

Client satisfaction among outpatients of Eastern zone general hospitals of Tigray, Northern Ethiopia, 2020

Zinabu Asfaw Gebrezgi^{1*}, Belay Desye¹, Haftay Gebremedhin¹, Kahsay Amare¹, Gaym Gebresilassie², Mengistu Mitiku Ashebir³

Gebrezgi ZA, Desye B, Gebremedhin H, et al. Client satisfaction among outpatients of Eastern zone general hospitals of Tigray, Northern Ethiopia, 2020. *J Health Pol Manag.* 2021;4(4):1-6.

Introduction: Client satisfaction is important to measure the quality of care that contains understanding the need of clients, and providing services accordingly. It may play its own role in the utilization of hospital services.

Objective: To investigate client satisfaction among outpatients of Eastern zone general hospitals of Tigray, Northern Ethiopia, 2020.

Methodology: Hospital based cross-sectional study design was used among outpatients of the eastern zone general hospitals of Tigray, from September up to December 2019. Sample size was estimated to be 273 and selected with the systematic random sampling method. Collected data was entered and analyzed using SPSS version 21. Binary logistic regression was used to check the association between dependent and independent variables.

Results: Overall client satisfaction was 41.4% with Mean \pm SD, 1.19 \pm 0.17. Client satisfaction was more than 75% with 11(84.6%) of satisfaction tool measurements, whereas with information provision by health workers and doctor examination was to be 36.3% and 73.6% respectively. Marital status (AOR=0.469 at 95%CI=(0.229, 0.957), time to be x-rayed (AOR=0.065 at 95%CI=(0.022, 0.191), presence of ordered drugs in the institution (AOR=9.037 at 95%CI=(3.761, 21.713) and time taken by nurses after doctor (AOR=6.277 at 95% CI=(1.613, 24.430) were found to be statistically significant.

Conclusion and recommendations: Overall satisfaction of this study was rated as low. Patients were low satisfied with information provision by health workers and the doctor examination. The hospital staffs, clients, and board of the hospital should work on the availability of drugs, time for x-ray, and low satisfaction areas. Health professionals should give the patients adequate information about the hospital services.

Key Words: Client satisfaction; General hospitals; Outpatients

INTRODUCTION

Client satisfaction is basic for a good hospital service that provides information for health care professionals how patients are getting their expectations. Recently, client satisfaction is very helpful for how to provide and improve health care services. In general, it is a fundamental parameter for health service management [1,2].

Hospital service may be measured by client's satisfaction. Many institutions are using client satisfaction for increasing health professional's accountability. Findings stated that satisfied clients can properly utilize medicine and advising of health care providers. Besides, clients may likely to come back for extra health care services and will be helpful for enhancing health institution income [3,4].

Different studies relating client satisfaction in Ethiopia showed that long time taking for different health care services, lack of secret room, very delayed results, absence of medicines in health institutions, and absence of risk information for clients are the main frequent health care quality obstacles that diminish client satisfaction [5-7].

World Health Organization showed that Ethiopian health service coverage and utilization is about 86.7% and 32%, respectively. The low rate utilization includes lack of fundamental and potential services and cost unaffordability. Hence, client satisfaction is a fundamental tool to estimate the health institution performance so that health care service is provided by health and non-health professionals [8-10].

Enhancing the health institutions performance is the main method to lessen the prevalence of infectious and noninfectious diseases. As providing health care quality service is one of the key indicators for good health institution performance, it will be very essential for achieving Millennium Development Goal [11].

Studies showed that recipient information service upgraded the performance of health institutions driving health care providers while their good effort

result is reported, included in planning, evaluating of the institution performance and clients' will be self-assured so that their worries are being considered [12].

Client satisfaction affects healthcare organizations 'image and has a direct effect on client confidence, which may bring about enhancing health care service utilization and exchanging of business issues. Client confidence and trust on the organizational service may influence clients' views on their health service providers' so that they will hesitate on their professional knowledge and skills. Clients with high satisfaction are very confident to explain their disease signs and symptoms to their health care service providers [13,14].

It will be very crucial to conduct research studies and simple surveys to know the status of client satisfaction and how the health institution is performing. This is especially important to assess the availability and accessibility of medical supplies, how the health care service is provided, what problems are there that can diminish the service, and to dig out important solutions for the problems that are obstacles to the enhancing of health care quality service [15].

Studies showed that health institution clients are highly influenced by the exchange of messages with their health care providers. Associated factors like age, educational status, marital status, sex of clients, occupational status, availability of services (like availability of drugs, X-ray service, and laboratory service in the hospital), the way doctor examines the patient, privacy, confidentiality, waiting time for the services, perception of empathy, hospital set up, showing politeness and respecting, giving chance clients to explain their feelings like that of patient centered service, competent skills and knowledge of professionals are mostly found predictors that can compromise the health care quality service and diminish client satisfaction. Different Studies showed that different findings on client satisfaction and predictors [16-31].

