

Patient Satisfaction and Associated Factors Among Adult Outpatient Ophthalmic Service Users' at University of Gondar Comprehensive Specialized Hospital Tertiary Eye Care and Training Center, Northwest Ethiopia, 2020: An Institution-Based Cross-Sectional Study

Merkinah Lorato (✉ markosmerkineh330@gmail.com)

Woldia University

Mohammed Hussen

University Of Gondar

Mebratu Tegegne

University Of Gondar

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Abstract

Background: Patient satisfaction is explained as “the extent to which patients are happy with their health care, both inside and outside of the doctor’s office”. Observed complain and limited evidence on patient satisfaction specific to ophthalmic services. So, aimed to assess the overall patient satisfaction and associated factors among adult outpatient ophthalmic service users at University of Gondar Comprehensive Specialized Hospital, Tertiary Eye Care and Training Center, Northwest Ethiopia, 2020.

Methods and materials: An institution-based cross-sectional study was conducted from June 26 to August 5 with a sample size of 414. A systematic random sampling technique was used to select participants. An interviewer administered questionnaire was employed to collect the data. The data was analyzed by SPSS 20. Descriptive statistics such as frequency cross tabulation test was carried out to translate data into information. P-value less than 0.05 was considered as statistically significant.

Result: A total of 403 participants with 97.34% response rate were included in this study. Their mean age was 46.67 ± 16.21 years. The majorities were males (59.8%). The overall patient satisfaction was 57.1% at 95% CI :(52.1%-61.5%). The top three sub-domains with greater score of satisfaction were general outlook (67.5%), communication with providers (64.5%), and interpersonal manner (61.5%). The least satisfaction score was to waiting time (45.9%) sub domain. Being unmarried (AOR = 2.51, 95% CI 1.21-5.23) and earning a monthly income of Ethiopian Birr ≥ 2500 (AOR = 5.90; 95% CI: 2.11-16.5) were associated with the patient satisfaction.

Conclusion: The result infers that nearly sixty percent of the study participants were satisfied. While improving each sub-domain of patient satisfaction, waiting time and financial aspect sub-domains need greater emphasis by the hospital manager to improve patient satisfaction. The hospital manager, policymakers and other stakeholders need to set a quality improvement plan to solve the issue.

Background

Quality of care is “the degree to which health care services provided to individuals and patient populations improves desired health outcomes and to achieve that health care must be safe, effective, timely, efficient, equitable and patient-centered.^{1,2} It is poor globally³ and nowadays quality healthcare is a global concern^{4,5}. The universal health costs and the weight of poor health is scaling up due to less than average quality of health care⁶. It has been affected through patient related factors like income, education and provider factors such as competency, motivation and others⁷. “Patient satisfaction” is explained as “the extent to which patients are happy with their healthcare, both inside and outside of doctor’s office.”^{8,9}. It is measured in various ways like access to care, convenience, and patient- provider relationship¹¹. It was indicated to determine the level of health care delivery, analyze the existing situation and carryout important strategies using patient satisfaction¹². Accessibility and technical quality, reduced waiting time, improved communication and interaction between the health care provider and patients as a strategy¹³. Various studies done among ophthalmic service users indicated the overall satisfaction

between (35.2% - 98.3%)^{13,14,24,43,44}, which is inconsistent. The observed complains and limited evidence on patient satisfaction specifically an institution-based towards ophthalmic services in Ethiopia. The aim of current study was patient satisfaction and associated factors among adult outpatient ophthalmic service users as a quality measure.

At least 1 billion from estimated 2.2 billion blindness and/ visual impairment globally were due to preventable and treatable causes (14). While there is limited and little verification on quality eye care service including patient satisfaction to plan evidence-based strategies for high-quality eye health service (21, 22). So, this work may fill the gap and provide information on the current topic and its allied factors for service providers, advocates and policymakers. Because, health care quality improvement does not happen accidentally without consumer participation.

