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Satisfaction and Associated Factors of Comprehensive Abortion Care Users in Public and Private Health Facilities of Addis Ababa, Ethiopia: Comparative study

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Research Article

Keywords: Abortion care, client satisfaction, service quality, Donabedian framework, private and public facilities

Posted Date: February 26th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-8722105/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

Client satisfaction is a key indicator of healthcare quality and influences continued use of safe abortion services. Despite expanded access to comprehensive abortion care in Ethiopia, evidence comparing client satisfaction and its determinants between private and public facilities is limited. This study aimed to assess and compare satisfaction levels and associated factors among women receiving CAC services in Addis Ababa.

Methods

-A facility-based comparative cross-sectional study was conducted from June 7 to September 9, 2025, among 612 women (306 from private and 306 from public facilities) selected through a multi-stage cluster sampling technique from 18 facilities across three sub-cities. Data were collected via structured, pre-tested questionnaires through exit interviews. Satisfaction was measured using a five-point Likert scale. Data were analyzed using SPSS version 27. Descriptive statistics, comparative tests (Welch's t-test), and multiple linear regression were used, with statistical significance determined at $p < 0.05$.

Results

-The overall mean satisfaction score was 3.62 (SD = 0.87). Clients in private facilities reported significantly higher satisfaction (M = 3.71, SD ± 0.76) than those in public facilities (M = 3.54, SD ± 0.97; $p = 0.015$). Overall, 66.2% of respondents were satisfied, with higher satisfaction in private (70.3%) than in public facilities (62.1%). Major predictors of satisfaction were receiving care in private facilities ($B = 0.070$, $p < 0.001$), being attended by male providers ($B = 0.019$, $p < 0.001$), undergoing medical abortion ($B = 0.015$, $p = 0.008$), being offered family planning ($B = 0.015$, $p = 0.009$), receiving follow-up appointments ($B = 0.014$, $p = 0.001$), and paying moderate service fees ($B = 0.020$, $p = 0.001$). Among service quality domains, access, timeliness, and fairness were the strongest predictors ($B = 0.412$, $p < 0.001$).

Conclusion

This study shows that client satisfaction with comprehensive abortion care (CAC) services in Addis Ababa is strongly influenced by the type of facility. While key aspects of service quality such as accessibility, timeliness, and responsiveness are important in all facilities, their impact varies between private and public health centers. Private facilities may need to focus on cost transparency and patient-centered communication, while public facilities could prioritize improving infrastructure, reducing waiting times, and supporting provider motivation.

Introduction

Abortion is the termination of pregnancy before the 28th week of gestation or when the fetal weight is less than 1,000 grams (1). It can occur spontaneously (miscarriage) or be induced intentionally through medical or surgical procedures. While safe abortions performed under proper medical care are generally free from major complications, unsafe abortions conducted by untrained individuals or in inadequate medical settings —remain a major cause of maternal morbidity and mortality worldwide (2; 3).

Globally, about 210 million women become pregnant each year, with one in ten pregnancies ending in unsafe abortion. Unsafe abortion contributes to approximately 68,000 maternal deaths annually and leaves millions of women with temporary or permanent disabilities (4) .Sub-Saharan Africa bears the greatest burden, with more than three-quarters of abortions occurring under unsafe conditions (5).

In Ethiopia, an estimated 3.27 million pregnancies occur annually, and abortion-especially unsafe abortion-remains a significant public health concern (6).The abortion rate in Addis Ababa is particularly high, reaching up to 92 per 1,000 women of reproductive age (7).Despite the expansion of safe abortion services and improvements in healthcare infrastructure, challenges such as provider attitudes, privacy issues, and variations in service quality persist across both private and government health facilities (8; 9) .

Client satisfaction is a crucial indicator of healthcare quality (10). Satisfied clients are more likely to follow medical advice, attend follow-up visits, and utilize legal services, which is essential in the effort to reduce recourse to unsafe methods and subsequently decrease maternal morbidity and mortality. Dissatisfied clients may avoid legal CAC services and turn to unsafe providers, increasing the risk of complications. In urban areas such as Addis Ababa, private facilities are increasingly providing abortion care; however, existing studies in Ethiopia predominantly assess government facilities, creating a gap in understanding the quality of care provided by private institutions. (11; 12).

The quality of abortion care depends on multiple factors, including provider competency, facility cleanliness, privacy, counseling, availability of logistics, and client–provider interaction (15; 16). These determinants may differ between public and private sectors due to variations in resource allocation, management structure, and service delivery models. Yet, limited evidence exists comparing their influence on client satisfaction across both sectors, which is a critical distinction for targeted quality improvement and resource allocation.