Although eastern zone Tigray general hospitals are struggling and providing health care services to satisfy their clients, their outpatient client satisfaction is unknown and there was not a study conducted. Therefore, we plan to

¹Department of Public Health, College of Medicine and Health Science, Adigrat University, Tigray, Ethiopia; ²Department of Surgery, College of Medicine and Health Science, Adigrat University, Tigray, Ethiopia; ³Department of Public Health, College of Medicine and Health Science, Mekelle University, Tigray, Ethiopia

Correspondence: Zinabu Asfaw Gebrezgi, Department of Public Health, College of Medicine and Health Science, Adigrat University, Tigray, Ethiopia, Email: zinabuasfaw6@gmail.com

Received: June 18, 2021, **Accepted:** July 02, 2021, **Published:** July 09, 2021



This open-access article is distributed under the terms of the Creative Commons Attribution Non-Commercial License (CC BY-NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits reuse, distribution and reproduction of the article, provided that the original work is properly cited and the reuse is restricted to noncommercial purposes. For commercial reuse, contact reprints@pulsus.com

assess client satisfaction among outpatients of Eastern zone general hospitals, Tigray, Northern Ethiopia.

Methods significance of the study

This study will give data about the outpatient client satisfaction of Eastern zone general hospitals, Tigray region. It will also provide information about what predictors are influencing the health care service and to set a recommendation based on the findings. And this will inform the responsible bodies what work must be done to achieve the required goals. Moreover, it will be helpful for hospital managers to plan and evaluate the service.

Objective

General objective: To investigate client satisfaction among outpatients of Eastern zone general hospitals of Tigray, Northern Ethiopia, 2020.

Specific objectives:

1. To assess client satisfaction among outpatients of Eastern zone general hospitals.
2. To identify associated factors affecting client satisfaction among outpatients of Eastern zone general hospitals.

METHODOLOGY

Study area and period

This study was done in Eastern zone. Tigray from January to March, 2020. Eastern zone Tigray is demarked to the south by Mekelle capital city of Tigray, to the east by Afar region, to the northern by Eritrea, and to the west by Tigray Central zone. Eastern zone has one federal university, two general hospitals, six primary hospitals, 12 health centers, 6 private clinics, and 20 health posts. Eastern zone general hospitals have around ten specialists, 6 master health officers, 8 general practitioners, 25 BSC nurses, 8 health officers, 30 clinical nurses, 2 anesthetists, 24 midwives, 8 pharmacists, 10 laboratory professionals, 4 environmental health professionals and 2 radiologists [31].

Target population

All clients visiting Eastern zone Tigray general Hospitals.

Study populations

All clients visited the outpatient department of Eastern zone Tigray General Hospitals.

Study unit

Clients who were randomly selected among outpatients of Eastern zone Tigray General Hospital

Study design

Hospital based cross-sectional study has been deployed.

Sample Size determination and sampling techniques

Sampling formula with percent of patient satisfaction (P) 80.1%, margin of error 5%, Confidence level of 95%, Z-value=1.96, n=sample size:

$$n = Z^2 p (1-p) / d^2 = (1.96)^2 (0.801) (0.199) / (0.05)^2 = 248$$

Thus, using the 10% nonresponse rate, the total sample size was 273.

Sampling technique

Total sample was allocated to the two general hospitals proportionally based on their patient flows. Accordingly, 160 and 113 samples were allocated to Adigrat and Wukro general hospitals, respectively. The proportionated sample size of each hospital was allocated to the four units (Medicine, Surgical, Pediatrics and Gynecology and obstetrics) equally. Then, each study unit was selected with a systematic random sampling technique.

Eligibility

Inclusion: Clients visiting the outpatient departments of Eastern zone Tigray general hospital.

Exclusion: Clients severely ill and unable to respond and were interviewed questions.

Variables

Dependent: Client satisfaction.

Independent: Sociodemographic characteristics, free/paying, doctor-patient relationship (politeness and respecting), distance, existence/availability of drugs and supplies. In addition, to time for services like the registration room, laboratory, examination room, and radiology investigation.

Data collection

Data collection materials: Structured questionnaire was adapted from similar references but some adjustments have been done on the objective of the current study and based on the service delivery of the study area. Questionnaire equipped in English, translated into the local language Tigrigna and then to English for uniformity. Six Health Management Information System professionals were employed for data collection. Data was collected from all areas that gave outpatient services [21,28,30].

Data management and quality control: A one-day training was provided to data collectors aimed the objectives, contents of the study, and how to approach the study units. Before the actual study, 5% of the total sample size was pretested. After the pretest, editing of the questionnaire was done. Collected data was coded, cleaned, and assured if all questionnaires are completed.