Methods

Study design and setting: A cross-sectional study design was applied to assess patient satisfaction and associated factors among adult outpatient ophthalmic service users at University of Gondar Comprehensive Specialized Hospital Tertiary Eye Care and Training Center, Northwest Ethiopia between June 26 and August 5, 2020.

Source population: All adult outpatients that visited University of Gondar Comprehensive Specialized Hospital Tertiary Eye Care and Training Center to get ophthalmic service were used as a source population.

Study population: All adult outpatients attending the eye care center during the study period were assumed.

Inclusion criteria: All adult outpatients aged equal or greater than 18 years were included in the study.

Exclusion criteria: Those unable to communicate, and mentally ill were excluded from the study.

Sample size determination

The sample size was determined by using single population proportion formula;

$$n = (Z_{\alpha/2})^2 p(1-p) / d^2$$

Where; n – sample size,

Z is Value of z statistic at 95% confidence interval = 1.96

P – Proportion of overall patient satisfaction towards ophthalmic service which is 57.31% taken from a study conducted in Ghana in 2017(44).

$$1-P = 1-0.5731 = 0.4269 \text{ and}$$

d – Marginal error 5% = 0.05

So that sample size for patient satisfaction was calculated as follows:

$$n = (1.96)^2 (0.5731) (0.4269) = 376 / (0.05)^2$$

Therefore, by considering 10% non-response rate, sample size for the first objective was

$$n = 376 + 37.6 = \mathbf{414}$$

Sampling technique

Systematic random sampling was held. Primarily the average number of patients attending the hospital seeking ophthalmic service every week was obtained by taking the previous two weeks into consideration from patient record book of the hospital. Then, based on that the average numbers of the patient were estimated as 1722 per month. So, K for this study was 5 which were obtained by taking the ratio of average patient number (1722) to total sample size (414). The first eligible individual was selected by simple random sampling using the lottery method as 3 by taking patients medical card number in to consideration. Then, every 5th element was selected by giving a piece of paper on which simple numbers were written only for contact purpose and the selected patient were told to return the piece of paper to the porters during his/her exit from Hospital after full treatment taken. Then, the porters took selected participants to data collector outside of building of the clinics. Explanation about the research purpose was given, so that participant with full willingness were included until the target sample obtained. In each next day of data collection sample unit selection were fasten to the 5th interval (for example if the number of last patients to be examined is less than 5, the next day they were taken into consideration to select eligible participants). The selections were held at the reception room by assigned porter.

Operational definitions

Satisfied: respondents who mark overall mean score of 60.00% to 100% or fulfill overall mean score (54) or more on the given items to measure satisfaction and the same approach was used to each domain of patient satisfaction.

Not satisfied: respondents who scored satisfaction score less than 60% or overall mean score on the given items to measure satisfaction and similarly applied to each domain.

Data collection tool and procedure

A pre-test was held. Cronbach's alpha ($\alpha = 0.81$) was used to assess the internal consistency of questions in the seven dimensions of PSQ-18. An adapted standardized patient satisfaction questionnaire was utilized. Pre-tested structured interviewer-administered questionnaire was translated in to the Amharic language by language experts was used to collect the data during clients exit from the clinic from

selected and orally consented participants that fulfill eligibility criteria. Two research assistant public health officers and one supervisor (principal investigator) conducted the interviews.

The interview lasted a maximum of 15 minutes. The questionnaire contained the client's background characteristics and other characteristics such as health insurance status, the type of visits, eye conditions, and also a standard tool for measuring satisfaction referred to as short-form patient satisfaction questionnaire -PSQ-18 (51). The instrument provides scoring for eighteen items which measure satisfaction with provided services. Items 3 and 17 measures general outlook, items 5,7 measures financial aspects, items 1, and 13 measures communication, items 12,15 measures waiting time, items 2,4,6,14 measures technical quality, and items 8,9,16,18 measures accessibility and convenience. Responses for each item are given on a 5-point scale ranging from strongly agree to strongly disagree.

Data quality assurance

To ensure the quality of the results the following procedures were carried out. Training was adequately given for the data collectors using standardized questionnaires. Daily supervision of the work done by assistants and rechecking of questionnaires for completeness was checked by the principal investigator.

