

# Client's satisfaction towards emergency medical care at Ayder comprehensive specialized hospital, Mekelle, Ethiopia

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## Original Research

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# Abstract

**Background:** As assessing client's experience are important guide towards services improvement, providers will need to fully understand patient satisfaction level and their determinants. This study was aimed to assess the level of satisfaction towards the emergency medical care and associated factors at emergency department of Ayder specialized comprehensive hospital, Mekelle, Ethiopia.

**Methods:** A cross-sectional study was conducted from March 1–30, 2019. Systematic random sampling method was used to enroll study participants. Data was collected using a standard Brief Emergency Department Patient Satisfaction Scale questionnaire by trained data collectors. Data was entered into EpiData 3.1 then exported and analyzed by SPSS version 22. Binary and multiple logistic regression was used to assess the predictor's patient satisfaction.

**Results:** A total of 299 participants were enrolled in the study with a response rate of 99.3%. The overall client's satisfaction was 81.9%. The lowest satisfaction rate was reported towards emergency room environment, and patient family satisfaction 37.5%, and 49.8% respectively. Educational status those who were able to read and write (AOR = 3.9, 95% CI: 1.4, 10, P = 0.008), those who arrived during the morning shift of the day (AOR = 3.6, 95% CI: 1.6, 8.7, p = 0.002), those who waited < 15 minutes to be seen by a doctor (AOR = 1.3, 95% CI: 1.003, 1.4), having felt discriminated (AOR = 1.5, 95% CI: 1.003, 1.4) were significantly associated determinants of client satisfaction.

**Conclusions:** The overall client's satisfaction in this study was found to be good. There is a low satisfaction towards emergency room environment and patient's family courtesy. It is important to readjust emergency room services to improve client's courtesy, avoid feeling of discrimination by clients and overall to improve the quality of care in the emergency department.

## Introduction

Satisfaction refers to patients' emotions, feelings and their perception of delivered healthcare services (1). On the other hand, patient's satisfaction is defined as a degree of congruence between patient expectations of ideal care and their perceptions of real care receive (2).

As the healthcare industry shifts toward patient-centered models, providers will need to fully understand patient satisfaction measures and how they affect their practices. Now a day, the healthcare regulators have shifted towards a market-driven approach of turning patient satisfaction surveys into a quality improvement tool for overall organizational performance (3). Measuring client or patient satisfaction has become an integral part of hospital/clinic management strategies across the globe (4). The emergency room is the main gateway for patients visiting the hospital and with the highest turnover of patients where they came with acute, life threatening medical need. Satisfaction within the emergency departments services could affects the overall satisfaction with hospitalization and the evaluation of the patient and companion satisfaction towards the ED as well as the institution (5, 6).

Client's satisfaction levels to the ED care has been affected by factors like: visiting time of the day, waiting time, outpatient site visited, feeling of discrimination, interpersonal skills/staff attitudes, provision of information/explanation, perceived waiting times, financial problem, male gender, cleanliness of the emergency area, discharge information, patient courtesy (7–15).

Emergency medicine in Ethiopia is the newly developing department facing different difficulties and with a promising progress over the past years (16) but studies on client's or patient's satisfaction are scarce. This study was aimed to determine the level of satisfaction and factors associated with client's satisfaction at ED of Ayder comprehensive specialized hospital (ACSH).

## **Methods**

### **Study design and study area**

An institution-based cross-sectional study was conducted from March, 1–30, 2019, at ACSH, ED, Mekelle, Tigray, Ethiopia. ACSH is a tertiary care teaching university hospital, the main referral center in the Tigray region, with a catchment area of the Whole Tigray region and neighboring regions of Amhara and Afar. The hospital is supposed to give service for more than 5 million peoples with in the catchment area and has the busiest emergency department due to the lack of nearby tertiary care giving hospitals.

### **Study participants**

Study participants were recruited using a systematic random sampling method. Those with the ability to communicate in common regional language (Tigrigna) and agreed to participate were included in this study.