Data analysis: Data was entered and analyzed using SPSS version 21. Descriptive data was presented using frequencies and percentages. Client satisfaction was categorized into satisfied (satisfied, strongly satisfied) and dissatisfied (dissatisfied, neutral, and strongly dissatisfied) for appropriateness of checking associations. After the rectal scales have been categorized into satisfied and dissatisfied, binary logistic regression was used to check the association between dependent and independent variables.

Operational definition

Client satisfaction: Is a parameter used to measure either customers are getting their expectations. After satisfaction specific questions were entered in to SPSS, the five rectal scales were categorized into satisfied and not satisfied, and then the total mean score of satisfaction was calculated to decide the cut-off client satisfaction. Those who scored above the mean were categorized as satisfied and below the mean not satisfied [6].

Outpatient: A hospital service is planned for the accommodation of health providers and their colleagues to give medical and primarily health care services [12].

Low client satisfaction: Client satisfaction with a mean score of below 75% [31].

High client satisfaction: Client satisfaction with a mean score of above or equal to 75% [31].

Ethical consideration

Ethical research committee of College of Medicine and Health Sciences provided us an ethical paper. We have also taken a supportive letter from the college to the general hospital. Purpose and content of the research was clarified to the patient/care takers of the study subjects and written consent was obtained.

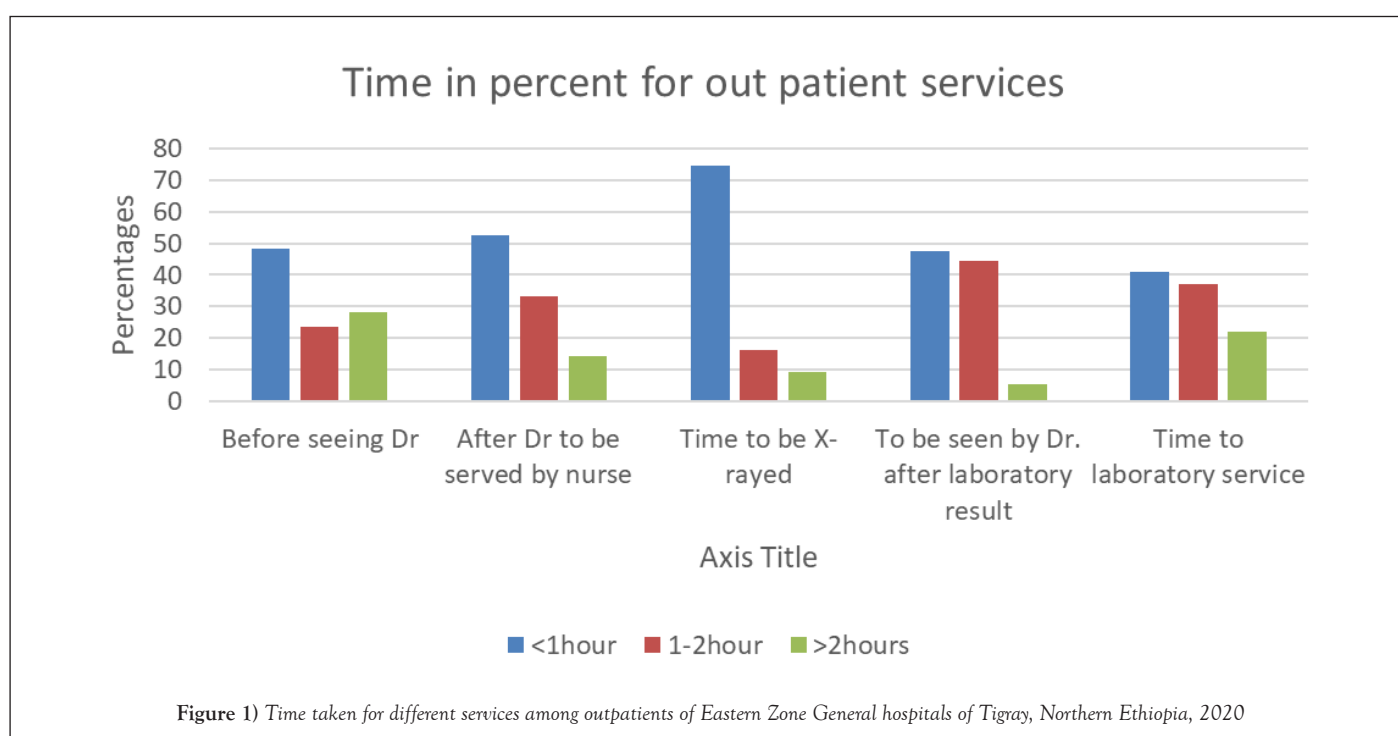
RESULTS

Sociodemographic characteristics

From the 273 participants, 190(69.6%) were males; most of the Clients (63.7%) were above 35 years old. Majority of respondents 172(63%) were diploma and above. Regarding their marital status, the majority 155(56.7%) was single. Most of the clients (44.3%) were unemployed, 61(22.3%) were merchants, while the others are farmers and employed. About 174 (63.7%) of the clients came from Urban areas. Of the total respondents, 20% were new visitors. About 90% were paying clients (Table 1 and Figure 1).