In addition to that the questionnaire was pretested in about 21 people that were 5% of total sample size at the eye clinic of Debre Tabor Hospital, South Gondar, Ethiopia to assess the appropriateness and suitability before main data collection at the proposed study site. In addition, double entry of data was done in about 5% (21) of collected data.

Data processing and analysis

The collected data were entered into EPI info version 7. Then, it was exported to SPSS version 20 for analysis. After that coding and cleaning was held to check for completeness and password was used to keep the privacy of the data. Descriptive analysis was held and satisfaction was determined by estimating patient satisfaction scores with PSQ-18 reporting means and standard deviation.

To answer the first objective of determining the level patients' satisfaction with services provided at the eye clinic (overall satisfaction), the PSQ-18 scoring system were used. All items were scored from one to five (5 points Likert scale). This research contains 18 of PSQ-18. The Overall level of satisfaction in percentage was calculated by summing the 18 scales scores, then was divided by 90 (maximum possible score) and multiplying by 100. All 18 scales scores were summed up with a maximum possible score of 90. The overall satisfaction was dichotomized, with satisfied (ranging from a score of 60% to 100%) and not satisfied score less than 60%.

To assess patient and health provider domains influencing satisfaction; firstly, satisfaction for each of the 7 dimension was estimated by the mean score of each dimension. Then categorized into two levels; that is satisfied (greater than or equal to 60%) and not satisfied (less than 60%).

A Bivariable binary logistic regression was used to assess the effects of all the domains of satisfaction and to select candidate variable for multivariable analysis model. A multivariable binary logistic regression model was applied for variables with $p < 0.20$ to identify final predictors of the outcome variables. Hosmer-Lemeshow model fitness test (0.74) was used to check model fitness and multicollinearity between predictor variables were checked. The adjusted odds ratio with a 95% confidence interval was used to determine strength of association of actual predictors of the patient satisfaction and $P \leq 0.05$ were considered as statistically significant. Each of seven domain was quantified separately to identify areas of satisfaction. The result was presented with tables and pie chart.

Ethical considerations

Ethical clearance was obtained from the University of Gondar College of medicine and health sciences, school of medicine ethical review board. An official permission letter was obtained from the chief clinical coordinator office of University of Gondar Referral Hospital and from department of Ophthalmology and Optometry. All respondents of this study were aged 18 years and above. Informed consent was gained from respondents after a detailed explanation of the purpose, benefit and risk of the study. Participation in this study was voluntary and participants can choose not to answer any individual question or all the questions. Participants were at the freedom to withdraw from the study at any point at the time of the study. To ensure Confidentiality, the questionnaires were coded and the name of respondents' was not included to the questionnaire. Data collected in this study was used strictly for research purposes and secured by coding and locking the data and maintained during the data collection and analysis procedure.

Results

Socio-demographic and economic characteristics of the study participants

A total of 403 adult subjects aged 18 years or above were included in this study with the response rate of 97.34%. The mean age of participants was ($M = 46.67$, $SD = \pm 16.21$ years). Approximately sixty percent 241(59.8%) of participants were males and the majority of participants were Orthodox Christianity (83.6%) followed by Muslim (12.7%) followers. Regarding the marital status nearly seventy percent (69.2%) were married followed by single (15.4). Closely, sixty percent (59.8%) of the study subjects were from urban area. Almost two-third (63.6%) of the respondents were got formal education. Nearly, one-fourth of participants were farmers (25.8%) and self-employed (25.3%) followed by government employee (18.9%). (Table 1)

Table 1; Socio-demographic and economic characteristics among adult outpatient ophthalmic service users at University of Gondar Comprehensive Specialized Hospital Tertiary Eye Care and Training Center, Northwest Ethiopia, 2020($n = 403$)

