



# Determinants of patient satisfaction with pharmacy services at Felege Hiwot comprehensive specialized hospital, Bahir Dar, Ethiopia

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**Background:** Patients have explicit desire for quality services when they visit health institutions. Patient satisfaction is a primary means of measuring the effectiveness of healthcare delivery. However, inadequate discovery of their needs may result in patient dissatisfaction. Patients who are satisfied with pharmaceutical care are likely to adherence, seeking for medical attentions and take medications properly. Providing better access to quality pharmacies is a way to improve patient satisfaction with healthcare services.

**Study objective:** The study was aimed to assess patient satisfaction with pharmacy services at Felege Hiwot Comprehensive Specialized Hospital (FHCSH).

**Methods and materials:** An institution-based cross-sectional study design was conducted at FHCSH from 1 May 2021 to 30 October 2021. Data were collected by interview with structured questionnaires. Then the data were coded, entered, and then analyzed by SPSS version 23. The association between predictors and outcome was measured using bivariate logistic regression.

**Result:** In this study, 384 study participants were included. Majority of the participants were males (55.37%,  $N=227$ ). The overall satisfaction score of the participants of this study was 65.37%. In our study, clients showed greater satisfaction towards pharmacists' commitment to correct myths (92%), pharmacist availability (88.78), and cleanliness (87.8%). Multivariate analysis indicated physical restriction [adjusted odds ratio (AOR) = 6.95%; 95% CI (2.98, 25.9)] and rural residence [AOR = 2.43; 95% CI (1.71, 9.6)] had significant association with pharmacy service dissatisfaction. Among the quality pharmacy service indicators, counselling on how medications work [AOR = 9; 95% CI (1.48, 8.85)], keeping to dosage regimen [AOR = 7.3; 95% CI (5.49, 11.06)], and advice on the current medical condition had greater odds of client dissatisfaction.

**Conclusion:** The findings of the current study showed that patients' satisfaction towards outpatient pharmacy services provided by FHCSH is very low as it is indicated in their perception towards revealing written information about medication use, medication availability, medication storage, and instructions about medication side effects.

**Keywords:** FHCSH, pharmaceutical services, satisfaction, service quality

## Introduction

Healthcare quality is becoming a global issue; it has been going through transformation to meet the ever-increasing needs of patients. For many years, the quality of health services were being measured on the basis of professional practice standards; however, taking into consideration the additional pillars of quality service indicators, patient's perception has been predominantly

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## HIGHLIGHTS

- Patients' satisfaction towards outpatient pharmacy services provided is very low.
- The overall satisfaction score of the participants of this study was 65.37%.
- Clients showed greater satisfaction towards pharmacists' commitment to correct myths (92%), pharmacist availability (88.78), and cleanliness (87.8%).
- Among the quality pharmacy service indicators, counselling on how medications work was the major determinant of pharmacy service satisfaction.
- Information about medication use, medication availability, medication storage, and instructions about medication side effects strongly associated with low satisfaction.

becoming an important useful for measuring the quality of healthcare services<sup>[1]</sup>.

It is believed, therefore, that achieving the best of patient satisfaction has been set in one of the missions and vision of health institutions, besides excelling in professional practice<sup>[2]</sup>. Patient satisfaction based on the quality of health service could be viewed as a psychological congruence between an individual's expectations and reality observed or perceived<sup>[3]</sup> Patients' expectations and experience subsequently to obtain services from

a healthcare providers should adequately and consistently be taken into account to improve<sup>[4]</sup> service provision as per the perception, emotion and a feeling of clients; an exemplary health service provider always considers appraisal of experience on health institutions of various levels<sup>[2]</sup>. These health assess the relatedness of patient satisfaction with the whole health system, to measure health system responsiveness across the different sectors<sup>[1]</sup>.

Like other components of the health system, pharmacy service is considered an essential indicator of healthcare delivery status in health institutions. It involves the implementation of drug therapy management by pharmacy professionals in the aspect of drug information provision to promote safe and cost effective medication use for better therapeutic outcome, and help medications available when needed by the clients<sup>[5]</sup>. In addition, the provision of an effective pharmacy services is also crucial for early recognition and prevention of medication errors, adverse drug events, and for the prevention and containment of antimicrobial resistance<sup>[4]</sup>. Evidence showed that improving patient satisfaction may help maintaining and maintain a good relationship with healthcare providers and adhere to medication instructions, managing their own condition, and refilling medications<sup>[6]</sup>; patients give a high worth of intense socio-psychological and communicative relationships with their caregivers<sup>[7]</sup>.