TABLE 1
Socio demographic characteristics of the clients among outpatients of Eastern zone general hospitals of Tigray, Northern Ethiopia, 2020 (n=273)

Characteristics	Number	Percent
Sex		
Male	190	69.6
Female	83	30.4
Age		
15-24	42	15.4
25-34	57	20.9
35-44	74	27.1
>45	100	36.6
Educational status		
Illiterate	15	5.5
01-Aug	59	21.6
09-Dec	27	9.9
Diploma and above	172	63
Occupational status		
Employed	37	37
Merchant	61	61
Farmers	54	54
Unemployed	121	121
Marital status		
Single	155	56.7
Married	16	5.9
Divorced	19	7
Widowed	83	30.4
Address		
Urban	174	63.7
Rural	99	36.3
Payment		
Paying	246	90
Free	27	10
Individual status		
Patient	198	72.5
FP, vaccination	75	27.5
Frequency of visit		
New	55	20
Repeat	218	80



Outpatient satisfaction rate of the service was 113(41.4%) with Mean \pm SD, 1.19 \pm 0.17. Of the total, 273 respondents were highly satisfied with time spent to see a health worker, courtesy and respect, privacy during examination, access to latrines, cleanliness of latrines, queue process, confidentiality information about patient problems, general cleanliness of the hospital, general satisfaction and overall waiting time to get the services (Table 2). Whereas clients were lowly satisfied with information provision about the service by health professionals, the doctor examination and information provision about the service by health workers. Of the total clients, 248 (91%) got prescription paper for drugs and supplies. Of those with prescription 145 (58.6%) were satisfied with the availability of prescribed drugs (Table 2).

Factors associated with client satisfaction among outpatients

Factors associated with client satisfaction who visited outpatient service, eastern zone general hospitals, significant variables on bivariate analysis, marital status, education, occupational status, time taken to be x-rayed, existence of prescribed drugs, time taken before or seen a doctor and time

taken to be served by a nurse after a doctor has seen at p-value<0.2. Under multivariate analysis, marital status, time taken to be x-rayed, existence of prescribed drugs, and time taken to be served by nurses after the doctor has seen were declared to have significant association with the outcome variable (Table 3).

Participants who were widowed had 53% times less satisfaction (AOR=0.469 at 95%CI=(0.229, 0.957) than those who were single. Participants who had got x-ray service within 1-2 hours had 93.5% times less probable satisfaction (AOR=0.065 at 95%CI=(0.022,0.191) than individuals who had got service less than one hour. Participants who had got prescribed drugs in the hospital pharmacy had 9.037 times more probable satisfaction as compared to those who had not got the prescribed drugs 9.037(AOR=9.037 at 95%CI=(3.761,21.713). Participants who had got nurse service in less than two hours after the doctor has seen, were 6.277 times more satisfied than individuals who had got the service after two hours 6.271(AOR=6.277 at 95% CI=(1.613, 24.430).

TABLE 2

Client satisfaction among outpatients of Eastern Zone General hospitals of Tigray, Northern Ethiopia, 2020 (n=273)

Characteristics	Satisfied (%)	Dissatisfied (%)	Mean \pm SD
Information provision by health workers	99(36.3%)	174(63.7%)	1.08 \pm 0.27
Time used to be served by health professionals	244(89.4%)	29(10.6%)	1.43 \pm 0.49
Courtesy and respect	207(75.8%)	66(24.2%)	1.43 \pm 0.47
Doctor examination	201(73.6%)	72(26.4%)	1.24 \pm 0.43
Privacy during examination	246(90.1%)	27(9.9%)	1.28 \pm 0.30
Access to latrines	235(86.1)	38(13.9%)	1.4 \pm 0.49
Cleanliness of latrines	252(92.3%)	21 (7.7%)	1.59 \pm 0.49
Queue process	219(80.2%)	54(19.8%)	1.45 \pm 0.49
Confidentiality	209(76.6%)	64(23.4%)	1.2 \pm 0.41
Information about patient problem	237(86.8%)	36(13.2%)	1.49 \pm 0.50
Overall waiting time to get the services	262(96%)	11(4%)	1.56 \pm 0.49
Availability of drugs (n=248)	145(58.6%)	128(39.8%)	1.38 \pm 0.49
General cleanliness of hospital	232(85%)	41(15%)	1.46 \pm 0.50
General satisfaction of the service	214(78.4%)	59(21.6%)	1.4 \pm 0.49
Overall client satisfaction	113(41.4%)	160(58.6%)	1.19 \pm 0.17

