

## Level and Determinants of Patient Satisfaction with Pharmacy Services in Ethiopian Hospitals: A Systematic Review

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### Abstract

**Introduction:** Patient satisfaction is a globally accepted healthcare quality indicator. It has a great impact on medication adherence and treatment outcomes. Therefore, the aim of this review is to assess the level and determinants of patient satisfaction with pharmacy services in Ethiopian hospitals.

**Methods:** To ensure inclusion of relevant studies, this review followed and used the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guideline and checklist. Comprehensive searches of electronic online databases such as Google Scholar, PubMed, Science Direct and Research Gate were accessed from inception of this review to December 20, 2021. The search by used the keywords: "patient satisfaction", "hospital pharmacy services" and "Ethiopia" either alone or in different order of combinations limiting the language to English.

**Results:** Electronic online databases were searched and 2,480 records were identified. Ninety-nine duplicates were removed. Title and abstract screening resulted in the exclusion of 2,364 irrelevant articles. Two articles were excluded with justification. Finally, 15 articles were included in the review. The level of patient satisfaction in hospitals was varied based on hospitals APTS implementation. It ranged from 40.5% to 92.3%. There were variations in the determinants of patient satisfaction but socio-demographic factors, pharmacy setting and pharmacy service were the general determinants of patient satisfaction.

**Conclusion:** Patient satisfaction with pharmacy services in Ethiopian hospitals was generally found to be low. Patients served at APTS implemented hospitals were highly satisfied but further studies should be conducted to confirm consistence. Quality healthcare setting and service had positive impact on level of patient satisfaction. Satisfied patients adhere to medications which in turn improve treatment outcomes.

**Keywords:** Patient satisfaction; Hospital pharmacy service; Ethiopia

**Abbreviations:** APTS: Auditable Pharmaceutical Transaction and Services; ART: Antiretroviral Therapy; CS: Cross-sectional Study; IPD: Inpatient Department; OPD: Outpatient Department; PRISMA: Preferred Reporting Items for Systematic Review and Meta-analysis.

### Introduction

The improvement of the quality of hospital pharmacy services indicates the betterment of pharmaceutical care services in hospitals. Healthcare quality is influenced by perception and satisfaction of patients. Pharmaceutical care has been adopted in complement for the national strategy of the Federal Ministry of Health for achieving development goals [1]. Ethiopian Federal Ministry of Health works towards providing quality health services. Auditable Pharmaceutical Transaction and Services (APTS) rollouts in more than 200 health facilities, introduction of clinical pharmacy and drug information services and an increased attention to anti-microbial resistance are among the initiatives [2].

Patient satisfaction is a globally accepted healthcare quality indicator that should be routinely studied for consistent quality assurance and proper functioning of the health system. Satisfaction of patients has great impact on medication adherence and treatment outcome [3]. Pharmacy being the last department to be visited, it has a direct link with patient satisfaction. Availability of medicines, waiting time and privacy in counseling affect patient satisfaction [4-7].

The pharmacy setting, location and cleanliness affects patients' satisfaction. Lack of adequate drug information and noise in dispensing area dissatisfies patients. In many developing nations, main healthcare

provider is government and the service suffers quality issue [8-12]. Patient satisfaction is difficult to measure and affects patient expectation. Communication of pharmacy professionals with patients

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increase satisfaction and affect adherence. Patient satisfaction is crucial for health facility survival. Patient satisfaction improves compliance, creates long lasting relationship and continuity of care especially in cases of chronic disease. Healthy pharmacist-patient interaction encourages compliance and adherence.

Adequate medication counseling, appropriate location of the pharmacy setting, adequate waiting area, prompt services, availability of prescribed medications, adequate number of pharmacists, politeness and attitudes of pharmacy professionals positively influence patient satisfaction. Patients' perception of inadequate knowledge of pharmacists and lack of quality of the system resulted in dissatisfaction. Socio-economic status, perceived status and insurance also affect satisfaction [13-16].

Systematic review on the level of patient satisfaction with hospital pharmacy services was not conducted so far in Ethiopia. Therefore, this review attempted to assess the level and level of patient satisfaction determinants of patient satisfaction with pharmacy services in Ethiopian hospitals.

## Literature Review

### Study protocol and registration

Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) group guideline and checklist was followed to ensure inclusion of relevant studies. The checklist was applied during record identification, titles and abstracts screening, and eligibility evaluation of full texts. This review was registered on PROSPERO and granted identification number of 285219 with a title "level of patient satisfaction with pharmacy services in Ethiopian hospitals: a systematic review" [17].

