

Patients perception of quality eye care service delivery at Menelik II Tertiary Hospital, Addis Ababa, Ethiopia

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ABSTRACT

Background: Patient perception is a critical indicator of health system performance and an essential component of patient centred care.

Objective: This study assessed patients' and caregivers' perceptions of the quality of eye care services and identify factors associated with patient satisfaction.

Methods: A hospital-based cross-sectional study was conducted from September 2025 to January 2026 among adult patients and caregivers with eye conditions. A total of 422 participants were enrolled using systematic random sampling. Data were collected through face to face exit interviews using a WHO-standardized questionnaire assessing effectiveness, efficiency, acceptability, equity, safety, and overall satisfaction. Data were analysed using SPSS version 30. Multivariate logistic regression analysis was performed.

Results: About 56.8% of respondents reported being satisfied with the eye care services, while 73.9% of patients perceived improvement in their eye condition. Only 66.4% participants reported receiving clear explanations regarding diagnosis and treatment. Prolonged waiting times were common, with 81.0% waiting more than one hour (95% CI: 76.9-84.6). Factors independently associated with patient satisfaction were waiting time less than one hour (AOR = 2.8; 95% CI: 1.7-4.6), clear explanation of the disease and treatment (AOR = 3.4; 95% CI: 2.1-5.3), respectful staff behavior (AOR = 2.9; 95% CI: 1.8-4.7), and comfortable environment (AOR = 2.2; 95% CI: 1.4-3.6).

Conclusion: The perceived quality of eye care service is moderate. Addressing prolonged waiting time and strengthening patient-centred communication are essential to improving service quality with little extra resource requirement.

Key words: Quality health care, Quality eye care, Patient satisfaction, Patient perception, Quality framework

INTRODUCTION

While global and national efforts to expand access to eye care services have intensified, the quality of these services as experienced by patients has received comparatively less attention, particularly in Low and Middle Income Countries (LMICs) such as Ethiopia¹. Eye care delivery in these settings is often constrained by limited resources, high patient volumes, prolonged waiting times, and systemic inefficiencies, all of which may negatively affect patient satisfaction and service utilisation^{2,3}. Patient perception of service quality is a key indicator of healthcare system performance and informs quality improvement initiatives^{2,4}. In eye care, patient-centred quality is increasingly recognized as essential for improving adherence to treatment and achieving optimal clinical outcomes^{1,5}.

Menelik II Comprehensive Specialized Hospital in Addis Ababa, provides ophthalmic services to thousands of adult and paediatric patients each year. Despite this high service demand, no structured assessment of patient satisfaction or perceived quality of eye care services has previously been conducted at this facility. Evidence from similar settings indicates that improving technical quality alone is insufficient to achieve high-quality care without addressing patient-centred dimensions such as communication, respect, and involvement in decision-making⁶. Understanding how adult patients and caregivers of paediatric patients perceive the quality of eye care services is therefore essential for identifying service gaps, guiding targeted quality improvement interventions, enhancing patient adherence, and informing hospital management as well as national eye health policy and planning^{7,8}.

This study aimed to assess patients' and caregivers' perceptions of the quality of eye care services at Menelik II Comprehensive Specialized Hospital, to identify factors associated with patient satisfaction, and to evaluate service quality across WHO quality of care domains.

MATERIALS AND METHODS

Study design and population: A hospital-based cross-sectional study was conducted from September 2025 to January 2026 at Menelik II Comprehensive Specialized Hospital, Addis Ababa, Ethiopia. The hospital is the national referral center for ophthalmic care and provides comprehensive outpatient, inpatient, surgical, and subspecialty eye services to a large and diverse patient population. The study population included adult patients receiving eye care services and caregivers of paediatric patients attending the ophthalmology outpatient and inpatient departments during the study period.