TABLE 3

The mean \pm SD of liver enzymes (ALP, ALT and AST) activities in pregnant women who were HIV seropositive on HAART (test group) across the trimesters of pregnancy

Variable	Satisfied	Dissatisfied	COR (95%CI)	AOR (95%CI)	
Marital status	Single	55	100	1	1
	Married	6	10	0.917(0.316, 2.657)	0.162(0.023, 1.132)
	Divorced	12	7	0.321(0.119, 0.862)	0.369(0.108, 1.257)
	Widowed	40	43	0.591(0.344, 1.018)	0.469(0.229, 0.957)*
Educational status	Illiterate	11	4	1	1
	01-Aug	16	43	7.391(2.054, 26.588)	1.054(0.100, 11.063)
	09-Dec	7	20	7.857(1.877,32.896)	0.572(0.058,5.649)
	Diploma and above	79	43	3.237(0.992,10.567)	0.199(0.022,1.792)
Occupational status	Employed	21	16	1	1
	Merchant	27	34	1.653(0.725,3.766)	0.342(0.070,1.661)
	Farmer	20	34	2.231(0.951,5.237)	2.608(0.857,7.944)
	Unemployed	45	76	2.217(1.050,4.682)	2.007(0.770,5.233)
Availability of drugs in the hospital	Yes	8	79	1	1
	No	32	81	2.595(1.553,4.336)	9.037(3.761,21.713)***
Time taken to be x-rayed	<1 hr	78	126	1	1
	1-2 hr	29	14	0.299(0.149,0.600)	0.065(0.022,0.191)***
	>2 hr	6	20	2.063(0.794,5.362)	0.550(0.138,2.198)
Time taken before seen by doctor	<1 hr	65	67	1	1
	1-2 hr	19	45	2.298(1.217,4.338)	2.102(0.890,4.965)
	>2 hr	25	46	1.785(0.985,3.235)	0.414(0.157,1.091)
	<1 hr	73	70	1	1
Time taken to be served by nurse after a Dr.	1-2 hr	31	60	2.018(1.172,3.476)	2.722(1.181,6.279)
	>2 hr	9	26	3.013(1.319,6.881)	6.277(1.613,24.430)**

Note: P-value<0.2 at bivariate analysis, p-value<0.05 at multivariate analysis.

DISCUSSION

Outpatient client satisfaction has been rated 41.4% with a Mean \pm SD of 1.19 \pm 0.17. Current finding is almost similar to findings from Gondar University referral hospital 47.6%, Debrebirhan referral hospital 49.2%, west Amhara region 39.3%, public hospitals Amhara region 40.7%, Felege Hiwot Referral Hospital 44.9%, public health facilities of Jigjiga 41.7% (Ethiopia) and Nigeria 45% in which they are rated as low patient satisfaction [18-24].

However, the current finding is higher than the finding of St. Paulus Medical College, Addis Ababa Ethiopia 19% [25]. This divergence might be due to the variance in client expectation, time of study, the type of study participants on which the study participants in St. Paulos hospital focused on women's satisfaction with intrapartum care so that pain, long stay of time in the hospital and longtime duration of admission might have decreased the satisfaction of the mothers.

This study finding is lower than research findings of public hospitals of Ethiopia like Mekelle patients admitted to Obstetrics and Gynecology Wards 79.7% and elective surgical patients 88.3%, outpatient department of hospitals in the capital city of Ethiopia 89.3%, Gondar university referral and teaching hospital 98.1%, Hawassa university teaching hospital (client satisfaction emergency department 86.7%, patient satisfaction outpatient services 80.1%) [26-31]. The high difference, the result of patient satisfaction between the mentioned studies over the current study finding could be due to the more quality and availability of medical equipment, good infrastructure, the availability of higher medical expert, accessibility of services in which most of the patients may be from towns that can easily access the service and availability of apparent students that can minimize the work load in the teaching hospitals.

Moreover, this research finding is also lesser than research findings in Nigeria, 86.8%, Tanzania 91%, Vietnam 82.5% [32-34]. The reason for the discrepancy could be the socio-economic difference, type of study population, difference in the availability of medical equipment, and difference in the service quality expectations of the population. The other reason could be the type of service differences on which the current study focuses on the general service of the outpatient department, whereas the studies did in Tanzania and Vietnam focus on specific services of family planning and HIV treatment respectively and a study in Nigeria focus on inpatient service. Although study findings in Nigeria 53%, Uganda 53.9%, Kenya 64.9%, and in Ethiopia (Mizan-Aman, Bonga and Tepi Hospitals 61.3%, adult satisfaction nursing care selected hospitals of Ethiopia 52.75%, treatment study in Addis Ababa 67%, radiological service in Hawassa teaching hospital 71.6% and Mekelle 72%) are rated as low patient satisfaction [35-43], they are still higher than this research finding. The reason could be, the staffs of the general hospitals of eastern zone Tigray might have been less committed to the providing of the services and may not follow the hospital guidelines and protocols.