Thus, health facilities should work with capacity building by professionals, for instance, pharmacists, to improve healthcare service delivery (Service structure, processes, and outcomes) more effectively<sup>[8,9]</sup>. In this regard, health authorities understand the patients as the best judges, who assess and provide comments on the overall quality of the healthcare system. Ultimately, the demerits of the system might be resolved through the rectification of the system weaknesses<sup>[1]</sup>. In fact, pharmacists use feedback from patients to check whether the service has reached patients' needs and sort out facets that failed to meet their expectations<sup>[10]</sup>.

In Ethiopia, various reports have identified patient satisfaction as a major gap of the healthcare service. As all other hospitals and healthcare centres, aims to provide effective healthcare services and satisfying care for all its patients through its departments. To our knowledge, none of the recent published data has directly addressed the degree and reasons of satisfaction/dissatisfaction of patients with pharmacy services in this hospital.

## Methods

### Study area and period

The study was conducted in Bahir Dar city, Amhara regional state, Ethiopia from 1 May 2021 to 30 October 2021. The city is located in the North West of Ethiopia, 565 km away from Addis Ababa, at FHCSH. There are three governmental hospitals in the city. FHCSH is a large institution serving a population which accounts about 5 million. The hospital has seven admission wards (internal medicine, paediatrics, gynaecology/obstetrics, surgery, dentistry, psychiatry, and ophthalmology) and five pharmacies (outpatient pharmacy, emergency pharmacy, inpatient pharmacy, antiretroviral treatment pharmacy, and gynaecologic pharmacy). Assessment of patient satisfaction with pharmacy service was carried out in the outpatient pharmacy of the hospital. This research was retrospectively registered at 94 [www.researchregistry.com](http://www.researchregistry.com) with unique identifying number

researchregistry 8905 and reported according to 95 STROCSS<sup>[11]</sup>.

### Study design

An institution-based cross-sectional study design was conducted on patients 18 and above years of age.

### Sample size determination and sampling procedure

The sample size required for the study was determined using a single population proportion formula. Assuming  $P=59.4\%$  (0.594) and  $d$  (sampling error) = 5% and using 95% confidence level: Where,  $n$  = sample size,  $z$  = statistic for 95% level of confidence,  $d$  = precision/ margin of error/,  $P$  = estimate of the population. After all, with an added contingency of 10% for nonresponse, the final sample size was 410. The first participant was selected by lottery method and then patients were enrolled every six using a systematic sampling method.

### Inclusion and exclusion criteria

Patients 18 and above years of age were included in the study; and there was nothing to exclude.

### Data collection tool

The data were collected using a structured interview questionnaire prepared by critically reviewing related articles in the field<sup>[12-14]</sup>. In the tool, included were participants opinions on pharmacy services and cost, medication use information, pharmacists' commitment and respect to patients, pharmacists' availability, assurance of confidentiality and waiting time, and infrastructure and appearance of the pharmacy settings. In overall satisfaction, patients were asked to rate pharmacy service on a five-point Likert scale (1: very satisfied, 2: satisfied, 3: neutral, 4: dissatisfied, and 5: very dissatisfied). For the sake of convenience, the five-point scale was reduced to three-point Likert scale (1: satisfied, 2: neutral, and 3: unsatisfied).

The structured questionnaire's was initially prepared in English and translated into the local language, Amharic and then translated to English to maintain its consistency. Reliability analysis showed that the internal consistency of the instrument was 0.82 Cronbach's alpha value.

### Operational definitions

#### Pharmacist availability

Pharmacist is available whenever client goes to the dispensing unit/pharmacy or clients wait for some time until the pharmacist is getting back to work.

#### Myths or mistakes

Any belief that hinders patients from taking medications (religious or cultural belief).

#### Physical restriction

A physical disability or debilitating disease conditions that affect the patient to reach at dispensing units and receive a medication.

**Space adequacy**

Sufficient space is provided to encompass clients at medications receiving area.

**Hurriedness**

Time spent for at least three minutes in orienting each patient.