### Eligibility criteria

**Inclusion criteria:** Published articles in peer reviewed journals reporting level of patient satisfaction with pharmacy services in Ethiopian hospitals [18].

- Primary objective being assessed.
- Published from inception to December 20, 2021.
- Published in English language.
- Original researches.

### Exclusion criteria

- Researchers conducted outside Ethiopia.
- Studies with full-text missing.

**Search strategy and data sources:** Google Scholar, PubMed, HINARI, Science Direct and Research Gate databases were accessed from inception of this review to December 20, 2021. Comprehensive searches was done using keywords: "patient satisfaction", "hospital pharmacy services", "systematic review" and "Ethiopia" either alone or in different order of combinations. Boolean connectors (and, or, not) were applied to obtain relevant articles. Studies reporting level of patient satisfaction with pharmacy services were identified limiting the language to english [19-21].

**Data extraction and quality assessment:** Microsoft Excel spreadsheet was prepared and used for data extraction. EndNote (version X9) software for Windows was used for citation and reference management. Author/s and year of publication, study region, study population, study design, data collection tools and sample size,

prevalence of patient satisfaction level and health institutions were extracted [22-26].

Quality of included studies was evaluated by most commonly used quality assessment tool, Newcastle-Ottawa quality assessment scale for systematic reviews adapted for cross-sectional studies with 10 points (stars). The quality assessment tool is classified in to three categories for ease of measurement:

- Selection (methodological) of study with weight of maximum five stars.
- Comparability of the study subjects which takes a maximum score of two stars.
- Outcome measures with statistical analysis with a maximum score of three stars.

This critical appraisal was conducted to assess the internal (systematic error) and external validity of the studies and to reduce the risk of bias.

Sample representativeness, data measurement tool, response rate, comparability of study, statistical test used and its appropriateness for data analysis were the critical criteria evaluated. Three reviewers (TW, KM and WA) independently assessed qualities of the articles. Discrepancies were resolved with discussion.

## Results

**Search results and study characteristics:** Electronic online databases were searched and 2,480 records were identified. Ninety-nine duplicates were removed. Title and abstract screening resulted in the exclusion of 2,364 irrelevant articles. Two articles were excluded with justification. Finally, 15 articles were included in the review (Figure 1).

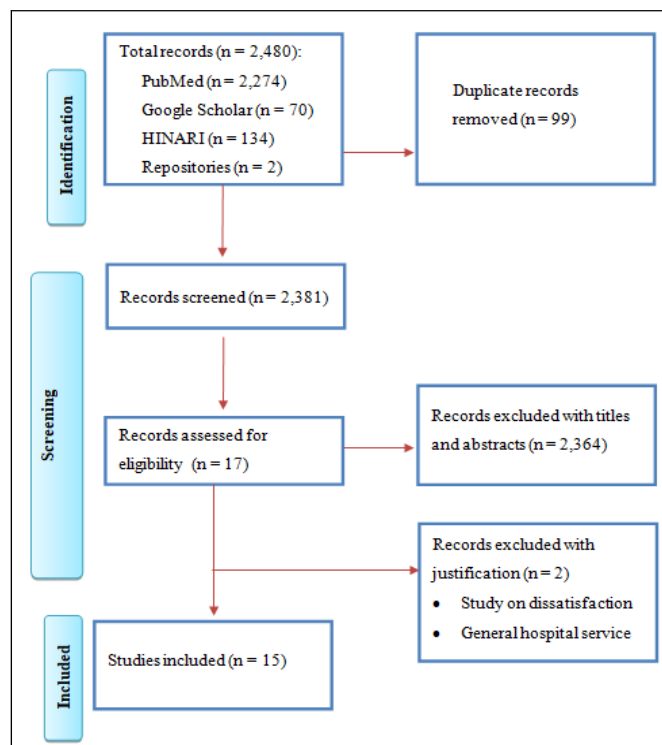


Figure 1: Flow diagram depicting article screening process by PRISMA group guidelines.

Fifteen studies met the eligibility criteria and were included. Details of the studies included in the review are presented in Table 1. All the studies included were original researches and used cross sectional

study design. The study subjects were patients visiting hospital pharmacy units. Total participants from all the 15 studies were 6,001, sample size ranging from 189 to 810 (Table 1). The median value was 405 (interquartile range =135).