In this study, it showed that there was an association between marital status with outpatient satisfaction. Participants who were widowed were 53% times less satisfied (AOR=0.469 at 95%CI=(0.229, 0.957) as compared to those who were single. A study done in West Amhara, Ethiopia also showed that association clients who are divorced were 4.26 times less satisfied than those who were single. (AOR: 4.26, 95% CI: 1.11-16.26, P: 0.034) [20]. However, the current research finding is inconsistent with research findings in Kenya [44] in which it showed that sociodemographic characteristics had no significant association with patient satisfaction. The reason for the inconsistency could be the sociocultural differences.

In this study, participants who had got x-ray service within 1-2 hours were 93.5% times less satisfied (AOR=0.065 at 95%CI=(0.022,0.191)) than that had got service less than one hour. A study conducted in Hawassa University teaching and referral hospital patient satisfaction towards radiological services showed that there was association between waiting time for x-ray service and patient satisfaction. Clients that had less duration to be examined not more than one hour (30 min-1 hr) have been four times more probable satisfied than clients that served after 2 hours (AOR=4.12, 95% CI: 1.4-11.62) [42].

In the current study, Participants that bought ordered drugs in the health institution had 9.037 times higher probable satisfaction than clients that did not get ordered drugs 9.037(AOR=9.037 at 95%CI=(3.761,21.713). Study findings done in Addis Ababa St. Paulos hospital (AOR: 1.62,95 CI: 1.13,2.23) [45] and a comparative cross-sectional study among private wing and regular services (AOR: 0.014,95%CI=0.004,0.58) [28] showed positive

association between availability of drugs and patient satisfaction. Moreover, studies done in Mulago Hospital, Uganda [36] and Kenya [46] showed that there is a positive association between availability of drugs and client satisfaction.

In this study, participants who had got nurse service in less than two hours after the doctor has seen, were 6.277 times more satisfied than that they have been serviced after two hours 6.271(AOR=6.277 at 95% CI=(1.613, 24.430)). Study findings done in Ethiopia showed that high duration time to wait for health care service was associated with client satisfaction (Gondar AOR:0.12, 95% CI=0.04,0.33[18], comparative cross-sectional study Addis Ababa AOR:0.22,95%CI=0.07,0.073[28], Mekelle AOR:0.01,95%CI=0.002,0.07 [43]). Studies done in Uganda and Nigeria revealed that patients who had got service after two hours for services at the facility and after one hour for surgical outpatient department service were dissatisfied. Moreover, different study findings in Ethiopia (St. Paulos Addis Ababa [25], and Hawassa [42]), Kenya [46], and Vietnam [34] stated that hospital clients who waited for a long duration of time to get service were less satisfied.

LIMITATIONS OF THE STUDY

Clients may favor the hospital service by thinking that health professionals may not give them good services if they report as they were dissatisfied.

CONCLUSION

Outpatient client satisfaction rate was below the expected 113(41.4%) with Mean \pm SD, 1.19 \pm 0.17. Ten of the thirteen client satisfaction measurement tools indicate highly satisfaction of patients with time spent to see health professionals, courtesy and respect by health workers, privacy during examination, access to latrines, cleanliness of latrines, queue process, confidentiality information about patient problems, general cleanliness of the hospital, general satisfaction all services and duration of time to be served. Whereas clients' satisfaction was low with information regarding services by health professionals and the way doctor examines the patients. Marital status, presence of ordered medicines and supplies in the health institution, time taken for x-ray and time taken to be served by nurses after the doctor has seen the patient are predictors for clients' satisfaction among outpatients of eastern zone general hospitals.

RECOMMENDATION

To the general hospitals

1. The Hospitals should provide information to the clients about the services they are served.
2. The Hospitals should reduce long waiting time and prepare time protocols.
3. The hospitals should conduct a study on client satisfaction to know how the services are provided.

To the board of hospitals

The boards of hospitals should have discussions with the community, Non-governmental, and government organizations to improve the satisfaction of clients.

Availability of data

Data is found with a corresponding author and any one can find it by requesting.

CONFLICT OF INTEREST

Authors revealed that there has not been a conflict of interest.

AUTHORS' CONTRIBUTIONS

Authors added contributions based on their work divisions for producing this research article.

REFERENCES

1. Ware JH, Snyder MK, Wright WR, et al. Defining and measuring patient satisfaction with medical care. *Eval Program Plann.* 1983; 6: 247-263.
2. Manzoor F, Wei L, Hussain A, et al. Patient satisfaction with health care services; an application of physician's behavior as a moderator. *Int J Env Res Pub He.* 2019; 16(18): 3318.