Variables	Frequency	Percentage (%)
Age		
Young adults (18-35)	121	30
Middle aged adults(36-55)	155	38.5
Older adults (> 55)	127	31.5
Total	403	100
Sex		
Male	241	59.8
Female	162	40.2
Total	403	100
Religion		
Orthodox	337	83.6
Muslim	51	12.7
Others*	15	3.7
Total	403	100
Marital status		
Single	62	15.4
Married	279	69.2
Divorced/separated	38	9.4
Widowed	24	6
Total	403	100
Residence		
Rural	162	40.2
Urban	241	59.8
Total	403	100
Education level		
No formal education	147	36.4
Primary education	76	18.9
Secondary education	89	22.1

Colledge and above	91	22.6
Total	403	100
Occupation		
Government employee	76	18.9
Farmer	104	25.8
Self-employed	102	25.3
Merchant	46	11.4
House wife	57	14.1
Others**	18	4.5
Total	403	100
Average family income /monthly		
<500	58	14.4
500-1499	149	37
1500-2499	148	36.7
≥ 2500	48	11.9
Total	403	100

Others* (protestant, Judism, catholic), others (retired, students, and non-employed)**

Large number of participants 250 (62%) attended the hospital were either twice or above. About thirty two percent (31.8%) of participants claimed they have retinal disease followed by glaucoma (17.9%) and not know(18.1%) their eye condition .Regarding the utilization of valid health insuranceapproximatelythree-fourth 307 (76.2%) of participants were not the users of the service. (Table 2)

Table 2; Service utilization behavior of the study subjects among outpatient ophthalmic service users at UGCSHTECTC, 2020 (n =403)

Variables	Frequency (N)	Percentage (%)
Type of visit		
First	153	38
Second or more	250	62
Total	403	100
Eye condition		
Glaucoma	72	17.9
Cataract	46	11.4
Conjunctivitis	27	6.7
Refractive error	34	8.4
Retinal diseases	128	31.8
Not know	73	18.1
Others*	23	5.7
Total	403	100
Valid health insurance		
Yes	96	23.8
No	307	76.2
Total	403	100

others* (strabismus, dacrocysitis, trauma, corneal cases)

Service related satisfaction sub-domains

The result of this study indicated that the mean score of general outlook of the provided service by users was (M = 3.14; SD = ±0.88); financial aspect (M = 2.77; SD = ±0.82); provider-patient communication (M = 3.10; SD = ±0.94); interpersonal manner of health provider (M = 2.94; SD = ±0.84); technical quality of health provider (M = 2.94; SD = ±0.79); waiting time (M = 2.66; 0.77) as well as accessibility and convenience (M = 3.01; SD = 0.84) with mean overall satisfaction as (M=2.95, SD = ± 0.53) out of 5.(Table 3)

Table 3; Service related satisfaction factors among adult ophthalmic outpatient service users at University of Gondar Comprehensive Specialized Hospital Tertiary Eye Care and Training Center, Northwest Ethiopia, 2020. (n = 403)

Subdomains and overall satisfaction	Frequency (N)	Percent (%)	Mean \pm SD	95% CI
General outlook			3.14 \pm 0.88	3.05-3.22
Satisfied	272	67.5		
Dissatisfied	131	32.5		
Financial aspect			2.77 \pm 0.82	2.69-2.86
Satisfaied	209	51.9		
Dissatisfied	194	48.1		
Provider-patient communication			3.10 \pm 0.94	3.02-3.26
Satisfied	260	64.5		
Dissatisfied	143	35.5		
Interpersonal manner			2.97 \pm 0.84	2.88-3.05
Satisfied	248	61.5		
Dissatisfied	155	38.5		
Waiting time			2.66 \pm 0.77	2.59-2.74
Satisfied	185	45.9		
Dissatisfied	218	54.1		
Technical quality			2.94 \pm 0.79	2.87-3.03
Satisfied	228	56.6		
Dissatisfied	175	43.4		
Accessibility &Convience			3.01 \pm 0.84	2.93-3.10
Satisfied	238	59.1		
Dissatisfied	165	40.9		
Overall satisfaction			2.95 \pm 0.53	2.90-3.00
Satisfied	230	57.1		
Dissatisfied	173	42.9		