**Labelling of medication**

A written, printed or graphic matter upon any drugs or any of its container, or accompanying such a drug to avoid imperfect drug information or misinterpretation and hence medication error.

**Data quality control and data collection process**

Before the actual data collection, the tool was pretested with 20 participants in the same setting. The collected data was reviewed and checked for completeness, accuracy, and clarity. Data collection was undertaken by three undergraduate pharmacy students by interviewing patients using the structured questionnaire as an interview guide.

**Data entry and analysis**

IBM SPSS (version 23) was used to analyze the collected data. The findings were described with frequency, percentage, mean, median, and mode. The overall satisfaction score was determined by adding each participant’s service satisfaction. Then the mean of score less than or equal to 30 was considered as an indicator of satisfaction and a value greater than 30 as dissatisfaction. Then the data were coded, entered, and then analyzed by SPSS version 23 for statically analysis. The Shapiro–Wilk normality test was used to check whether data was normally distributed and the association between the predictor and outcome variables was determined using binary logistic regression. In the univariate analysis, each factor was checked for association with the outcome variable. In this case, *P* value less than 0.2 was used to screen predictors for inclusion in the multivariate analysis. The crude odds ratio and adjusted odds ratio (AOR) were determined and *P* less than 0.05 was considered as statistical significance.

**Ethical consideration**

Ethical clearance was obtained from the Institutional Review Board (IRB) of Bahir Dar University, College of medicine and health science. Following the approval by IRB, official letter of cooperation was written to the concerned body. The ethical clearance reference number was phr02/12/01/2014 E.C. Moreover, prior to conducting the study, the purpose and objective of the study were described to the study participants and a written informed consent was obtained. Respondents were allowed to refuse or discontinue participation at any time they want. Information was collected autonomously and confidentiality was assured and maintained throughout the study period.

**Results**

**Socio-demographic characteristics of respondents**

In this study, 410 participants were enrolled, of which 55.37% of the respondents were males. Majority of the

respondents (35.12%) were in the age range of 18–27 years. Regarding residence, 63.41% of participants lived in urban areas, and 19.76% of the total participants were illiterate. The study also revealed that 20.98% of the participants had physical restriction; (33.41%) of the respondents had one or more chronic diseases. Most of the respondents (70%) visited the hospital, visited the hospital more than once or, while the rest 30% of them visited the hospital for the first time (Table 1).

**Satisfaction scores of patients**

In our study, clients had negative perception on counselling area (50%) and convenience of waiting area (53.66%). More positive perceptions were recorded on the adequacy of staff number (64.88%) and convenience of pharmacy location (54.87%) (Table 2).

As depicted in Table 3, the respondents were highly satisfied with pharmacists’ commitment to correct mistakes or myths with respect (92.44%), pharmacists’ availability of their workplace (88.78%), cleanliness of the environment and shelves (87.8%), understandability of the language (85.855), space adequacy

<b>Variables</b>	<b>Frequency (M)</b>	<b>Percent (%)</b>
Sex		
Female	183	44.63
Male	227	55.37
Age		
18–27 years	144	35.12
28–37 years	136	33.17
38–47 years	81	19.76
≥ 48 years	34	8.29
≥ 60	15	3.66
Area of residence		
Urban	260	63.41
Rural	150	36.59
Level of education		
Illiterate	81	19.76
Primary school	52	12.68
Secondary	100	24.39
University	163	39.76
Postgraduate and above	14	3.41
Employment status		
Student	45	10.98
Occupation		
Farmer	45	10.98
Civil servant	95	23.17
Merchant	132	32.20
Private sector employee	62	15.12
Others	31	7.56
Physical restriction		
Yes	86	20.98
No	324	79.02
No. chronic diseases		
No chronic disease	273	66.59
≥ 1 chronic disease	137	33.41
No. visits		
First visit	123	30
More than one visit	287	70

**Table 2****Study participants' opinion towards the pharmacy setting and cost**

Variables (N= 250)	Not, N (%)	Somewhat/neutral, N (%)	Yes, N (%)
The pharmacy location is convenient	136 (33.18)	49 (11.95)	225 (54.87)
The private counselling area is comfortable and convenient	205 (50)	61 (14.88)	144 (35.12)
The waiting area is comfortable and convenient	220 (53.66)	82 (20)	108 (26.34)
The dispensary is clean	184 (44.88)	100 (24.39)	126 (30.73)
The cost of the medication is fair	143 (34.88)	62 (15.12)	205 (50)
The staff numbers are enough to the service	108 (26.34)	36 (8.78)	266 (64.88)

(85.85%) and reduction of hurriedness by the pharmacists (85.61%).