3. He X, Li L, Bian Y. Satisfaction survey among primary health care outpatients in the backward region: an empirical study from rural Western China. *Patient Prefer Adherence*. 2018; 12: 1989-1996.
4. Ming KK, Liu CF, Paul C, et al. Strategic improvement for quality and satisfaction of hospital information systems. *J Healthc Eng*. 2018; 2018: 1-14.
5. Lakew S, Ankala A, Jemal F. Determinants of client satisfaction to skilled antenatal care services at Southwest of Ethiopia: a cross-sectional facility based survey. *BMC Pregnancy Childb*. 2018; 18(1): 479.
6. Sagaro GG, Alemayehu Worku Yalew, et al. Patients' satisfaction and associated factors among outpatient department at Wolaita Sodo University Teaching Hospital, Southern Ethiopia: A Cross Sectional Study. *Sci J Clin Med*. 2015; 4(5): 109116.
7. Shafiq M, Naeem MA, Munawar z, et al. Service quality assessment of hospitals in Asian Context: An Empirical Evidence from Pakistan. *Inquiry J Health Car*. 2017; 54: 1-12.
8. WHO Regional Office for Africa. Atlas of African health statistics 2016: Health situation analysis of the African Region. 2016.
9. David PH. Improving Health Service Delivery in Developing Countries: From Evidence to Action.
10. WHO. Delivering quality health services: a global imperative for universal health coverage. 2018.
11. Islam F, Rahman A, Halim A, et al. Perceptions of health care providers and patients on quality of care in maternal and neonatal health in fourteen Bangladesh government healthcare facilities: a mixed-method study. *BMC Health Serv Res*. 2015; 15:237-239.
12. UNICEF. The state of the world's children: a fair chance for every child; from 3 United Nations Plaza, New York, USA. 2016.
13. Alrubaiee L, Alkaa'ida F. The mediating effect of patient satisfaction in the patients' perceptions of healthcare quality-patient trust relationship. *Int J Market Stud*, 2011; 3(1): 103.
14. Moliner MA. Loyalty, perceived value and relationship quality in healthcare services. *J Serv Manag*, 2011; 20(1): 76-97.
15. Cronin JJ, Brady MK, Hult GTM. Assessing the effects of quality, value and customer satisfaction on consumer behavioral intentions in service environments. *J Retail*. 2000; 76(2): 193-218.
16. A. A. Mona, A. K. Abu-Shaheen, S. Kobrosly, and M. A. AlTannir, Determinants of patient satisfaction at tertiary care centers in Lebanon. *Open J Nurs*. 2014; 4: 939-946.
17. Zewdie B, Tsion A, Mirkuzie W, et al. Determinants of satisfaction with health care provider interactions at health centers in central Ethiopia: a cross sectional study. *BMC Health Serv*. 2010; 10: 78.
18. Asefa Adimasu Taddese, Kiros Terefe Gashaye, Henok Dagne, et al. Maternal and partner's level of satisfaction on the delivery room service in University of Gondar Referral Hospital, northwest, Ethiopia. *BMC Health Serv Res*. 2019; 20:233.
19. Sharew NT, Bizuneh HT, Assefa HK, et al. Investigating admitted patients' satisfaction with nursing care at Debre Berhan Referral Hospital in Ethiopia: a cross sectional study. *BMJ Open*. 2018; 8: e021107.
20. Derebe MM, Shiferaw MB, Ayalew MA. Low satisfaction of clients for the health service provision in West Amhara region, Ethiopia. *PLoS one*. 2017; 12(6): e0179909.
21. Kasa AS, Gedamu H. Predictors of adult patient satisfaction with nursing care in public hospitals of Amhara region, Northwest Ethiopia. *BMC Health Serv Res*. 2019; 19: 52.
22. Fleke AA, Demise YA, Garedew MG. Patient satisfaction and associated factors on in-patient nursing service at public Hospitals of Dawro zone, Southern Ethiopia. *Int J Caring Sci*. 2020; 13(2): 1411-1420.
23. Aregawi Gebreyesus, Determinants of client satisfaction with family planning services in public health facilities of Jigjiga town, Eastern Ethiopia. *BMC Health Serv Res*. 2019; 19: 618
24. Obi IE. Patient satisfaction with services at a tertiary hospital in south-east Nigeria. *Malawi Med J*. 2018; 30 (4): 270-275.
25. Demas T, Getinet T, Bekele D, et al. Women's satisfaction with intrapartum care in St Paul's Hospital Millennium Medical College Addis Ababa: a cross sectional study, Ethiopia. *BMC Pregnancy Childb*. 2017;17: 253.