Sample size determination: The sample size was determined using the single population proportion formula, assuming a satisfaction proportion of 50% due to the absence of prior similar studies, with a 95% confidence interval and a 5% margin of error.

$$n = \frac{z^2_{\frac{\alpha}{2}} p(1-p)}{d^2}$$

Where:

n = required sample size

Z = 1.96 (95% confidence level)

p = 0.5

d = 0.05

The calculated sample size was 384. After adding a 10% non-response rate, the final sample size became 422 participants.

Sampling technique: A systematic random sampling technique was employed. Based on patient flow during the study period, an average of approximately 2,100 patients attended the ophthalmology services monthly. The sampling interval (k) was calculated as: $K = N/n = 2100/422 = 5$

Accordingly, every 5th eligible patient or caregiver was selected after a randomly chosen starting point within the first five participants each day.

Study variables

The dependent variable: Is patients' perceived quality of eye care service delivery (patient satisfaction).

The independent variables: Include sociodemographic characteristics: age, sex, residence, educational level, and occupation.

Service-related characteristics: Waiting time, accessibility, availability of services, cleanliness of the facility, privacy, and cost of services.

Provider-related factors: Communication, explanation of diagnosis and treatment, staff courtesy, respect, and patient involvement in decision-making.

Operational definitions

Perceived quality of eye care services: The overall judgment by the patient or caregiver regarding the eye care received, including interpersonal, technical, and environmental aspects of care.

Patient satisfaction: The degree to which patients' or caregivers' expectations regarding eye care services were met, measured using a Likert-scale-based WHO patient satisfaction questionnaire.

High satisfaction: An overall satisfaction score $\geq 75\%$ or responses indicating "satisfied" or "very satisfied" across most service domains.

Low satisfaction: An overall satisfaction score $< 75\%$ or responses indicating "neutral," "dissatisfied," or "very dissatisfied" on key service domains.

Caregiver: A parent or legal guardian accompanying and providing consent for a paediatric patient (under 18 years).

Data collection procedure

Data were collected using a WHO patient satisfaction questionnaire adapted from the WHO Quality of Care Framework and the SERVQUAL model. The questionnaire assessed multiple dimensions of service quality, including effectiveness, efficiency, acceptability, equity, safety, waiting time, communication, provider behavior, cleanliness of the facility, privacy, patient involvement, and overall satisfaction. The tool was adapted to the local context and pre-tested on 5% of the sample at a similar facility, and internal consistency was assessed using Cronbach's alpha (≥ 0.7 considered acceptable). Trained data collectors conducted face to face exit interviews in a private setting after patients completed their consultation or were discharged. Informed consent was obtained prior to data collection, and data collectors provided clarification, when necessary, without influencing participants' responses.

Qualitative component

A qualitative component was included through open-ended questions embedded in the questionnaire,

allowing participants to describe positive experiences and challenges in their own words. Responses were thematically analyzed manually, and key themes were summarized to complement quantitative findings.

Data quality assurance

- Data collectors and supervisors received training prior to the commencement of data collection.
- Continuous supervision was conducted throughout the data collection period.
- Completed questionnaires were reviewed daily for completeness and consistency.

Data processing and analysis

Data were coded and entered into EpiData version 4.6 and exported to SPSS version 30 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations used to summarize participant characteristics and satisfaction levels.

Bivariate analysis using the chi-square test was conducted to identify factors associated with patient satisfaction. Variables with a p-value <0.25 in bivariate analysis were entered into a multivariate logistic

regression model. Statistical significance was declared at $p < 0.05$.

Ethical considerations

Ethical clearance obtained from the Institutional Review Board of Addis Ababa University, Department of Ophthalmology. Informed consent obtained from all participants prior to data collection. Confidentiality was ensured by excluding personal identifiers, and participation was voluntary.

RESULTS

Socio-demographic characteristics of participants

A total of 422 participants included in the study. Among these 302 (71.6%) were adult patients receiving eye care services, while 120 (28.4%) were caregivers accompanying paediatric patients. The mean age of adult participants was 44.8 ± 15.6 years. Male participants constituted 214 (50.7%), showing an almost equal gender distribution. Regarding place of residence, 258 (61.1%) participants were urban residents. Fifty three percent of study participants were illiterate (Table 1).