Therefore, this study aims to compare levels of client satisfaction and identify determinant factors affecting comprehensive abortion care services in public and private health facilities in Addis Ababa. The findings will provide evidence to improve service quality, promote equitable access, and support informed decision-making for resource allocation within Ethiopia’s health system.

Methodology and Materials

Study Area and Period

The study was conducted in Addis Ababa, Ethiopia, from June 7 to September 9, 2025. Addis Ababa was selected because it has the largest number of public and private facilities providing comprehensive abortion

care (CAC), making it suitable for comparative analysis. The city has an estimated six million residents, including about 1.1 million women of reproductive age (7).

According to the Addis Ababa Health Bureau, there are 720 private health facilities and 112 government facilities, of which about 75% were accredited to provide CAC services (7). This distribution of accredited facilities in both sectors provided an appropriate setting to compare client satisfaction and associated factors.

Research Design and Approach

A facility-based comparative cross-sectional study design using a quantitative approach was employed to address the research problem and achieve the study objectives. This observational design examines and compares different groups at a single point in time to identify differences between them. In this study, clients from private and government health facilities were surveyed simultaneously, allowing the researcher to observe and compare characteristics and outcomes, client satisfaction score, without manipulating variables.

Study Population

The study population consisted of women aged 15–49 years who received CAC services at the selected government and private health facilities in Addis Ababa during the data collection period (June 7 – September 9, 2025).

Eligibility Criteria

Inclusion Criteria

Women aged 15–49 years who received CAC services at selected facilities during data collection.

Exclusion Criteria

Women who are critically ill or unable to respond to the questionnaire.

Women with gestational age greater than 14 weeks.

Women who have received CAC services previously within the study period (to avoid duplicate response).

Sample Size Determination

The sample size was calculated separately for each objective, and the largest value was selected to ensure adequate power for estimation, comparison, and identification of associated factors.

Objective 1- Proportion estimation

The sample size was determined using the single population proportion formula with a 95% confidence level (Z = 1.96), 5% margin of error (d = 0.05), and an estimated satisfaction proportion of 56.5% from previous studies (11). This yielded an initial sample size of 382. After applying a design effect of 1.5 and adding a 10% non-response rate, the final sample size became 612 participants (306 from public facilities and 306 from private facilities).

Objective 2- Comparative objective

For comparison, the sample size was calculated using the two-independent-means formula, based on mean satisfaction scores and standard deviations from a previous study in Addis Ababa (12). The initial sample size was 41 participants per group, which increased to 62 after applying a design effect of 1.5 and to 68 per group after accounting for a 10% non-response rate, giving a total of 136 participants.

Since the prevalence objective produced the largest sample size, 612 participants were selected as the final sample size and were equally allocated between public and private health facilities (306 each), providing sufficient power for comparative and regression analyses.

Sampling Technique

A multi-stage cluster sampling technique was employed. In the first stage, Addis Ababa was divided into eleven (11) clusters based on its administrative sub-cities. From these, three sub-cities, Yeka, Gulele, and Bole were selected using a simple random sampling method. In the second stage, all health facilities within the selected sub-cities were stratified into public and private categories. From each sub-city, a total of six (6) health facilities—three (3) public and three (3) private, were randomly selected using a simple random sampling technique.

In the final stage, a systematic random sampling technique was applied to recruit the required number of study participants from both public and private facilities within each sub-city. Based on the calculated quotas, recruitment began with a randomly selected first eligible client, followed by the systematic selection of every subsequent client until the facility's quota was achieved. This approach helped minimize selection bias and ensured an even distribution of participants throughout the data collection period. The total sample size of 612 participants was equally divided between public and private health facilities (306 each).

Within each ownership category, the sample was proportionally allocated among the selected facilities based on their average monthly client flow for comprehensive abortion care services.

Study variables

Dependent variable

Client satisfaction among abortion care users.

Independent Variables

Socio-demographic factors: Age, marital status, level of education, type of visit, residence, and occupation.

Provider factors: Gender, competency, attitude, privacy, confidentiality, family planning services, appointment, pain management, and counseling.

Facility factors: Cleanliness, electricity, running water, logistics, and service payment amount.

Operational definitions of variables

User Satisfaction: - The degree to which users perceive that their expectations regarding comprehensive abortion care services such as timeliness, privacy, and provider communication were met, measured using a Likert-scale questionnaire.

Comprehensive Abortion Care Services: - The perceived adequacy of the range of abortion-related services received by users, including counseling, procedures, post-abortion care, and contraceptive guidance, measured using a Likert-scale questionnaire.

