hawassa city administration, Sidama regional state, from March to April 2017.

| Delivered activities                  | Frequency |
|---------------------------------------|-----------|
| Information on severe headaches       | 314       | 75.8     |
| Information on vaginal bleeding       | 357       | 86.2     |
| Information on a sudden gush of water in the vagina | 353 | 85.3     |
| Information on fever                  | 253       | 61.1     |
| Information on severe abdominal pain  | 292       | 70.5     |
| Information on fast or difficult breathing | 212   | 51.2     |
| Information on foetal moving less or not moving at all | 313 | 75.6     |
| Information on swelling in the face, hands and legs | 314 | 75.8     |
| Information on birth preparedness and emergency plan | 234 | 56.5     |
| Information on the importance of iron tablets | 218 | 52.7     |
| Received iron tablets                 | 288       | 69.6     |
| Received TT vaccination               | 397       | 95.9     |
| Information on breastfeeding          | 119       | 28.7     |
| Information on family planning        | 118       | 28.5     |
| Information on HIV testing            | 320       | 77.3     |
| Tested for HIV                        | 390       | 94.2     |
| Information about syphilis            | 231       | 55.8     |
| Advised on ITN utilisation            | 176       | 42.5     |

TT: tetanus toxoid; HIV: human immunodeficiency virus; ITN: insecticide-treated bed nets.
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Figure 1. Satisfaction of pregnant women with different factors of ANC services at selected public health facilities in Hawassa city administration, Sidama regional state, from March to April 2017.

Table 5. Factors associated with satisfaction of pregnant women with ANC services at selected health facilities in Hawassa city administration, Sidama regional state, from March to April 2017.