### **Sample size calculation**

The sample size was determined using a single population proportion formula with the assumption of: 77% satisfaction level of the patients were considered from a study conducted in Jimma (17), 95% confidence level, and 5% margin of error. Including a 10% non-response rate, yielded a total 301 patients.

### **Data collection tool**

Data was collected using modified version of structured Brief Emergency Department Patient Satisfaction Scale (BEDPS) which was developed to assess patient satisfaction towards the services provided in the ED with 5 response options Likert scale questionnaire (18). Overall the questionnaire contains: Socio-demographic part, medical characteristics of the patient and BEDPS 20 questions divided into five parts i.e. ED staff, ED environment, patient care satisfaction, general patient satisfaction, and patients family satisfaction. The English version questionnaire was translated into the local language (Tigrigna) first then translated back into English. The patient satisfaction measure Likert scale questionnaire was graded as very dissatisfied "1", dissatisfied "2", fair/indifferent "3", satisfied "4", and very satisfied "5". Those scoring the mean or below were considered as dissatisfied while a score above the mean was labeled as satisfied.

# Data collection procedure

The total sample was distributed into different working shifts considering, busy work hours, different providers, day of the week and the type of client complaint were considered to have had an effect on satisfaction level. The study subjects (the patient him/herself or if the patient was unconscious or in distress, the care takers) were interviewed face to face by three trained research assistants (graduating class Nursing Students) immediately after getting an emergency services i.e. while they are being admitted to the inpatient ward, consulted to respective specialty units or before they were discharged to home after getting emergency medical services.

## Data analysis

Data was cleaned, coded, entered in to Epidata version 3.1. and then exported into SPSS version 22 for analysis. Descriptive statistics were used to determine the satisfaction level, calculate the socio-demographic characteristics and disease profiles. Bivariate and multivariate logistic regression was used to identify factors affecting the patient satisfaction. Level of significance was declared at p-value < 0.05.

## Result

Out of the three hundred one participants approached 299 had completed the survey making a response rate of 99.3%. The mean  $\pm$  SD age of the respondents was  $35 \pm 15$  years and more than half (51.2%) of them were males. Majority of the respondent (54.2%) was their first time visit to the hospital. One hundred sixty four (54.8%) of the participant had arrived at the ED during the night shift followed with evening 74 (24.7%) and morning shifts 61 (20.4%). Nearly two third (66.2%) of them were checked in the medical emergency OPD. With the degree of confidence they feel to get good service in the future 113 (37.8%) are confident and 131 (43.8%) are very confident. More than half (56.1%) of the patients were admitted to the inpatient ward after their ED checkup. The mean  $\pm$  SD waiting time until seen by a doctor was  $42 \pm 66$  minutes, ranging 5 minutes – 3 hours [Table 1].

Table 1  
Socio-demographic characteristics and health services of the study participants at ED of ACHS  
(n = 299)

<b>Variables</b>	<b>Category</b>	<b>N (%)</b>
Sex	Male	154 (51.5)
	Female	145 (48.5)
Age (years)	1–10	33 (11)
	11–20	30 (10)
	21–30	116 (38.8)
	31–40	52 (17.4)
	41–50	27 (9)
	51–64	27 (9)
	≥ 65	14 (4.7)
	Educational status	Illiterate
Able to read and write		95 (31.8)
Primary school		18 (6)
Secondary school		45 (15.1)
Diploma		34 (11.4)
Degree		41 (13.7)
Time of visit	Morning	61 (20.4)
	Evening	74 (24.7)
	Night	164 (54.8)
Frequency of visit	First time	162 (54.2)
	Two or more	137 (45.8)
Respondent	Patient	165 (55.2)
	Attendant	134 (44.8)
OPD site visited	Medical emergency	198 (66.2)
	Surgical emergency	64 (21.4)
	Pediatric emergency	37 (12.4)