In our study, major areas of pharmacy service indicators, for which the majority of the participants were dissatisfied, were identified. In this regard, pharmacists' preparedness to listen and answer questions (51.46%) and making clients understand instructions every time (50.24%) were the major causes of dissatisfaction. Proper labelling of medication use (49%) and pharmacists' role to take important drug and health-related history (44.15%) were also the main causes of customer dissatisfaction with pharmacy service (Table 3).

Of all participants, 65.37% of them were satisfied with pharmacy service. The mean of patients' satisfaction was  $32.4 \pm 7.8$  (Table 4). Looking at the impact of physical restriction in participants, 86 (20.98%) of them required assistance to receive medications from dispensary units (Table 5). Nearly half that is 208 respondents believed that the time taken to serve reasonable counselling were adequate. The pharmacist role in giving information on how to solve medication side effects if occur at any time was responded as not (52.92%), somewhat/neutral (16.59%), and yes (30.49%). Our study assessed that the pharmacist explained how each of

medication was supposed to help in 170 of the respondents. The results also showed that the pharmacist advise on current medical condition and advice on missed doses were not seen as efforts done by the pharmacists in 44.88% and 53.66% of the clients, respectively (Table 5).

## Discussion

Assessing the level of perception and satisfaction of clients with their healthcare services has become important globally. Similarly, considerable research supports using satisfaction rating to measure the quality of care from the patients' perspective<sup>[15]</sup>. Of the 410 participants, 225 (54.87%) and 266 (64.88) of them agreed that the pharmacy location was convenient and the number of staffs was adequate, respectively. The results showed better agreement status of participants compared to the results of other study conducted in Ethiopia<sup>[13]</sup>. On the other hand, the least proportion (26.34%) of participants provided a positive response on the convenience of the waiting area. This was a bit lower than a report of other study<sup>[13]</sup>.

This study revealed that the overall satisfaction of the respondents was (65.37%), which was higher than the level of

**Table 3****Frequency distribution of the participants' responses to the questionnaire items (n = 410)**

Pharmacists' communication	Satisfied, n (%)	Neutral, n (%)	Dissatisfied, n (%)
Instructions were understandable every time	178 (43.41)	26 (6.34)	206 (50.24)
Language was easy to understand medication use	352 (85.85)	15 (3.66)	43 (10.49)
The pharmacist was prepared listen and answer your questions	176 (42.93)	23 (5.61)	211 (51.46)
Space is adequate	352 (85.85)	15 (3.66)	43 (10.49)
The pharmacist response was understandable	288 (70.24)	36 (8.78)	86 (20.98)
The pharmacist explains how to take medication	299 (72.93)	27 (6.59)	84 (20.49)
Medication and was labelled properly	186 (45.37)	23 (5.61)	201 (49.02)
The politeness and interest of pharmacist was good	270 (65.85)	23 (5.61)	117 (28.54)
Pharmacists provide service equally	308 (75.12)	26 (6.34)	76 (18.54)
Pharmacists treat the client with dignity and respect	328 (80)	32 (7.8)	50 (12.2)
Service waiting time in the pharmacy was fair	266 (64.88)	53 (12.93)	91 (22.19)
The pharmacist took important drug and health-related history	184 (44.88)	45 (10.98)	181 (44.15)
The pharmacist told information about proper storage of medication	307 (74.88)	13 (3.17)	90 (21.95)
The pharmacist told you the medication name	323 (78.78)	20 (4.88)	67 (16.34)
The pharmacist demonstrated to you how to open or close the medication containers	337 (82.20)	23 (5.61)	50 (12.20)
The pharmacist corrected your mistakes, misconceptions or myths with respect	379 (92.44)	11 (2.68)	20 (4.88)
You have ever been to the pharmacy and met the pharmacist's absence	364 (88.78)	12 (2.93)	34 (8.29)
The pharmacist sometimes cannot provide the answer to your questions due to hurriedness	351 (85.61)	17 (4.15)	42 (10.24)
There is a private area for discussion with the Pharmacist	298 (72.68)	21 (5.12)	91 (22.20)
The pharmacist is available	307 (74.88)	38 (9.27)	65 (15.85)
The environment and the shelves are usually clean	360 (87.80)	9 (2.20)	41 (10.00)