26. Marama T, Bayu H, Merga M, et al. Patient Satisfaction and Associated Factors among Clients Admitted to Obstetrics and Gynecology Wards of Public Hospitals in Mekelle Town, Ethiopia. *Int J Gynaecol Obstet*. 2018; 2018: 1-9.
27. Benwu KM, Gebremedhin HG. A prospective study on elective surgical inpatient satisfaction with perioperative anesthesia service at Ayder comprehensive specialized hospital, Mekelle, Ethiopia. *BMC Anesthesiol*. 2019; 19: 46.
28. Geberu DM, Bikis GA, Gebremedhin T, et al. Factors of patient satisfaction in adult outpatient departments of private wing and regular services in public hospitals of Addis Ababa, Ethiopia. *BMC Health Serv Res*. 2019; 19: 869.
29. Gebremedhn EG, Lemma GF. Patient satisfaction with the perioperative surgical services and associated factors at a Gondar University Referral and Teaching Hospital. *Pan Afr Med J*. 2017; 27: 176
30. Worku M, Loha E. Assessment of client satisfaction on emergency department services in Hawassa University Referral Hospital, Hawassa, Southern Ethiopia. *BMC Emerg Med*. 2017; 17(1): 21.
31. Asefa A, Kassa A, Muluken D. Patient satisfaction with outpatient health services in Hawassa University Teaching Hospital, Southern Ethiopia. *J Public Health Epidemiol*. 2014; 6(2): 101-110,
32. Ekpe EE, Peter AI2Surgical patient's satisfaction with services at a tertiary hospital in south -south state of Nigeria. *J Mark Res*. 2016; 2(5): 157-162
33. Bintabara D, Ntwenya J, Maro II, et al. Client satisfaction with family planning services in the area of high unmet need: evidence from Tanzania Service Provision Assessment Survey, Tanzania. *Reprod Health*. 2018; 15: 127.
34. Tran BX, Dang AK, Vu GT, et al. Patient satisfaction with HIV services in Vietnam: Status, service models and association with treatment outcome. *PLoS One*. 2019; 14(11): e0223723.
35. Gabriel OO, Amali A, Peter AO. Assessing the level of clients' satisfaction on outpatient and inpatient health care Services, in a Tertiary Institution in North Central Nigeria. *Int J Contemp Med Res*. 2018; 5(3): 2454-7379.
36. Juliet NS, Makumbi FE, Kasangaki A, et al. Patient satisfaction with services in outpatient clinics at Mulago hospital, Uganda. *Int J Qual Health Care*. 2011; 23(5): 516-523.
37. Angella K, Fred N, Jane N. Patient satisfaction with medical consultations among adults attending Mulago hospital assessment centre. *S Afr Fam Pract*. 2016; 58(3): 87-93.
38. David MW. Factors affecting patient satisfaction at Kenyatta National Hospital, Kenya: A Case of Cancer Outpatient Clinic. 2013.
39. Sisay S, Alemayehu S. Assessment of adult patient satisfaction and associated factors with nursing care among admitted patient in medical, surgical, obstetrics and gynecology ward in Mizan-Aman General Hospital, Bonga and Tepi Hospitals, Southwest Ethiopia 2016. *JOJ Nurs Health Care*. 2018; 8(5): 555748.
40. Tahir A, Nega A, Asrat D, et al. Levels of adult patient's satisfaction with nursing care in Selected Public Hospitals in Ethiopia. *Int J Health Sci*. 8(4): 375-383.
41. Getahun B, Nkosi ZZ. Satisfaction of patients with directly observed treatment strategy in Addis Ababa, Ethiopia: A mixed methods study. *PLoS one*. 2017; 12(2): e0171209.
42. Teshome M, Fasil T, Hailu M. Patients satisfaction towards radiological service and associated factors in Hawassa University Teaching and referral hospital, Southern Ethiopia. *BMC Health Serv Res*. 2017; 17(1): 441.
43. Haftom D, Berhe T, Solomon H. Assessment of patients' satisfaction and associated factors among outpatients received mental health services at public hospitals of Mekelle Town, northern Ethiopia. *Int J Ment Health Syst*. 2018; 12(1): 38.
44. Karanja LM. Patient's ratings of the quality of their outpatient visit to clinical officers in Kenya. *Ethiop J Health Sci*. 2012; 22(3): 145-152.
45. Goben KW, Abegaz ES, Abdi ST. Patient satisfaction and associated factors among psychiatry outpatients of St Paulo's Hospital, Ethiopia. *Gen. Psychiatry*. 2020; 33(1): e100120.
46. Gitobu CM, Gichangi PB, Mwanda WO. Satisfaction with delivery services offered under the free maternal healthcare policy in Kenyan Public Health Facilities. *Int J Environ Res Public Health*. 2018; 2018: 1-9.