\*=discharged, referred

<b>Variables</b>	<b>Category</b>	<b>N (%)</b>
Subsequent management decision	Managed in ER	127 (42.5)
	Admitted	168 (56.1)
	Others*	4 (1.4)
Degree of confidence to get good service in the future	Very confident	113 (37.8)
	Confident	131 (43.8)
	Somewhat confident	53 (17.7)
	Not confident	2 (0.7)
Do you feel discriminated	Yes	29 (9.7)
	No	270 (90.3)
Residency	Urban	197 (65.9)
	Rural	102 (40.1)
Waiting time till seen by Dr.(Mean $\pm$ SD in minutes)		42 $\pm$ 66
*=discharged, referred		

## Medical condition of the patients

Half of the study participants had a history of visits to the hospital before and majority (38.1%) of them had stayed in the emergency department for 3–6 hours [Table 2].

Table 2  
 Medical condition characteristics of patients visiting the ED of ACSH (n = 299)

Medical characteristics	Category	N (%)
Emergency department visit before	Yes	150 (50.2)
	No	149 (49.8)
Duration of stay in the emergency department	1–2 hours	28 (9.4)
	3–6 hours	114 (38.1)
	7–13 hours	38 (12.7)
	14–21 hours	22 (7.4)
	≥ 24 hours	97 (32.4)
History of admission to the hospital	Yes	139 (46.5)
	No	160 (53.5)
Presence of chronic illnesses	Yes	153 (51.2)
	No	146 (48.8)
Type of chronic illness	Hypertension	14 (9.1)
	Cardiac problem	22 (14.4)
	Cancer	17 (11.1)
	Diabetes mellitus	24 (15.7)
	Asthma	24 (15.7)
	Others	52 (34)

## Client's satisfaction towards the ED services

The vast majority of respondents (81.9%) were satisfied with the emergency care services provided. In the five categories of services they got, the respondents satisfaction rate to the emergency staff courtesy, emergency department environment, physician care, general patient satisfaction and patients family satisfaction were 80.3%, 37.5%, 75.9%, 70.9% and 49.8% respectively [Table 3].

Table 3

The overall satisfaction rate of participant towards the ED services in ACSH (n = 299)

Questions	Satisfied (%)	Dissatisfied (%)
<b>Emergency staff courtesy</b>		
1. Nurses care about my treatment	217(72.6)	82(27.4)
2. Nurses inform me about the remaining of the treatment	224(74.9)	75(25.1)
3. Nurses attended to me patiently	224(74.9)	75(25.1)
4. Nurses relieved me of the pain well	227(75.9)	72(24.1)
5. Admission staff guided me appropriately	215(71.9)	84(28.1)
6. The behavior of the admission staff was suitable	204(68.2)	95(31.8)
The overall satisfaction of ED staff courtesy	240(80.3)	59(19.7)
<b>Emergency department environment (EDE)</b>		
7. The environment of the emergency room was calm and quiet	140(46.8)	159(53.2)
8. Emergency room was well equipped	187(62.5)	112(37.5)
9. The environment of the emergency room was hygienic	185(61.9)	114(38.1)
The overall satisfaction of ED environment	112(37.5)	187(62.5)
<b>Physician care satisfaction (PCS)</b>		
10. The physician told me about my treatment course	<b>173</b> (57.9)	<b>126</b> (42.1)
11. The behavior of the physician was respectful	192(64.2)	107(35.8)
12. The physician's explanation about the remaining of treatment was enough	203(67.9)	96(32.1)
13. The physician spent a sufficient time examining me	222(74.2)	77(25.8)
The overall satisfaction of physician care	227(75.9)	72(24.1)
<b>General patient satisfaction (GPS)</b>		
14. The waiting time before seeing the doctor was appropriate	177(59.2)	122(40.8)
15. The waiting time before admission process was appropriate	187(62.5)	112(37.5)
16. I would recommend this hospital to my acquaintances	170(56.9)	129(43.1)
17. I am satisfied with the quality of services in the emergency room	174(58.2)	125(41.8)
18. The emergency room of this hospital is well functioning	192(64.2)	107(35.8)
The overall score of general patient satisfaction	212(70.9)	87(29.1)