Client-Provider Interaction:-The perceived quality of communication, respect, empathy, and privacy experienced during interactions between users and healthcare providers, measured using a Likert-scale questionnaire.

Facility Readiness: - The users' perception of the preparedness of the health facility to deliver abortion care services, including infrastructure, staff availability, equipment, and essential drugs, measured using a Likert-scale questionnaire.

Data Collection Tools, Methods, and Procedures

A structured questionnaire was developed and pretested before data collection. The tool aimed to gather comprehensive information across four key domains influencing client satisfaction with comprehensive abortion care (CAC) services: Socio-demographic characteristics, provider-related factors, facility-related factors, and overall client satisfaction. The satisfaction items were measured using five point scale ranging from 1 = Very Dissatisfied to 5 = Very Satisfied. The questionnaire was adapted from previously published Ethiopian studies that employed validated Likert-based satisfaction instruments. (9; 34). In addition, selected items were adapted from the Ministry of Health's client satisfaction checklist, an unpublished routine service assessment tool, to ensure alignment with national service delivery standards (35). Items were contextually modified rather than copied verbatim.

The questionnaire was initially prepared in English and subsequently translated into Amharic. The accuracy of the translation was ensured through a standard back-translation process (Amharic to English) conducted by an independent translator, verifying semantic and conceptual equivalence.

Before launching the main data collection, the tool was pre-tested on 31 participants (about 5% of the final sample) in Kolfe Sub-City of 15 clients from private and 16 from public facilities. Feedback from the pre-test participants led to minor revisions in the questionnaire. Specifically, several technical terms were clarified and the sequencing of questions was adjusted to improve the flow of the interview. The core structure and the four original domains remained unchanged. The reliability of the satisfaction scale was checked using Cronbach's alpha (α), yielding a value of 0.82, indicating excellent internal consistency.

Data were collected through face-to-face exit interviews conducted immediately after clients received their CAC services. Midwives and nurses served as data collectors. Prior to data collection, all interviewers received onsite orientation on study objectives, ethical considerations, and standardized administration of the questionnaire to ensure uniformity across interviews.

Data Quality Control: - To maintain the accuracy and integrity of the data, important quality assurance measures were implemented throughout the data collection process. Principal Investigator closely supervised daily activities to ensure adherence to ethical standards and proper interviewing procedures.

Each completed questionnaire was checked daily for completeness, accuracy, and logical consistency before acceptance. To minimize data entry errors, a double-entry method was employed using Epi Info version 7.2. The two datasets were then compared, and any discrepancies were identified and corrected before analysis. Continuous supervision, immediate feedback to data collectors, and routine verification of completed forms helped ensure that the collected data were of high quality and suitable for reliable analysis.

Data Processing and Analysis

The collected data were checked for completeness, coded, and entered into Epi Info version 7.2, then exported to SPSS version 27 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize socio-demographic, provider, and facility-related characteristics, as well as client satisfaction scores.

Client satisfaction was primarily analyzed using the mean satisfaction score as a continuous outcome. For descriptive and comparative purposes, satisfaction status was also categorized as satisfied or dissatisfied using of mean satisfaction score as cutting point.

Comparative analysis between private and government health facilities was performed using the mean satisfaction score. Assumptions of the independent-samples t-test were assessed, and due to unequal variances, Welch’s t-test was applied. A Mann–Whitney U test was conducted as a non-parametric sensitivity analysis to confirm consistency of findings. For satisfaction status, the Chi-square test of independence was used, and all assumptions were met.

For regression analysis, data were screened for outliers and inconsistencies. Categorical variables were converted into dummy variables, and major regression assumptions- linearity, independence, and multicollinearity were checked and found acceptable, except one variable higher VIF (18) values (access, timeliness, fairness score) were retained due to their theoretical and policy importance. However, the high VIF warrants caution in interpreting the coefficient for the affected variable.

Mean satisfaction scores for all domains were calculated after confirming instrument reliability (Cronbach's alpha > 0.70). Bi-variate linear regression was used to screen potential predictors ($p < 0.25$), which were included in the final multivariable linear regression model to control for confounding. Variables with $p < 0.05$ in the final model were considered statistically significant, and associations were reported using unstandardized regression coefficients (B) with 95% confidence intervals. The overall goodness-of-fit of the model was assessed using the Adjusted R2 value, which indicates the proportion of total variation in the

dependent variable explained by the predictors. Results were presented in tables, graphs, and narrative form consistent with the study objectives.