Associated factors to the patient satisfaction

Among factors that fitted in to bivariable and multi variable regression model the odds of patient satisfaction was 2.5 times (AOR = 2.51; 95% CI: 1.21-5.23) when compared to ever married group. The odds of patient satisfaction among those earning monthly income of ≥ 2500 ETB was 6 fold when compared to those earning monthly income of < 500 ETB (AOR = 5.90; 95% CI: 2.11-16.50) were significantly associated with the level of patient satisfaction at 5% level of statistical significance. (Table 4)

Table 4; Factors associated to overall patient satisfaction among adult ophthalmic outpatient service users at University of Gondar Specialized Hospital Tertiary Eye Care and Training Center, Northwest Ethiopia, 2020 (n = 403)

Variable	Overall satisfaction, n (%)			
	Satisfied (n)	Not satisfied (n)	COR (95%CI)	AOR(95% CI)
Age				
18-35	74	47	1.06(0.64-1.76)	1.16(0.69-1.97)
36-55	80	75	0.72(0.44-1.15)	0.71(0.43-1.15)
≥ 55	76	51	1.00	1.00
Sex				
Male	137	104	1.00	1.00
Female	93	69	1.02(0.68-1.53)	1.12(0.70-1.77)
Marital status				
Unmarried	42	20	1.71(0.96-3.03)	2.51(1.21-5.23)*
Evermarried	188	153	1.00	1.00
Education level				
Noformal education	80	67	0.84(0.56-1.27)	1.23(0.67-2.23)
Formal education	150	106	1.00	1.00
Residence				
Rural	86	76	0.76(0.51-1.14)	0.74(0.39-1.41)
Urban	144	97	1.00	1.00
Occupation				
Engaged on work to generate income	189	139	1.00	1.00
No work currently	41	34	0.88 (0.54-1.47)	0.93(0.51-1.97)
Average family income/month (in ETB)				
<500	29	24	1.00	1.00
500-1499	81	72	0.93(0.49-1.74)	1.47(0.66-3.27)
1500-2499	80	67	0.99(0.53-1.86)	1.64(0.70-3.77)

>=2500	40	10	3.31(1.37-7.97)**	5.90(2.11-16.50)**
Type of visit				
First	90	63	1.12(0.75-1.69)	1.10(0.69-1.64)
Twice or above	140	110	1.00	1.00
Valid Health insurance				
Yes	56	40	1.07(0.67-1.70)	1.54(0.87-2.73)
No	174	133	1.00	1.00

Discussion

The finding of overall patient satisfaction (57.1%) is similar to study done in Ghana in the same setting (57.3%)⁴⁴. May be due to similar sampling techniques and data collection tools.

The result also in line with the study outcome in a non-parallel setting in Wolaita Sodo Teaching Hospital, Ethiopia (54.2%)⁴⁵ and Gondar University Specialized Hospital, Ethiopia (51.7%)⁴⁶. The consistency may be due to the same sampling technique and the socio-economic status of the study population. The result of this study is encouraging as compared to a study done using consecutive sampling in Nigeria (35.2%)¹⁸. The difference might be due to the variation in the sampling technique and sample size. However, this finding is lower than the results of cross-sectional studies conducted in Nepal (76.8%) with sample size of 82¹⁹, Iran (60%) with sample size of 550¹⁹, Saudi Arabia (63.9%) with 309 participants¹³, Nigeria (98.3%) with 303 respondents⁴⁷, Nigeria (80.1%) with 251 sample size⁴⁸; and at Jimma, Ethiopia (97.8%) at outreach site²⁰. The disparity in the result possibly explained by inconsistency in sample size and study population applied. The result suggests service providers intervene in areas of dissatisfaction in turn to improve the overall patient satisfaction.

Two-third (67.5%) of participants were satisfied with the general outlook sub-domain of eye care service with a mean score of 3.14. The MSS is lower than the results of previous studies done in non-comparable settings in India (3.69)²¹ and Jordan (3.20)⁴ while higher than that of Uganda (2.70)³¹. The discrepancy may be due to the difference in data collection tools, variation in the service provided and socio-economic variation among participants. The result infers that the medical care received by respondents was not just perfect.