Questions	Satisfied (%)	Dissatisfied (%)
<b>Patient's family satisfaction (PFS)</b>		
19. The family of the patient are respected in this hospital	140(46.8)	159(53.2)
20. Family can spend an appropriate amount of time besides the patient	132(44.1)	167(55.9)
The overall satisfaction patient's family care	149(49.8)	150(50.2)
Total overall satisfaction level of the patients towards the ED services	245(81.9)	54(18.1)

## Determinants of patient satisfaction towards emergency medical care

On multiple logistic regression analysis educational status was significantly associated with the level of satisfaction. Where respondents who were able to read and write were 3.9 times more likely to be satisfied with the ED services compared to the degree and above holders (AOR = 3.9, 95% CI: 1.4, 10, P = 0.008). Patients who arrived during the morning shift of the day were 3.6 times more likely to be satisfied compared to their counterpart arriving at night (AOR = 3.6, 95% CI: 1.6, 8.7, p = 0.002). Another determinant was waiting time till seen by the doctor. Those who waited < 15 minutes to be seen by a doctor were 1.3 times more likely to be satisfied than those who waited greater than fifteen minutes (AOR = 1.3, 95% CI: 1.003, 1.4). Whereas respondents who felt discriminated in the ED were less likely to be satisfied (AOR = 0.2, 95% CI: 0.1, 0.7) [Table 4].

Table 4  
Factors associated with client's satisfaction at the ED of TASH (n = 299)

Variables	Category	Level of satisfaction		OR (95%CI)		P - value
		Satisfied	Not satisfied	Crude	Adjusted	
Educational status	Illiterate	54(22.2)	12(20.3)	1.5(0.6,3.4)	1.3(0.5,3.3)	0.284
	Able to read & write	88(36.7)	7(11.9)	4.2(1.6,10)	3.9(1.4,10)	0.008*
	Primary school	13(5.4)	5(8.5)	0.8(0.2,2.8)	0.8(0.2,3.0)	0.898
	Secondary school	29(12.1)	16(27.1)	0.6(0.2,1.3)	0.6(0.2,1.5)	0.617
	College and above	56(23.4)	19(32.2)	1	1	1
Time of visit	Morning	146(61)	18(30.5)	4.5(2.2,9.3)	3.6(1.6,8.7)	0.002*
	Evening	55(22.7)	19(32.2)	0.2(0.1,0.2)	1.5(0.6,3.5)	0.361
	Night	39(16.3)	22(37.3)	1	1	1
Feeling of discrimination	Yes	13(5.4)	16(27.1)	0.1(0.06,0.3)	0.2(0.1,0.7)	0.006*
	No	227(94.6)	43(72.9)	1	1	
Waiting time till seen by a Dr.	< 15 minutes	121(50.4)	40(67.8)	1(1,1.03)	1.3(1.0,1.4)	0.002*
	> 15 minutes	119(49.6)	19(32.2)	1	1	

\*p- value < 0.05, OR: odds ratio, COR: crude odds ratio, AOD: adjusted odds ratio, CI: confidence interval, SD: standard deviation

## Discussion

The recently advancing department in the country, emergency department has become the hospital's front door, with majority of admission to a hospital passing through it. The increased demand for the service much of it inappropriate to the site of care, has placed considerable strain on many facilities, leading to long wait times, crowded conditions, boarding patients in hallways, and increased ambulance diversions (23). Due to the fact that the ED is a unique department among other medical care services, understanding of the level of client's satisfaction and factors affecting it is essential (24).

Our study showed that the overall client's satisfaction level to the service given in the ED was good (81.9%). This is in line to the studies conducted in southern Ethiopia, Hawassa 86.7% (19), and Jimma 78%. But, higher compared to study conducted in Gondar 51.7% (7), and Morocco 66%, (20). The variation in the level of satisfaction might be attributed to the difference in the tool used to measure the level of satisfaction, difference in clinical characteristics (medical condition on arrival) of the patients (7, 20).