Result

Socio-demographic Characteristics of Respondents

A total of 612 women participated in the study, with 306 respondents each from private and public health facilities. The majority of respondents in both groups were between 25–29 years of age, accounting for 109 (35.6%) in private and 110 (35.9%) in public facilities. Nearly one-third of participants 191 (31.2%) were aged 30–34 years, while only 45 (7.4%) were adolescents aged 15–19 years.

Regarding marital status, about two-fifths 261 (42.6%) of the respondents were married, and nearly equal proportions of single 166 (27.1%) and divorced 117 (19.1%) women were represented. A small proportion 68 (11.1%) was widowed.

Concerning educational status, a relatively higher proportion of clients from private facilities had attained college and above education 148 (48.4%) compared to those from public facilities 99 (32.4%). Conversely, illiteracy and primary school education were more common among public facility users (13.1% and 32.0%, respectively) than among private facility clients.

With respect to occupation, 104 (34.0%) of private facility clients were private workers, while 96 (31.4%) of public facility clients were unemployed. Housewives were more common among public facility users 39 (22.2%) than private 68 (12.7%) (Table 1**).**

Table 1
:Socio-demographic Characteristics of respondents receiving comprehensive abortion care services in Addis Ababa, Ethiopia, 2025

Variable	Category	Private CAC user (%)	Public CAC user (%)	Total CAC user (%)
Age	15–19	21 (6.9)	24 (7.8)	45 (7.4)
	20–24	51 (16.7)	75 (24.5)	126 (20.6)
	25–29	109 (35.6)	110 (35.9)	219 (35.8)
	30–34	105 (34.3)	86 (28.1)	191 (31.2)
	35–45	20 (6.5)	11 (3.6)	31 (5.1)
Marital status	Single	84 (27.5)	82 (26.8)	166 (27.1)
	Married	125 (40.8)	136 (44.4)	261 (42.6)
	Divorced	58 (19.0)	59 (19.3)	117 (19.1)
	Widowed	39 (12.7)	29 (9.5)	68 (11.1)
Education level	Illiterate	16 (5.2)	40 (13.1)	56 (9.2)
	Primary school	56 (18.3)	98 (32.0)	154 (25.2)
	Secondary school	86 (28.1)	69 (22.5)	155 (25.3)
	College & above	148 (48.4)	99 (32.4)	247 (40.4)
Occupation	Housewife	39 (12.7)	68 (22.2)	107 (17.5)
	Private worker	104 (34.0)	75 (24.5)	179 (29.2)
	Civil servant	64 (20.9)	66 (21.6)	130 (21.2)
	Unemployed	99 (32.4)	96 (31.4)	195 (31.9)
Residence	Urban	298 (97.4)	291 (95.1)	589 (96.2)
	Rural	8 (2.6)	15 (4.9)	23 (3.8)

Characteristics of Health Care Providers

The majority of abortion care providers in public facilities were midwives 175 (57.2%), whereas in private facilities, the largest proportion was obstetricians 160 (52.3%). Only a small proportion of providers in public facilities were general practitioners 12 (3.9%), compared with 26 (8.5%) in private facilities.

With respect to sex distribution, the proportion of female providers was higher in private facilities 191 (62.4%) than in public facilities 111 (36.3%), while male providers predominated in public settings 195 (63.7%).

Service Characteristics of Respondents

As shown in Table 2 More than half of respondents 336 (54.9%) sought services for spontaneous abortion, with a slightly higher proportion among public facility clients 176 (57.5%) compared to those in private facilities 160 (52.3%). Most clients 395 (64.5%) underwent medical abortion management, while surgical evacuation accounted for about one-third 186 (30.4%) of all procedures.

About two-thirds of respondents, 404 (66.0%), were offered family planning methods after abortion, with no notable difference between facility types. Similarly, a higher proportion of private facility clients, 201 (65.7%), received follow-up appointments compared with 165 (53.9%) of public facility clients. A striking difference was observed in service payment: nearly all public facility clients, 304 (99.3%), received services free of charge, whereas most private facility users, 156 (51.0%), paid between 5,000–10,000 ETB.

Table 2
Service Characteristics of Respondents Receiving Comprehensive Abortion Care Services by Facility Type in Addis Ababa, Ethiopia, 2025.