Nearly half (51.9%) of respondents were satisfied with the financial aspect with a mean satisfaction score of 2.77. Meaning, still half of the service users have been waiting for financial support from the facility and other stakeholders. However, this mean satisfaction score is lower than the MSS of the study result in a parallel setting in Ghana (3.06)⁴⁴ and outreach based study at Jimma, Ethiopia (4.46)²⁰. This may be justified by variation in socio-economic characteristics of the study subjects and the usual free service provision at outreach sites. It denotes that some of the service users are still set back due to the affordability issue.

In comparison to the present study (64.5%), the communication sub-domain had a higher proportion in a similar study done in Nigeria (92%)⁴⁰. In non-parallel settings in Haryana, India (80.9%)²² using multi stage sampling technique and Gaur et al (78.8%)²⁰ using linear regression model also revealed a better proportion of satisfaction. Difference in the study results may be due to dissimilarity in sampling and analysis techniques. However, it is promising than previous work in similar setting in Ghana (58.8%)⁴⁴, but the MSS(3.10) is lower than the study conducted in Jordan (3.40)⁴ and outreach based study at Jimma, Ethiopia (4.63)²⁰. The survey tools used and analysis approach variation may explain the difference. The result suggests that nearly one-third of service users were examined and tested without explanation about what was did for them.

The proportion and MSS to sub-domain interpersonal manner was 61.5% and 2.94 respectively. This result is lower than outcomes obtained from studies performed in Iran 87.9%¹⁰ and Calabar, Nigeria 98.6%¹⁰. The reason for the disparity may be due to dissimilarity in the study population. Non-analogous studies that were conducted at India Gaur et al (67%)²⁰ using 500 study participants among different outpatient department attendants including Ophthalmology has shown a better proportion of satisfaction than the present work; but another study in India (56.8%)²² using nominal regression model revealed a smaller proportion of satisfaction. It might be justified by the difference in sample size and analysis technique. In relation to outreach based study at Jimma, Ethiopia (3.3)²⁰, the MSS of the present study is lower but nearly similar to that of Ghana (2.91)⁴⁴. The variation in the analysis model and categorization difference may be the reason for the discrepancy. The result signifies that the service providers are friendly and courteous when helping their patients to the explained level while being exposed to the self-optimistic response of participants.

The greatest dissatisfaction sub-domain was waiting time (54.1%) with the least MSS of 2.66. Studies with promising results in related settings in Iran¹⁰, Saudi Arabia¹³; Ghana⁴⁴; Calabar, Nigeria¹⁰ and Nigeria⁴⁰ revealed 62%, 58.5%, 58.2% 77.5% and 69.7% satisfaction with waiting time respectively. The discrepancy might be due to variation in sample size, data collection tool, analysis approach, and study population. However, the lower proportion was stated in Southeast, Nigeria (44.7%)¹⁰. The tool variation may justify the difference. The MSS of this study is lower than a study conducted in a comparable setting in Ghana (2.91)⁴⁴ and outreach based study at Jimma, Ethiopia (4.59)²⁰. The difference in given time value for each study participants, dissimilarity in the study population, and easy access to services at the outreach site might justify the reason. The result reassures that the time constraint needs a priority to keep the service users' preference. While being a single referral eye treatment center for a huge segment of the population in the area that might inflate the result.

A study conducted in a parallel setting in Ghana (55.2%)⁴⁴ complements the result of technical quality (56.6%) sub-domain. The similarity of the sampling technique used for data collection may explain the result. This outcome is encouraging than that of Uganda (8%)³¹ in a non-parallel setting. A Study setting and analysis approach may be the possible reasons for the disparity. The MSS for this sub-domain (2.94) is lower than that of India (3.46)²⁰; Jordan (3.22)⁴ and outreach based study at Jimma, Ethiopia (4.60)²⁰. The contradiction in the results may be explained by the difference in the health system of the

countries and variation in the study settings. It implies that there is a need to improve the set up (for example fulfilling advanced necessary instruments) while building the technical quality of the service provider.