Table 1: Socio demographic characteristics of study participants

Variable	Category	Frequency (n)	(%)
Sex	Male	214	50.7
	Female	208	49.3
Age in years	18-39	68	16.1
	40-49	160	37.9
	50-59	108	25.6
	≥ 60	86	20.4
Educational level	Illiterate	146	34.6
	Read and write	78	18.5
	Primary education	63	14.9
	Secondary education	95	22.5
	College and above	40	9.5
Residence	Urban	258	61.1
	Sub-urban	115	27.3
	Rural	49	11.6
Occupation	Government employer	116	44.4
	Farmer	98	27.8
	Merchant	72	13.2
	Housewife	66	8.5
	Daily laborer	42	3.9
	Student	28	2.2
Total		422	100

Perception of quality of eye care services by domain

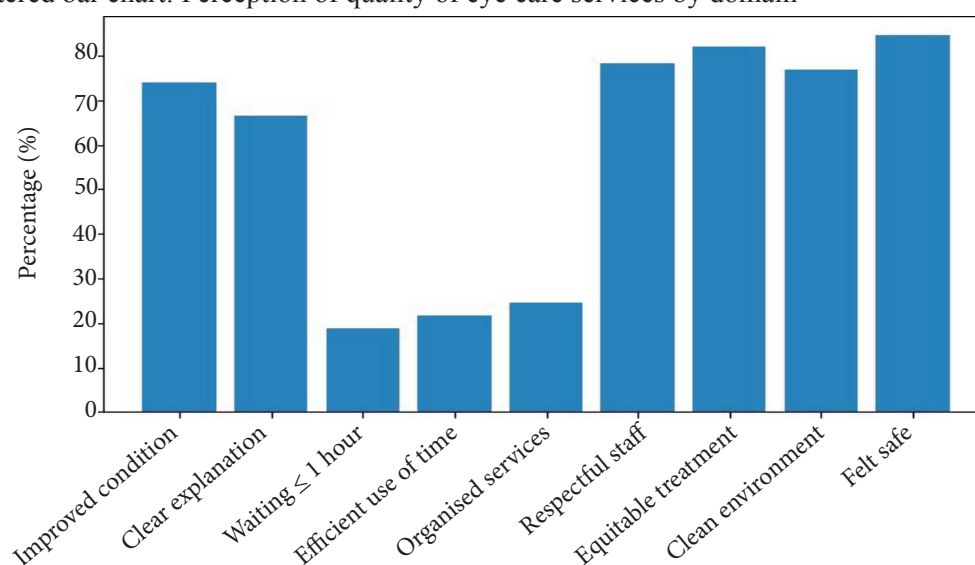
Effectiveness and communication: Most respondents reported that the treatment or service they received resulted in an improvement in their eye condition (73.9%; 95% CI: 69.6%-78.0%). However, only 66.4% (95% CI: 61.8%-70.8%) of participants reported receiving clear

explanations regarding their diagnosis and treatment plan, while 33.6% perceived explanations as unclear or inadequate. In addition, 295 respondents (69.9%; 95% CI: 65.4%-74.2%) reported that they were given clear instructions on how to take their medications or follow the recommended treatment, whereas 127 (30.1%) indicated that instructions were unclear or not provided (Tables 2, 3 and Figure 1).