Variable	Category	Private n (%)	Public n (%)	Total n (%)
Type of abortion	Safe abortion	146 (47.7)	130 (42.5)	276 (45.1)
	Spontaneous abortion	160 (52.3)	176 (57.5)	336 (54.9)
Family planning offered	Yes	201 (65.7)	203 (66.3)	404 (66.0)
	No	105 (34.3)	103 (33.7)	208 (34.0)
Evacuation method	Medical	209 (68.3)	186 (60.8)	395 (64.5)
	Surgical	79 (25.8)	107 (35.0)	186 (30.4)
	Both	18 (5.9)	13 (4.2)	31 (5.1)
Appointment given	Yes	201 (65.7)	165 (53.9)	366 (59.8)
	No	105 (34.3)	141 (46.1)	246 (40.2)
Payment for service- Ethiopian Birr (ETB)	< 5,000 ETB	59 (19.3)	-	59 (9.6)
	5,000–10,000 ETB	156 (51.0)	2 (0.7)	158 (25.8)
	≥ 10,000 ETB	84 (27.5)	-	84 (13.7)
	Free (exempted)	5 (1.6)	304 (99.3)	309 (50.5)

Client satisfaction

The overall mean satisfaction score among all respondents, regardless of facility type, was 3.62 (SD ± 0.87). When stratified by facility type, clients in private health facilities reported a higher mean satisfaction score (M = 3.71, SD ± 0.76), compared to those in public health facilities (M = 3.54, SD ± 0.97) Table 3 .

Table 3
Descriptive Statistics of Client Satisfaction with Comprehensive Abortion Care Services by Facility Type in Addis Ababa, Ethiopia, 2025.

Facility Type	N	Minimum	Maximum	Mean (SD)
Overall	612	1.27	4.97	3.62 (0.87)
Private	306	2.03	4.97	3.71 (0.76)
Public	306	1.27	4.88	3.54 (0.97)

Comparative analysis of satisfaction between facilities

Client satisfaction with comprehensive abortion care services was compared between private and government health facilities using both mean satisfaction scores and satisfaction status.

For the mean satisfaction score, assumptions of the independent-samples t-test were assessed. The dependent variable was continuous and observations were independent. Levene's test indicated unequal variances ($p < 0.01$); therefore, Welch's t-test was applied. A Mann–Whitney U test was also conducted as a non-parametric sensitivity analysis to confirm the consistency of findings. Clients attending private facilities reported a higher mean satisfaction score ($M = 3.71$, $SD = 0.76$) than those attending government facilities ($M = 3.54$, $SD = 0.97$), with a statistically significant difference ($t(575.74) = 2.44$, $p = 0.015$; Cohen's $d = 0.20$).

For the dichotomous satisfaction status (satisfied vs. dissatisfied), the Chi-square test of independence was used. All assumptions were satisfied, including independence of observations and expected cell counts > 5. A higher proportion of clients in private facilities reported being satisfied (70.3%) compared to government facilities (62.1%), and this difference was statistically significant (χ^2 (1, N = 612) = 4.56, p = 0.033).

Together, both analyses indicate that client satisfaction was higher in private health facilities than in government facilities, with small to moderate magnitude of difference Table 4.

Table 4
Comparative Statistics of Client Satisfaction with Comprehensive Abortion Care Services in Addis Ababa, Ethiopia, 2025.

Facility Type	Mean (SD)	Satisfied (%)	Dissatisfied (%)	Total (N)	Chi-square (p-value)
Overall	3.62 (0.87)	405 (66.2%)	207 (33.8%)	612	
Private	3.71 (0.76)	215 (70.3%)	91 (29.7%)	306	$\chi^2(1) = 4.56$, $p = 0.033$
Public	3.54 (0.97)	190 (62.1%)	116 (37.9%)	306	

Associated factors of Client Satisfaction among Abortion Care Services

Associated factors of Client Satisfaction across All Facilities

The overall regression model explained nearly all variability in client satisfaction (adjusted $R^2 = 0.998$), indicating that the included predictors together strongly influenced satisfaction scores.

Several variables were significantly associated with higher satisfaction. Clients attended by male providers reported satisfaction scores higher by an average of 0.019 points compared to those attended by female providers (B = 0.019, p < 0.001). Similarly, receiving a medical abortion method increased satisfaction by 0.015 points (B = 0.015, p = 0.008). Receiving care in a private health facility increased satisfaction by 0.070 points on average (B = 0.070, p < 0.001), highlighting the influence of the service delivery environment. Clients who were given a follow-up appointment also had higher satisfaction scores by 0.014 points (B = 0.014, p = 0.001).

The provision of family planning services during the same visit was linked with a 0.015-point increase in satisfaction (B = 0.015, p = 0.009), while those who paid a service fee between 5,000 and 10,000 ETB reported satisfaction levels 0.020 points higher than those who paid less (B = 0.020, p = 0.001).