The proportion of satisfaction to accessibility and convenience sub-domain (59.1%) is similar to that of Haryana, India (59.2%)²⁸ conducted in a non-corresponding setting. Correspondence in the sampling technique may be the reason for the similarity. Studies conducted in the same setting in Iran using linear regression (75.5%)¹⁸; Nigeria with 251 sample size (84%)⁴⁸ and Nigeria (95.4%)¹⁸ using consecutive sampling technique were indicated a better proportion of satisfaction than the result of this sub-domain. The discrepancy may be due to differences sampling technique, variation in analysis method, and the variation in the health system of the countries. In comparison to a study conducted in Ghana (2.78)⁴⁴, the MSS (3.01) of this sub-domain is lower. The disparity may be due to the difference in the study population. However, lesser MSS were obtained in the study done in dissimilar settings in Jordan (2.86)⁸; Uganda (2.80)³¹ and outreach based study at Jimma, Ethiopia (3.75)²⁸. The difference may be due to variation in the study population; the difference in measurement tools and the unbalanced emphasis of stakeholders at different sites and departments. It might indicate that there is a problem in the eye care service provision with easy access to specialists and the community cannot easily find the service whenever they need it.

In the present study, unmarried respondents were 2.5 times more likely satisfied when compared to ever married participants. The result may denote the greater socio-economic burden on the ever married group. In previous research conducted in Ghana in a parallel setting⁴⁴ marital status is not associated with overall patient satisfaction. The same applies to studies done in Jimma University Hospital, Ethiopia³⁴; Dessie Referral Hospital, Ethiopia³⁸, and Felege hiwot Referral Hospital, Ethiopia³⁸. The similarity in the results may be due to the same categorization and methodology applied. However, being married was positively associated with overall patient satisfaction in the study done in Serbia⁴⁸. The disparity may be due to variation in the study population.

The odds of patient satisfaction was 5.9 higher among those earning an average monthly income of ≥ 2500 when compared to those earning monthly income of < 500 . It suggests that financial support from the service provider and other stakeholders may fill the gap in the future. In opposite, monthly income was not associated with the interest variable in a study done in University of Gondar Comprehensive Specialized Hospital, Ethiopia⁴¹. The sample size difference may justify the discrepancy.

Generally, poor health is still a concern due to less than average quality of healthcare globally⁸. The findings of this study suggest clinicians to explain examinations and tests as well as to improve a friendly and courteous approach. It infers the hospital manager to set a quality improvement plan to fulfill necessarily advanced instruments and solve the affordability issue while the concern of waiting time at the center. It also denotes policymakers and other stakeholders to solve the problem of unbalanced eye care provision centers to the population on its need. Social desirability bias has been its short come.

Conclusion

The overall patient satisfaction of this study is 57.1%, infers that nearly sixty percent of the study population was satisfied. Hence, the Hospital proceed on proving regular eye care service while improving each sub-domains of patient satisfaction. However, it needs extra focus on areas of major dissatisfaction (waiting time followed by financial aspect). Those earning a monthly income of greater than 2500 and unmarried may pay the treatment fee easily because of less burden when compared to those earning a monthly income of less than 2500 and married respectively.

List Of Abbreviations

MSS – Mean Satisfaction Score

PSQ- Patient Satisfaction Questionnaire

Declarations

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Availability of data and materials

The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

Authors' contributions

The principal investigator, MML wrote the abstract, result, and discussion. MSH wrote the introduction section and methodology. MMT had written a conclusion and declarations. Then, all authors have reviewed the manuscript.

Ethics approval and consent to participate

The study was approved by University of Gondar College of medicine and health sciences, school of medicine ethical review board in accordance with Ethiopian national research ethics review guideline. Informed consent was gained from respondents after a detailed explanation of the purpose, benefit and risk of the study. Confidentiality of the data was kept strictly.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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