**Table 4**  
**Study participants' satisfaction scores towards pharmacist services**

The summed satisfaction	Frequency (N= 410)	Percent
Mean score (SD)	32.4 + 7.8	
Median score (Range)	31(23–60)	
Satisfaction score $\leq$ 30 (satisfied)	268	65.37
Satisfaction score $>$ 30 (dissatisfied)	142	34.63

satisfaction towards outpatient pharmacy services in Dessie Town Public Hospitals (59.9%)<sup>[16]</sup>, Tikur Anbessa Specialized Hospital (51.6%), Yekatit 12 Hospital Medical College (47%), Debre Tabor comprehensive specialized hospital (30.6%)<sup>[13]</sup>, and specialized governmental hospitals in Jimma, Ethiopia (46.2%)<sup>[11]</sup> (Table 4). The difference may be due to pharmacists' commitment to serve the clients in accordance with the directives of good pharmacy service. Indeed, patients' adherence to apply the choice they made on what drug therapy principles to follow may make them perceive the importance of pharmacy service at FHCSH. But, the level of satisfaction was much less than the status of patient satisfaction at University of Benin Teaching Hospital in Nigeria, Ministry of Health Hospitals at East Province (80%), Hawassa University Referral Hospital (86.7%)<sup>[17]</sup>. This implies that there is always a change to make, and the healthcare service at FHCSH still needs improvement in terms of availability of pharmaceuticals, pharmacists' commitment, and skills.

This study also tried to investigate patient satisfaction barriers to pharmacy services. According to this study, the vast majority of the study participants had a high satisfaction with instruction understandability (43%), language (85.85%), and pharmacy availability (88.78). The participants' ability to understand the instruction (67.6%) was lower, but the ease of language understanding was a bit higher compared to a result from Tikur Anbessa Specialized Hospital (83.2%). Besides, pharmacist availability in the workplace (88%) was comparable between Tikur Anbessa Hospital (88%) and FHCSH (88.78%)<sup>[14]</sup>.

As tabulated in Tables 3, 92.44% of the respondents were satisfied with the pharmacists' role of correcting misconceptions or myths with respect. Evidence supported that subjective beliefs may influence patients' adherence to therapeutic regimes; therefore, patient's consideration should be taken into account while giving advice and/or providing treatment. Other reports also revealed the link between personal, cultural, and religious beliefs and adherence and treatment outcome<sup>[18,19]</sup>. As illustrated by Hassel *et al.*<sup>[20]</sup>, pharmacists' workload could affect patient safety through shortening the time for counselling. In our study, 14.39% of the participants were dissatisfied to the time allocated for counselling due to hurriedness (Table 3). Addressing the training needs and increasing the number of pharmacists may help improving pharmacy service satisfaction. The other cause of dissatisfaction was the space available in the waiting area; the more likely the space is not sufficient to accommodate clients, the higher unsatisfied they are<sup>[21]</sup>. The result of our study showed 14.15% of the clients were complaining against space adequacy in dispensary units (Table 3).

On the contrary, a high level of dissatisfaction was observed by pharmacists' preparation to listen and answer questions

(51.46%), understandability of instructions (50.24%). The results were lower compared to the finding of other study<sup>[12]</sup>.

Compared to finds from the study done in Debre Tabor, relatively minimal score of pharmacy service was recorded on service waiting time (22.19% vs. 47.4%), and treatment with dignity and respect (12.2% vs. 16.5%)<sup>[13]</sup>. Other studies also indicated a comparable level of dissatisfaction with waiting time to get pharmacy service. In this study, the level of dissatisfaction associated with approach and interests, services based on equality, and provision of services with respect and dignity were lower than the reports of our study<sup>[14]</sup>.