Among the service quality domains, Access, Timeliness, and Fairness had the strongest positive effect on satisfaction, with a one-unit increase associated with a 0.412-point rise (B = 0.412, p < 0.001). This was followed by Facility Environment (B = 0.248, p < 0.001), Communication, Privacy, and Consent (B = 0.193, p < 0.001), and Laboratory and Pharmacy Services (B = 0.145, p < 0.001)Table 5.

Table 5
Associated factors of Client Satisfaction with Abortion Care Services across All Facilities in Addis Ababa, 2025.

Variables	Unstandardized B	Coefficients of Std.Error	Standardized Coefficient B	t	Sig.	95.0% CI for B	
						Lower Bound	Upper Bound
(Constant)	− .075	.015		-4.941	.000	− .104	− .045
male dummy	.019	.003	.011	6.126	.000	.012	.026
medical dummy	.015	.006	.008	2.666	.008	.004	.026
private dummy	.070	.005	.040	14.573	.000	.060	.079
appointment given	.014	.004	.008	3.231	.001	.006	.023
fp offered	.015	.006	.008	2.607	.009	.004	.025
paid 5000-1000EBR	.020	.006	.008	3.199	.001	.008	.033
service access, timeliness and fairness score	.412	.006	.508	65.795	.000	.399	.424
Facility environment score	.248	.004	.233	62.240	.000	.239	.256
communication, privacy and consent score	.193	.006	.186	32.741	.000	.182	.204
laboratory and pharmacy score	.145	.005	.152	28.601	.000	.135	.155

Associated factors of Client Satisfaction in Private Facilities

In private health facilities, the multiple linear regression analysis identified Client satisfaction was significantly higher among those attended by male providers (B = 0.022, p < 0.001), clients who underwent the surgical abortion method (B = 0.018, p = 0.003), and those who received care classified as a safe abortion method (B = 0.009, p = 0.018). Receiving a follow-up appointment (B = 0.010, p = 0.027) and paying a service fee within the range of 5,000–10,000 ETB (B = 0.020, p = 0.001) were also associated with a significant increase in satisfaction. Conversely, the analysis revealed a significant negative association with cost more than 10,000 ETB (B = -0.013, p = 0.012).

The Service Quality Domains were collectively the most powerful predictors of client satisfaction. Access, timeliness, and fairness exerted the greatest influence, with a one-unit increase in their composite score associated with a (0.399) point increase in satisfaction (B = 0.399, p < 0.001). This domain was closely

followed by the communication, privacy, and consent score (B = 0.223, p < 0.001), the Facility environment score (B = 0.211, p < 0.001), and finally, service quality around laboratory and pharmacy (B = 0.135, p < 0.001).

These findings demonstrate that while specific client and provider characteristics are influential, the structural and process qualities of service delivery are the strongest drivers of satisfaction in private CAC facilities Table 6.

Table 6
Associated factors of Client Satisfaction with Abortion Care Services in Private Health Facilities, Addis Ababa, 2025.

variables	Unstandardized-B	Coefficient of Std.Error	Standardized coefficient-B	t	Sig.	95.0% CI for B	
						Lower Bound	Upper Bound
(Constant)	.054	.023		2.308	.022	.008	.100
male dummy	.022	.004	.014	5.297	.000	.014	.030
surgical method	.018	.006	.010	2.975	.003	.006	.029
unemployed dummy	− .007	.004	− .004	-1.772	.077	− .015	.001
safe abortion dummy	.009	.004	.006	2.386	.018	.002	.017
appointment given	.010	.005	.006	2.223	.027	.001	.019
paid >10000EBR	− .013	.005	.008	2.521	.012	.003	.024
paid 5000-1000EBR	.020	.006	.008	3.199	.001	.008	.033
service access,timelines and fairness score	.399	.006	.552	65.810	.000	.386	.411
Facility environment factor score	.211	.006	.134	36.68	.000	.200	.223
communication, privacy and consent score	.223	0.007	.231	31.810	.000	.209	.237
laboratory and pharmacy score	.135	.005	.156	28.741	.000	.126	.145

Associated factors of Client Satisfaction in Public Facilities

In public facilities, client satisfaction was positively associated with care provided by midwives (B = 0.007), being offered family planning services (B = 0.025), and follow-up appointments (B = 0.013). Among service

quality domains, access, timeliness, and fairness had the strongest impact (B = 0.396), followed by facility environment (B = 0.293), communication, privacy, and consent (B = 0.157), and laboratory and pharmacy services (B = 0.153). For example, a one-unit increase in the access, timeliness, and fairness score increased satisfaction by 0.396 points, while being offered family planning increased satisfaction by 0.025 points, and care by a midwife increased satisfaction by 0.007 points, holding other factors constant Table 7.