Table 2: Perception of quality of eye care service domains by gender

Variable	Category	Male n (%)	Female n (%)	Total n (%)
Waiting time	< 1 hour	40 (18.7)	40 (18.7)	80 (18.9)
	> 1 hour	174 (81.3)	168 (81.1)	342 (81.1)
Clear explanation of diagnosis	Yes	140 (65.4)	140 (67.0)	280 (66.4)
	No	74 (34.6)	68 (33.0)	142 (33.6)
Medication instruction clear	Yes	150 (70.1)	145 (69.7)	295 (69.9)
	No	64 (29.9)	63 (30.3)	127 (30.1)
Time used efficiently	Yes	45 (21.0)	47 (22.6)	92 (21.8)
	No	162 (75.7)	140 (67.3)	302 (71.6)
Service organized	Yes	50 (23.4)	54 (25.9)	104 (24.6)
	No	164 (76.6)	154 (74.0)	318 (75.4)
Respectful staff	Yes	165 (77.1)	166 (79.9)	331 (78.4)
	No/Mixed	49 (22.9)	42 (20.1)	91 (21.6)
Clean environment	Yes	158 (73.8)	166 (79.9)	324 (76.8)
	No	56 (26.2)	42 (20.1)	98 (23.2)
Treated equally	Yes	176 (82.2)	171 (82.1)	347 (82.1)
	No/Unsure	38 (17.8)	37 (17.8)	75 (17.9)
Total		214	208	422 (100 %)

Figure 1: A clustered bar chart: Perception of quality of eye care services by domain



Efficiency and waiting time: Regarding waiting time before consultation, only 80 (18.9%) participants (95% CI: 15.3%- 22.9%) were seen by a physician within one hour of arrival, including 14 (3.3%) who were seen within 30 minutes and 66 (15.6%) who waited between 30 minutes and one hour. In contrast, 342 (81.0%) participants (95% CI: 77.1% - 84.7%) waited more than one hour before consultation, with 130 (30.8%) waiting between one and two hours and 212 (50.2%) waiting more than two hours (Tables 2, 3 and Figure 1).

Regarding perceived efficiency of service delivery, only 92 (21.8%) respondents (95% CI: 18.0%-26.0%) felt that their time was used efficiently during the hospital visit, while 302 (71.6%) (95% CI: 67.2%-75.7%) reported that their time was not used efficiently. The remaining 28 (6.6%) participants were unsure. Only 104 (24.6%) participants (95% CI: 20.6%-28.9%) reported that registration, consultation, and investigation procedures were organized and well-coordinated, whereas the majority, 318 (75.4%), reported poor coordination of services (Tables 2, 3 and Figure 1).

In terms of accessibility, 174 (41.2%) respondents reported that reaching the hospital was very easy, while 168 (39.8%) reported moderate ease and 80 (19.0%) described as difficult. Regarding affordability, 112 (26.5%) participants (95% CI: 22.4%-30.9%) reported experiencing challenges in affording the services provided, while 310 (73.5%) reported no financial difficulty. Concerning service availability, only 104 (16.6%) respondents (95% CI: 13.2%-20.5%) reported that all required services were available on-site. Partial availability was reported by 248 (24.6%) participants, while 70 (16.6%) reported that some required services were not available (Tables 2, 3 and Figure 1).

Acceptability and patient-centredness: Regarding staff behaviour, 331 (78.4%) respondents reported that healthcare providers were respectful and courteous, while 56 (13.3%) described the interaction as mixed and 35 (8.3%) reported disrespectful behavior. In terms of involvement in care, only 298 (70.6%) participants felt involved in decision-making related to their treatment,

whereas 124 (29.4%) reported not involved. With respect to cultural and religious considerations, 358 (84.8%) respondents indicated that their cultural or religious needs were respected, while 64 (15.2%) reported that these needs were not adequately respected (Tables 2, 3 and Figure 1).

Equity and safety: Regarding equity, 347 (82.1%) participants reported that they were treated equally regardless of their background, while 50 (11.8%) reported unequal treatment and 25 (5.9%) were unsure. In line with this, 50 (11.8%) participants experienced some form of discrimination, whereas 372 (88.2%) did not.

Concerning safety and hospital environment, 324 (76.8%) respondents perceived the waiting areas and clinics, as clean and hygienic, while 98 (23.2%) reported dissatisfaction with sanitation, overcrowding, or comfort. Regarding information on treatment risks or side effects, 289 (68.5%) participants reported being informed, whereas 133 (31.5%) were not. Overall, 357 (84.6%) participants felt safe during their eye care experience, 39 (9.2%) did not feel safe, and 26 (6.2%) were unsure (Tables 2, 3 and Figure 1).