As indicated in Table 5, participants with physical restriction were six times more likely to be dissatisfied. In line with this, people from the rural residence were also 2.4 more likely to be dissatisfied with pharmacy service. The pharmacist explanation on how drugs are working [AOR = 2.082; 95% CI (1.48, 8.85)] and advice on medical condition [AOR = 1, 95% CI (3.2, 32.70)] were significantly associated with patient dissatisfaction. This is not in agreement with the expected role of pharmacists as part of an interprofessional care team. Pharmacists are part of a collaborative healthcare team in providing clinical services on the current medical condition of patients and associated drug information to patients<sup>[22,23]</sup>.

Medication availability was negatively associated with pharmacy service satisfaction [AOR = 5.13; 95% CI (3.02–12.38)]. Medication shortage was a cause for patients to be five times more likely to be dissatisfied with pharmacy. Similarly, other studies conducted in Ethiopia showed a positive association between medication availability and overall patient satisfaction<sup>[13,16,24,25]</sup>. However, the result was not consistent with the findings of studies conducted in South Korea, Nigeria and Ethiopia<sup>[14,26,27]</sup>. Variation in this finding could be attributable to the presence of an equipped pharmacy service (supply and medicine) as well as patient demography variations. As a result, the current finding implies that drug availability is a key service with which patients are more satisfied.

The information provided on drug-drug interaction (DDIs) and drug-food interaction was significantly associated with customer dissatisfaction towards pharmacy services [AOR = 2.175; 95% CI (2.6, 5.31)]. The prevalence of potential DDIs is relatively common in healthcare settings of developing countries<sup>[28]</sup>. Most DDIs are unnoticed by prescribers and they often produce a worsening of already existing symptoms<sup>[29]</sup>. Provision of insufficient information about DDIs may lead to potentially harmful effects described in terms of considerable morbidity and mortality<sup>[30]</sup>.

Furthermore, clients were dissatisfied with advice on information about medication side effects [AOR = 1.82, 95% CI (1.21, 3.186)]. Evidence indicated that medication side effects can substantially affect patients' health-related quality of life<sup>[31]</sup>. Unless patients are informed of the potential adverse reactions associated with drugs and report as they occur, patients may face an important cause of morbidity and mortality worldwide. Thus, adverse reactions results have an impact on healthcare costs<sup>[32]</sup>.

The medication information regarding managing missed doses was negatively associated with patient satisfaction [AOR = 16.8, 95% CI (2.58, 11.08)]. Likewise, other drug related information counselling on missed doses should not be overlooked. According to evidence from studies, lack of intervention on missed doses may lead to delay the recovery from disease, increase the length of hospital stay, and cause significant patient harm<sup>[33,34]</sup>. Another