Table 7
Associated factors of Client Satisfaction with Abortion Care Services in Public Health Facilities, Addis Ababa, 2025.

variables	Unstandardized	Coefficient	Standardized	t	Sig.	95.0% CI for B	
	B	Std.Error	Coefficient B			Lower Bound	Upper Bound
(Constant)	− .010	.016		− .639	.524	− .043	.022
midwife profession	.007	.006	.004	1.210	.027	.005	.019
unemployed dummy	.011	.006	.005	1.979	.049	.000	.023
appointment given	.013	.007	.007	1.770	.078	− .001	.027
fp offered	.025	.008	.012	3.130	.002	.009	.041
access, timeliness and fairness score	.396	.011	.452	37.536	.000	.375	.417
Facility environment score	.293	.011	.288	27.533	.000	.272	.314
communication, privacy and consent score	.157	.009	.139	17.833	.000	.140	.175
service quality around laboratory and pharmacy score	.153	.010	.152	15.264	.000	.133	.172

Discussion

Comparative Client Satisfaction

The study found a significant difference in overall client satisfaction between private and public facilities. Clients in private facilities reported higher mean satisfaction scores (M = 3.71, SD ± 0.76) than those in public facilities (M = 3.54, SD ± 0.97). Similarly, a higher proportion of private facility users (70.3%) were satisfied, compared with 62.1% in public facilities ($\chi^2(1, N = 612) = 4.56$, $p = 0.033$). These findings are

consistent with studies by Gizaw (2024), Endalew (2025), and Edua Eboige et al. (2021) (18; 32; 33), which also reported higher satisfaction in private health facilities. The differences are often linked to structural readiness, shorter waiting times, better privacy, and more favorable provider-client ratios in private settings.

This aligns with Donabedian's framework, which suggests that structural factors (like infrastructure), process factors (like provider interactions and timeliness), and outcomes (like patient experience) collectively determine satisfaction. Private facilities tend to perform better in structure and process domains, especially regarding comfort, confidentiality, and individualized attention. However, the difference was moderate, indicating that public facilities still deliver acceptable care despite systemic challenges.

The satisfaction gap also reflects broader inequities in healthcare experiences across facility types in urban Ethiopia. Similar trends have been reported in Nigeria (Olawepo et al., 2022) and Kenya (Mutua et al., 2023) (36; 37), highlighting that structural inequalities, rather than provider competence alone, drive differences in client satisfaction.

Factors Associated with Client Satisfaction

Several factors influenced client satisfaction with CAC services in Addis Ababa. The strongest predictors were facility resource, service timeliness, and perceived fairness in care delivery ($\beta = 0.508$, $p < 0.001$), emphasizing the importance of the process dimension of Donabedian's model. Clients who received timely, coordinated, and equitable care reported higher satisfaction, while long waiting times, overcrowding, and poor triage—especially in public facilities—were common sources of dissatisfaction.

Structural factors also mattered. Cleanliness, comfort, and adequate infrastructure were positively associated with satisfaction, as seen in previous studies by Gebremariam et al. (2018) and Kitila & Yadassa (2019) (26; 31). Clients often link a clean, organized environment with professionalism and safety, reinforcing the need for proper hygiene and privacy, particularly in busy public facilities. Provider-client interactions were another key factor. The behavior, communication, and competence of healthcare providers —especially midwives—significantly influenced satisfaction. Care provided by midwives in public facilities was linked to higher satisfaction ($B = 0.007$, $p = 0.027$), this is possibly due to having specialized trainings in reproductive health and see more abortion and maternal cases which give them higher competency, confidence in managing complications and faster descion making. Male providers were associated with slightly higher satisfaction, which aligns with findings from Ghana and Uganda (29; 30) and suggests that gender perceptions may shape client comfort and trust, further qualitative research is needed to explore gender specific communication and provider-client interaction in abortion care settings.

Service modality and integration also mattered. Clients undergoing medical abortion reported higher satisfaction than those receiving surgical procedures, likely due to the less invasive nature, reduced pain, and greater autonomy of medical abortion. Integration of family planning services within abortion care was associated with higher satisfaction ($p < 0.01$), supporting WHO (2023) recommendations (29) for comprehensive post-abortion counseling and contraceptive provision.

Payment levels influenced satisfaction as well. Moderate payments (5,000–10,000 ETB) were associated with higher satisfaction, while very high payments (> 10,000 ETB) had a negative effect. This "value

perception threshold" suggests that clients view moderate costs as fair but see excessive fees as inequitable. Transparent pricing in private facilities is therefore important for maintaining trust (18; 33).