| Explanatory variables               | Frequency (%) | Satisfied | Dissatisfied | COR (95% CI) | AOR (95% CI) |
|-------------------------------------|---------------|-----------|--------------|--------------|--------------|
| Gestational age                     |               |           |              |              |              |
| <16 weeks                           | 17 (4.1)      | 16 (3.9)  | 0.2 (0.08–0.45)** | 1.2 (0.3–5.8) |
| 16–24 weeks                         | 88 (21.2)     | 25 (6.0)  | 0.63 (0.32–1.245) | 2.6 (0.92–7.1) |
| 25–32 weeks                         | 128 (30.9)    | 28 (6.8)  | 0.82 (0.42–1.6) | 1.5 (0.59–3.8) |
| >32 weeks                           | 95 (22.9)     | 17 (4.1)  | 1.00         | 1.00         |
| Number of ANC visit                 |               |           |              |              |              |
| One                                 | 125 (30.2)    | 19 (4.6)  | 3.8 (1.9–7.8)** | 2.1 (0.7–6.0) |
| Two                                 | 84 (20.3)     | 26 (6.3)  | 1.9 (0.9–3.7) | 0.93 (0.33–2.6) |
| Three                               | 81 (19.6)     | 19 (4.6)  | 2.5 (1.2–5.1)* | 1.5 (0.52–4.4) |
| Four                                | 38 (9.2)      | 22 (5.3)  | 1.00         | 1.00         |
| Received information on vaginal bleeding |      |           |              |              |              |
| Yes                                 | 305 (73.7)    | 52 (12.6) | 8.7 (4.7–15.9) | 1.8 (0.8–4.2) |
| No                                  | 23 (5.5)      | 34 (8.2)  | 1.00         | 1.00         |
| Received iron tablets               |               |           |              |              |              |
| Yes                                 | 247 (59.7)    | 36 (8.7)  | 4.2 (2.6–6.9)** | 3.2 (1.7–5.9)** |
| No                                  | 81 (19.6)     | 50 (12.1) | 1.00         | 1.00         |
| Received TT vaccination             |               |           |              |              |              |
| Yes                                 | 317 (76.6)    | 80 (19.3) | 2.2 (0.77–6.0) | 2.0 (0.82–6.5) |
| No                                  | 11 (2.6)      | 6 (1.4)   | 1.00         | 1.00         |
| Received information on STI         |               |           |              |              |              |
| Yes                                 | 200 (48.3)    | 31 (7.5)  | 2.8 (1.7–4.5)** | 1.0 (0.5–2.1) |
| No                                  | 128 (30.9)    | 55 (13.3) | 1.00         | 1.00         |
| Received HIV counselling and testing |           |           |              |              |              |
| Yes                                 | 248 (59.9)    | 36 (8.2)  | 8.9 (5.2–15.2)** | 4.3 (2.2–8.4)** |
| No                                  | 44 (10.6)     | 50 (12.1) | 1.00         | 1.00         |
| Waiting time                        |               |           |              |              |              |
| ≤30 minutes                         | 112 (27.1)    | 14 (3.4)  | 2.7 (1.4–4.9)** | 2.6 (1.2–5.5)* |
| >30 minutes                         | 216 (52.2)    | 72 (17.4) | 1.00         | 1.00         |
| Received ANC information materials  |               |           |              |              |              |
| Yes                                 | 55 (13.3)     | 5 (1.2)   | 3.0 (1.1–7.7)* | 1.5 (0.47–4.5) |
| No                                  | 277 (66.9)    | 81 (19.6) | 1.00         | 1.00         |
| Accompanied by partner              |               |           |              |              |              |
| Yes                                 | 143 (34.5)    | 12 (2.9)  | 4.8 (2.5–9.1)** | 4.9 (2.3–10.7)** |
| No                                  | 185 (44.7)    | 74 (17.9) | 1.00         | 1.00         |
| Advised on health facility delivery |           |           |              |              |              |
| Yes                                 | 178 (42.9)    | 22 (5.3)  | 3.4 (2.0–5.9)** | 0.8 (0.37–1.7) |
| No                                  | 150 (36.2)    | 64 (15.5) | 1.00         | 1.00         |
| Received information on foetal movement |       |           |              |              |              |
| Yes                                 | 276 (66.7)    | 37 (8.9)  | 7.0 (4.2–11.9)** | 3.5 (1.8–6.5)** |
| No                                  | 52 (12.7)     | 49 (11.8) | 1.00         | 1.00         |
| Advised on ITN utilisation          |               |           |              |              |              |
| Yes                                 | 165 (39.8)    | 11 (3.4)  | 6.9 (3.5–13.5)** | 3.0 (1.4–6.5)** |
| No                                  | 163 (39.4)    | 75 (18.1) | 1.00         | 1.00         |

*p<0.05; **p<0.01; ***p<0.001.
AOR: adjusted odds ratio; CI: confidence interval; COR: crude odds ratio; STI: sexually transmitted infection.
conducted in Nigeria (81.1%). Swedish women (82%) and Gamo-Gofa, Ethiopia (79%). However, the rate was lower than those found in other studies conducted in Nigeria (90% and 98.2%) and in Addis Ababa, Ethiopia (89.2%). Also, several studies conducted in different parts of Ethiopia indicated a lower rates of client satisfaction: 21.5% in the Gamo Gofa zone, 33% in Bursa district, 30.4% in Mizan-Aman, 60.4% in Jimma zone and 52.3% in Bahir Dar. The variations could be attributed to differences in the subjective nature of the pregnant women, the satisfaction indicators utilised and the absence of standard tools for precise classification. In addition, the clients’ expectation and the service they received might have played a significant role in the level of satisfaction.

In the current study, 78.2% of pregnant women were satisfied with privacy during clinical examinations in the ANC room. The finding was consistent with studies conducted in Arba-Minch (78.2%) and Northwest Ethiopia (76.7%). Nearly half (49.5%) of pregnant women were dissatisfied with the waiting times, and 32.6% were not satisfied with the time of consultation. Similarly, the study conducted in Gamo Gofa indicated that 46.2% of the respondents were dissatisfied with the waiting times. However, the satisfaction rate for waiting times was higher than in other studies: 32.6% in Southwest Ethiopia and 11% in Northwest Ethiopia.