Overall satisfaction with eye care services: Overall, 240 (56.8%) of respondents reported being either satisfied or very satisfied with the eye care services provided, while 182 (43.2%) reported dissatisfaction to varying degrees. Accordingly, 290 (68.7%) participants stated that they recommend the hospital's eye care services to friends or family members, while 132 (31.3%) indicated they would not recommend the services.

Factors associated with patient satisfaction: Bivariate analysis identified several factors associated with overall satisfaction, including waiting time, clarity of explanation, staff courtesy, cleanliness of the facility, and history of previous visits. Bivariate analysis was initially conducted, and variables with $p < 0.25$ were entered into a multivariate logistic regression model. Table 3 presents the results of the multivariate logistic regression analysis, showing Adjusted Odds Ratios (AOR).

Table 3: Factors associated with overall patients satisfaction (N=422)

Variable	Category	No.	(%)	AOR (95%CI)	P-value
Waiting time	< 1 hour	80	18.9	2.8 (1.7-4.6)	< 0.001
	> 1 hour	342	81.1	1 (Ref)	-
Clear explanation of diagnosis	Yes	280	66.4	3.4 (2.1-5.3)	<0.001
	No	142	33.6	1 (Ref)	-
Clear medication instruction	Yes	295	69.9	2.6 (1.7-4.1)	<0.001
	No	127	30.1	1 (Ref)	-

Time used efficiently	Yes	92	21.8	2.9 (1.8-4.6)	<0.001
	No	302	71.6	1 (Ref)	-
	Unsure	28	6.6	-	-
Service organized	Yes	104	24.6	2.4 (1.6-3.8)	<0.001
	No	318	75.4	1 (Ref)	-
Respectful staff	Yes	331	78.4	2.9 (1.8-4.7)	<0.001
	No/Mixed	91	21.6	1 (Ref)	-
Clean environment	Yes	324	76.8	2.2 (1.4-3.6)	<0.001
	No	98	23.2	1 (Ref)	-
Treated equally	Yes	347	82.1	2.1 (1.2-3.6)	<0.001
	No/Unsure	75	17.9	1 (Ref)	-

Qualitative findings (open-ended responses): Participants highlighted strengths of the eye care services, like:

- Perceived technical competence of ophthalmologists.
- Relative affordability compared to private facilities.

Commonly reported challenges include prolonged waiting times, poor communication at registration and pharmacy units, overcrowding, and insufficient information regarding procedures and follow-up care.

DISCUSSION

This study examined patients' and caregivers' perceptions of the quality of eye care services at Menelik II Comprehensive Specialized Hospital across multiple WHO quality domains. The findings indicate a moderate level of overall satisfaction, with important strengths in perceived clinical effectiveness and provider behaviour, but marked deficiencies in efficiency, communication, and service organisation.

Overall satisfaction in the study was 56.8% (95% CI: 52.0%–61.5%), and about 68.7% (95% CI: 64.3%–73.1%) of participants reported that they would recommend the hospital to others. This level of satisfaction is lower than that reported from Jimma University Medical Centre⁹, where approximately 68% of patients were satisfied with ophthalmic outpatient services, and substantially lower than satisfaction levels reported from tertiary eye hospitals in India^{3,10}, where satisfaction frequently exceeds 80%. Compared to the study conducted at Jimma University Medical Center (68% satisfaction), the present study reported lower satisfaction (56.8%), which may be explained by the higher patient volume at Menelik II Comprehensive Specialized Hospital as a national referral center, the longer waiting times observed in this study, and differences in service organisation and patient flow. The lower satisfaction observed in the present study may therefore reflect the heavy patient load and system-level

constraints typical of public referral hospitals in low-resource settings^{3,9,10}.