Socio-demographic factors such as age, marital status, and education had minimal independent effects once service-related factors were considered. This differs from earlier Ethiopian studies, where higher education was linked to lower satisfaction (24; 28). In Addis Ababa, improvements in service delivery may have reduced demographic disparities, indicating that satisfaction is now more strongly shaped by service quality and provider interaction than by client background

Conclusion

This study demonstrates that client satisfaction with comprehensive abortion care (CAC) services in Addis Ababa is strongly influenced by facility type. Although accessibility, timeliness, and responsiveness are important across all settings, their effects differ between private and public facilities. Private facilities generally offer better infrastructure, shorter waiting times, and greater privacy, but client satisfaction is closely tied to affordability and perceived value. Public facilities, despite resource constraints and high client loads, benefit from strong interpersonal care, particularly from midwives who play a central role in shaping client experiences.

By identifying sector-specific determinants of satisfaction, this study provides evidence to guide targeted quality improvement. Private facilities should emphasize cost transparency and patient-centered communication, while public facilities need to improve infrastructure, reduce waiting times, and support provider motivation. Achieving equitable client satisfaction in Addis Ababa requires public facilities to urgently address structural and process-related gaps, alongside sustained quality and compassionate care in the private sector.

Limitations

The cross-sectional design captures client satisfaction at a single point in time, making it difficult to establish cause-and-effect relationships or observe changes throughout the full course of abortion care. Therefore, the results reflect clients' perceptions and experiences only at the time of data collection.

Because comprehensive abortion care is a sensitive topic, social desirability bias may have occurred. Some respondents might have overstated their satisfaction to meet perceived expectations or avoid judgment, which could slightly overestimate satisfaction levels—especially in public facilities, where maintaining anonymity is more challenging.

Another limitation is multicollinearity detected in some of the predictor variables, which might have affected the precision of regression estimates. Even though diagnostic tests were performed and the regression model met general assumptions, this issue should be considered when interpreting the strength and direction of associations.

Another issue is high R^2, which may indicate possible over fitting or shared variance, thus, generalizability should be interpreted with causation.

Additionally, the study focused on facilities in Addis Ababa, an urban setting with better infrastructure and more healthcare providers than many other parts of Ethiopia, so the findings may not fully apply to rural or remote areas where service availability, quality, and client expectations can differ.

Declarations

Human ethics and consent to participate

This study is involving human participants was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Ethical approval

was obtained from the Research and Ethics Board (REB) of Saint Paul hospital millennium medical college with reference number PM23/666 and protocol number of SPHMMC-ERC-092/25. Then it was submitted to Addis Ababa regional health bureau and clearance was obtained. During the data collection, informed consent was obtained from each respondent after explaining the objectives of the study and the rights of the respondent to participate or not in the study.

Consent for publication

I Confirm I give my full consent that I have read and approved the final version of the manuscript and take full responsibility for its content. I affirm that I have the necessary authority to grant this consent and have obtained any required permissions for the publication of this work. Furthermore, I acknowledge that once published, the manuscript will be publicly accessible in print, online, and other formats as determined by the publisher. I confirm that the manuscript does not infringe upon any copyright, confidentiality, or legal obligations. Additionally, I agree that the publisher may make minor editorial modifications, provided they do not alter the integrity of the content.

Competing interest

The authors declare that there are no competing interests.

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Funding

This study did not receive any funding.

Author Contribution

DT designed the study, develop proposal and data collection tool, conducted the data analyses, write summary report and drafted the manuscript.BM advises on proposal development, data collection, analysis, write-up, manuscript development and supervises overall process.BG support collection of data and provide encouragement throughout study period.TG advises on proposal development, data collection, analysis, write-up, manuscript development and supervises overall process.

Acknowledgement

First and foremost, I am grateful to the Almighty Lord for His guidance and strength throughout this study.I would like to express my sincere thanks to my advisors, Dr. Bizatu Mengstu and Mr. Temesgen Geleta, for their valuable guidance, comments, and encouragement during the development of this thesis. My appreciation also goes to the data collectors for their effort, and to all the study participants for their willingness and cooperation. Without their involvement, this research would not have been possible. I am deeply thankful to my family for their continuous support and for providing a peaceful environment that helped me focus on my work. Their love and encouragement have been my greatest motivation.Finally, I would like to thank my friends and colleagues for their support and helpful suggestions throughout the process of writing this thesis.

Data Availability

All the data generated in this study are included in this manuscript. The datasets used and analyzed to produce the current manuscript will be obtained from the corresponding author upon request.

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