The variation may be attributed to pregnant women’s individual opinions and their levels of expectation. In addition, satisfaction with the service might be explained by clients in diverse circumstances in a similar situation, which means some of the clients may focus on the services they needed to be provided regardless of waiting time. Moreover, the variations could be cause for alarm among responsible bodies to upsurge the number of skilled caregivers to manage the burden of clients’ flow, increasing consultation time and reducing waiting times in reception areas.

Further, women who received ANC service within 30 minutes were 2.6 times more likely to be satisfied than those who waited for more than 30 minutes. Likewise, the study conducted in Jimma, Southwest Ethiopia, indicated that 86.4% of pregnant women were satisfied with the waiting times. Pregnant women who received HIV counselling and testing service were 4.3 times more likely to be satisfied than their counterparts. This finding in line with a study conducted in Ghana that indicated the respondents were mainly satisfied with health education that related to HIV.

In the current study, women who received iron tablets were 3.2 times more likely to be satisfied than their counterparts (AOR=3.5, 95% CI 1.8–6.5). This is in line with one study that indicated women who had received iron tablets were less likely to be unsatisfied than those who were not received them (AOR=0.14, 95% CI 0.05–0.3). Furthermore, pregnant women who were given information on foetal status were 3.5 times more likely to be satisfied than their counterparts. It may be that the most important thing for pregnant women is to know about the health condition of their foetus.

Limitations of the study
This study has a number of limitations. First, this was a cross-sectional study, and hence it cannot provide adequate evidence on causality regarding satisfaction and its associated factors. Second, we used only one classification method (demarcation threshold formula) to dichotomise the satisfaction level for assessment. However, a different satisfaction rate might result if other methods such as principal component analysis or at least 75% score of satisfaction items were used. Third, we faced financial constraints to include all health institutions in Hawassa city administration to address the satisfaction pattern of pregnant women regarding ANC service. A different level of satisfaction might be observed if we included all HC. Irrespective of the described limits, this study provides helpful information on client satisfaction in a limited data condition of Ethiopia including the study area.

Conclusion
This study indicated the overall satisfaction of pregnant women concerning ANC service was 79.2%, with more than 20% of pregnant women not being satisfied with the service provided. In addition, pregnant women’s satisfaction can also be influenced by other aspects such as HIV counselling and testing service, waiting time, receiving information on foetal movement, information on ITN utilisation and an accompanying partner. Pregnant women’s satisfaction regarding the ANC service plays a significant role in the women completing their schedule of ANC service follow-up.

Therefore, more efforts are required to scale up the provision of client-centred ANC service to encourage pregnant women to complete the ANC follow-up service. Further, a deep and well-designed study that includes a quantitative as well as a qualitative approach is recommended to address other hidden factors that are associated with client satisfaction in different approaches.

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Authors’ contributions
T.L. hypothesised and designed the study and undertook the data analysis. B.M. was the main adviser throughout the project. Y.A. supported in advising throughout the project. A.TH. did compulsory data analysis and manuscript drafting with an appraisal. All authors read and approved the final version of the manuscript.

Availability of data and materials
The data set for this article is accessible on reasonable request from the corresponding author with the authorisation of Hawassa city, health department office.

Declaration of conflicting interests
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Ethical approval

Ethical clearance was obtained from Jimma University College of Public Health and Medical Sciences ethical committee. A clearance letter obtained from Jimma University and the proposal again submitted to the Hawassa city administration, health department office for the necessary ethical review and research permission. Then, an official supportive letter obtained from Hawassa city administration, health department office was submitted to selected public health facilities. In addition, the protocol of the study was explained to each participant.

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Informed consent

Written informed consent was obtained from study participants or parents/legal guardians for those who were younger than 18 years of age. Further, the confidentiality of private information was strictly preserved.

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