Perceived effectiveness of care is relatively high, with 73.9% (95% CI: 69.7%–78.1%) of participants reporting improvement in their eye condition after receiving care. This finding is consistent with studies from India (82%)³ and China (78%)¹¹, where perceived clinical improvement strongly predicted patient satisfaction. Despite this, communication-related aspects of care is suboptimal. Only 66.4% of participants receive clear explanations regarding their diagnosis and treatment plan, and 69.9% report receiving clear instructions on medication use or follow-up. Similar communication gaps reported in studies from South Africa (63%)¹² and Tanzania (61%)¹³, where inadequate explanation and counselling negatively affect patient satisfaction despite acceptable clinical outcomes.

Efficiency is the poorest-performing domain in the study. More than four-fifths of participants wait longer than one hour before consultation, and half wait more than two hours. Additionally, 71.6% of respondents felt that their time was not used efficiently, and 75.4% reported poor coordination of registration, consultation, and investigation services. These findings are consistent with reports from public hospitals in Ethiopia¹⁴ and other sub-Saharan African countries¹⁵, where prolonged waiting times and fragmented service delivery are common causes of dissatisfaction. In contrast, studies from better-resourced eye care systems demonstrate significantly higher satisfaction with short waiting times and service flow is streamlined⁵.

Acceptability of care rated relatively favourably, with 78.4% (95% CI: 74.5%–82.3%) of participants reporting respectful and courteous behavior from healthcare providers. This aligns with findings from Jimma, Ethiopia (76%)⁹ and Tanzania (74%)¹³, where interpersonal aspects of care are often rated more positively than organisational efficiency. However, patient-centredness

remain incomplete, as nearly one-third report not being involved in decisions about their care. Similar limitations in shared decision-making documented in Egypt¹⁶ and Ethiopia^{14,15}, particularly in high-volume public hospitals.

Equity-related findings show that 82.1% (95% CI: 78.5%-85.7%) of participants perceive equal treatment regardless of background, comparable to reports from Addis Ababa public hospitals (around 80%)¹⁴. Nevertheless, 11.8% (95% CI: 8.7%-14.9%) report experiencing discrimination. Safety indicators are generally positive, with 76.8% (95% CI: 72.8%-80.8%) reporting the hospital environment as clean and hygienic and 84.6% (95% CI: 81.2%-88.0%) feeling safe during care.

These findings are similar to studies from South Africa (78% of patients rated facility cleanliness positively)¹² and Tanzania (75% of respondents expressed satisfaction with facility cleanliness)¹³, where cleanliness and perceived safety were significant contributors to satisfaction. However, the fact that nearly one-third of participants not informed about potential treatment risks or side effects highlights gaps in informed consent practices, an issue also noted in other low-resource settings¹³⁻¹⁵.

Shorter waiting time, clear explanation of diagnosis and treatment, respectful staff behavior, and a clean and comfortable environment are independent predictors of high satisfaction. These determinants are consistent with evidence from systematic reviews and multicenter studies, which emphasize that both interpersonal communication and service organization are critical drivers of patient satisfaction in eye care services¹⁷.

Qualitative findings support the quantitative results. Participants value the technical competence of ophthalmologists and the affordability of services compared to private facilities, similar to reports from India¹⁰ and Ethiopia¹⁴. Prolonged waiting times, poor communication at registration and pharmacy units, overcrowding, and inadequate information regarding procedures and follow up care identified as key challenges, consistent with findings from India, South Africa, Tanzania, and Ethiopia^{10,12-15}.

CONCLUSION AND RECOMMENDATIONS

Prolonged waiting times, poor coordination of services, limited patient involvement in decision-making, and incomplete communication regarding diagnosis, treatment, and potential risks are major contributors to dissatisfaction. Overall satisfaction is strongly influenced by modifiable factors such as waiting time, clarity of explanation, staff courtesy, and cleanliness of the facility. Reducing waiting times through improved appointment systems, patient flow optimization, and better use of allied eye health personnel is essential. Strengthening

communication, shared decision-making, and culturally sensitive care will further enhance patient satisfaction.

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