The present study showed that respondents had lower satisfaction with regards to the emergency department environment and patients' family handling at the ED, 37.5% and 49.8% respectively. Similarly, a study from Iran had also showed a lowest satisfaction towards pleasantness of the waiting area (21). As it has been shown previously providing a comfort environment, interpersonal skills in terms of courtesy, respect by health care providers in addition to communication skills, explanation and clear information, which are more essential and influential than other technical skills (12) should be promoted by health care providers at the ED.

There was a significant association with the morning shift admission of patients and level of satisfaction. Consistent with studies by Zohrevandi and press Ganey report (22, 23) patients who arrived during the morning shift of the day were more likely to be satisfied compared to their counterparts arriving at the night shift. This might be due to the additional number of staffs (senior physicians, medical and nursing students) during the morning shift of the day may give an extra advantage to the regular working staffs since this is a teaching hospital. While during the night shift those extra staff members may not be assigned and majority of the patient (54.8%) had arrived to the ED at night shift, overcrowding of the ED might have also its own effect.

The mean waiting time for patients till seen by a doctor was 42 minutes which was similar with finding from Morocco 47.5 minutes (20) but, higher compared to the study from Iran 10 minutes (21). As reported from previous studies lengthy waiting time till seen by a doctor was negatively associated with client's level of satisfaction (8, 20, 21, 24) In line with this we found clients who waited < 15 minutes to be seen by a doctor were more likely to be satisfied than their counter parts of those who waited greater than fifteen minutes.

Another determinant associated with patient satisfaction was educational status. Where those who were able to read and write were more likely to be satisfied than their counterpart of degree and above holders. But, in contrary in Damghi's study patients with a lower educational level were less satisfied, which was justified by their rescue was dependent on good management, despite uncomfortable conditions (20).

Having felt discriminated was negatively predictor of clients. Similarly, a study from Gondar also reported that those patients who felt discriminated were 2.5 times more likely to be dissatisfied with the ED services (7).

## **Conclusion**

In conclusion, the overall patient satisfaction towards the emergency care was good. The lowest satisfaction level was recorded in the emergency department environment and patient family satisfaction measures. Being able to read and write, waiting < 15 minutes to be seen by the doctor, visiting time at the morning shift of the day, were significantly associated predictors of clients satisfaction. Whereas, having felt discriminated was negatively associated with the client's satisfaction. It is important to readjust emergency room services to improve client's courtesy, avoid feeling of discrimination by clients and overall to improve the quality of care in the emergency department.

## Limitations

In case of comatose/patients in distress or pediatric patients, relatives or patient attendants were asked to fill the questionnaire and this might have its own limitation in expressing the true feeling of the patient opinion. Severity of their illness was not considered and this might also had an effect on their satisfaction.

## Abbreviations

ACSH: Ayder comprehensive specialized hospital, AOD: adjusted odds ratio, BEDSS: Brief emergency department satisfaction scale, CI: confidence interval, COR: crude odds ratio, ED: Emergency department, ER: emergency room, OPD: outpatient department, OR: odds ratio, SD: standard deviation, SPSS: statistical package for social science.

## Declarations

## Availability of data and materials

Data and materials may be requested by contacting the corresponding author, Mr. Goitom Molalign.

## Ethics approval and consent to participate

Ethical approval for the study was granted by Mekelle University, college of health sciences, School of Nursing, ethical committee. The committee approved the research and a letter was submitted to Ayder Comprehensive Specialized Hospital Emergency department unit for conducting the research ERC 1056/2019. All study participants were notified about the purpose of the study, the right to refuse to participate in the study, and confidentiality of the information gathered. Written Consent was also obtained from each voluntary study participants and for age less than 18 years old consent was obtained from the parents or guardian.

## Competing interests

The authors declare that they have no competing interests.

## Consent for publication

Not applicable

# Author's contribution

GM conceived and designed the study, performed analysis, Interpretation of data, and drafts the manuscript. GM, NA, and BG assisted with the design, performed analysis, interpretation of data and the critical review of the manuscript. All authors have read and approved the final manuscript.

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