**Table 5**  
**Association test of study participants' satisfaction with pharmacist services at FHCSH, 2021 (n = 410)**

Variable	Disat, n (%)	Sat, n (%)	COR (CI)	P	AOR (CI)	P
Residence						
Urban	87 (61.27)	180 (67.16)				
Rural	55 (38.73)	88 (32.84)	1.32 (0.22, 4.51)	0.055	2.43 (1.71, 9.6)	0.013
Physical restriction						
Yes	34 (23.94)	55 (20.52)	1.26 (0.57, 0.76)	0.04	6 (2.98, 25.91)	0.041
No	108 (76.06)	213 (79.48)				
The time taken to serve reasonable counselling						
Not	74 (52.11)	100 (37.31)	5.1 (0.22, 1.17)	0.115	1.452 (0.76, 3.17)	0.062
Somewhat/neutral	10 (7.04)	18 (6.72)	2.6 (0.23, 2.44)	0.647	1.3 (0.22, 3.94)	0.928
Yes	58 (40.85)	150 (55.97)	—	—	—	—
The pharmacist mention enough information about medication side effects						
Not	69 (48.59)	148 (55.22)	4.6 (0.19, 1.11)	0.086	1.82 (1.21, 3.186)	0.03
Somewhat/neutral	25 (17.61)	43 (16.04)	5.5 (0.16, 1.82)	0.329	0.70 (0.15, 3.27)	0.651
Yes	48 (33.80)	77 (28.73)				
The pharmacist mention enough information about drug-drug interaction and drug-food interaction						
Not	87 (61.27)	106 (39.55)	1.287 (10, 37.5)	0.012	2.175 (2.6, 5.31)	0.001
Somewhat/neutral	9 (6.24)	29 (10.82)	0.298 (0.09, .89)	0.031	0.567 (0.13, 2.42)	0.0834
Yes	46 (32.39)	133 (49.63)				
The pharmacist gives information on how to solve medication side effects if occur at any time						
Not	69 (48.59)	131 (48.88)	1.48 (0.186, 1.256)	0.136	1.68 (1.12, 2.311)	0.004
Somewhat/neutral	9 (6.34)	40 (14.93)	1.30 (0.324, 5.21)	0.711	.41 (0.107, 1.566)	0.192
Yes	64 (45.07)	97 (36.19)				
The pharmacist counselled you on the importance of keeping to your dosage regimen						
Yes	59 (41.55)	185 (69.03)	0.473 (3.241, 7.93)	0.030	7.3 (5.49, 11.06)	0.027
Somewhat/neutral	8 (5.63)	8 (2.99)	0.514 (0.139, 1.904)	0.319	0.30 (0.57, 18.90)	0.17
Not	75 (52.82)	75 (27.99)				
Prescribed medication availability						
Not	88 (61.97)	118 (44.03)	3.12 (0.17, 1.11)	0.08	5.13 (3.02–12.38)	0.02
Somewhat/neutral	34 (23.94)	59 (22.01)	0.20 (4.59, 15.70)	0.012	0.62 (6.16–19.7)	0.04
Yes	20 (14.09)	91 (33.96)				
The pharmacist explain how each of medication is supposed to help						
Not	70 (49.30)	100 (37.31)	0.63 (0.34, 1.18)	0.153	9.08 (1.48, 8.85)	0.0002
Somewhat/neutral	30 (21.13)	54 (20.15)	0.784 (0.33, 1.81)	0.523	0.692 (0.09, 4.937)	0.41
Yes	42 (29.58)	114 (42.54)				
The pharmacist ask any concerns about medication						
Not	79 (55.63)	197 (73.51)	0.525 (0.256, 1.078)	0.079	1.23 (12, 23.7)	0.043
Somewhat/neutral	20 (14.08)	17 (6.34)	0.319 (0.131, 0.776)	0.012	2.59 (0.33, 19.86)	0.358
Yes	43 (30.28)	54 (20.15)				
The pharmacist advise on current medical condition						
Not	70 (49.30)	114 (42.54)	1.055 (0.597, 1.86)	0.0854	4.022 (3.2, 32.70)	0.01
Somewhat/neutral	30 (21.13)	74 (27.61)	0.894 (0.361, 2.213)	0.809	0.76 (0.025, 22.98)	0.05
Yes	42 (29.58)	80 (29.85)				
Missed dose						
Not	100 (70.42)	120 (44.78)	0.329 (0.138, 0.782)	0.012	16.8 (2.58, 11.08)	0.001
Somewhat/neutral	10 (7.04)	31 (11.57)	0.273 (0.085, 0.874)	0.029	10.77 (1.69, 8.37)	0.012
Yes	32 (22.54)	117 (43.66)				

AOR, adjusted odds ratio; COR, crude odds ratio; Disat, dissatisfied; Sat, satisfied.

study also indicated that missed doses may predispose antibiotic resistance and quality of care<sup>[3,5]</sup>.

### Conclusions and recommendations

The findings of the current study showed that patients' satisfaction towards outpatient pharmacy services provided by FHCSH is very low. As far as the ultimate goal of the hospital service is ensuring better client satisfaction, strong commitment has to be taken to strengthen clinical pharmacy services. The number of staffs should be increased; the setting is modified and continuous staff training and promotion should be practiced. (Table 2).

### Ethical approval

Ethical clearance was obtained from the Institutional Review Board (IRB) of Bahir Dar University, College of medicine and health science. Following the approval by IRB, official letter of cooperation was written to the concerned bodies. The ethical clearance reference number was phr02/12/01/2014 E.C.

### Consent

Written informed consent was obtained from the patient for publication and any accompanying images. A copy of the written

consent is available for review by the Editor-in-Chief of this journal on request.

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This study was self-sponsored by the authors.

### Author contribution

All authors made significant contribution and approval of the final manuscript was carried out by all authors.

### Conflicts of interest disclosure

The author(s) declare(s) that they have no conflict of interest.

### Guarantor

Adane Yehualaw.

### Data availability

The datasets generated and/or analyzed during the current study are available from the corresponding author.

### Provenance and peer review

The available data will be provided by the corresponding author when requested.

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