Author/s, year	Region	Health facility	Pharmacy unit	Study design	Data collection instrument (tool) used	Sample size (n)	Level of satisfaction
(Abebe et al., 2016)	Amhara	Gondar University Referral Hospital	ART	CS	Adopted validated tool (Larson et al., 2002 and Hovart et al., 2010: PSpP-Q).	292	54.70%
(Adinew et al., 2021)	National	26 APTS implemented hospitals (national)	OPD	CS	Adapted structured questionnaire and standard observation checklist.	650	90.00%
(Asamrew et al., 2020)	Addis Ababa	Tikur Anbessa Specialized Hospital	IPD	CS	Developed structured questionnaire.	398	46.20%
(Ayalew et al., 2017)	Amhara	Gondar University Hospital	OPD	CS	Developed data collection questionnaire.	287	51.90%
(Ayele et al., 2020)	Eastern Ethiopia	13 Eastern Ethiopian Hospitals	OPD	CS	Adapted validated tool (Larson et al., 2002 and Traverso et al., 2007).	422	46.20%
(Beyene et al., 2020)	SNNPR	15 public hospitals in SNNP region	OPD	CS	Adapted structured data collection tool	465	92.30%
(Fekadu et al., 2020)	Oromia	Wollega University Referral Hospital	OPD	CS	Developed data collection tool	200	63.60%
(Gidey et al., 2021)	Afar	Dubti General Hospital	OPD	CS	Adapted structured questionnaire	422	40.50%
(Karunamoorthi et al., 2009)	Addis Ababa	Alert, Black Lion, St. Paulos, St. Peter Hospitals	ART	CS	Adapted validated structured questionnaire (CSQ-8, VSSA).	405	54.80%
(Kassa et al., 2021)	Tigray	7 hospitals in Tigray region	OPD	CS	Adapted validated data collection questionnaire (SERVQUL).	810	3.10*
(Kebede et al., 2021)	Amhara	Dessie Referral and Boru-Meda Hospitals	OPD	CS	Adapted validated data collection instrument (Larson et al., 2002).	422	59.40%
(Semegn and Alemkere, 2019)	Addis Ababa	Tikur Anbessa Specialized Hospital	OPD	CS	Adapted structured interview questionnaire.	250	51.60%
(Surur et al., 2015)	Amhara	Gondar University Referral Hospital	OPD	CS	Adopted validated data collection instrument (Eshetu and Gedif 2011).	405	2.48*

(Teshome Kefale et al., 2016)	SNNPR	Mizan-Tepi University Teaching Hospital	OPD	CS	Adapted semi-structured questionnaire.	384	52.60%
(Woldeyohanes et al., 2015)	Oromia	Jimma University Specialized Hospital	IPD	CS	Developed standardized structured questionnaire.	189	61.90%

**Table 1:** General characteristics of the included studies.

Four studies were conducted in Amhara region, three in Addis Ababa and two in Oromia region, two in SNNP region and others nationally, in Afar region, in Tigray region and in Eastern Ethiopian hospitals [27-29].

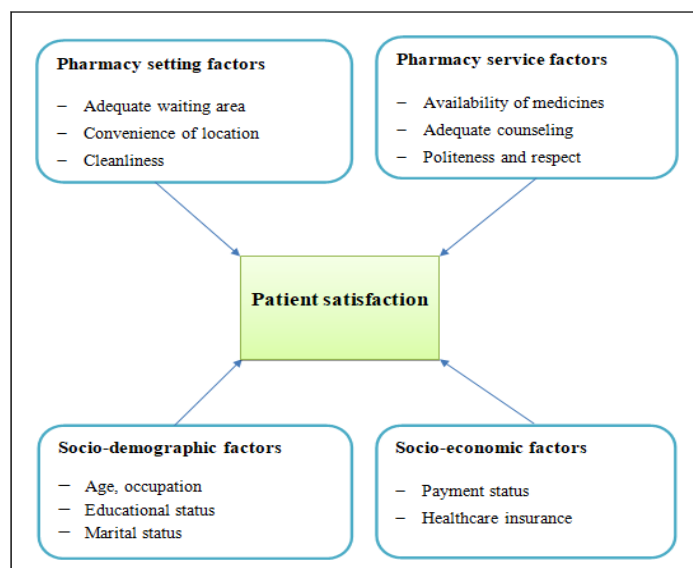
All the studies were published from 2009 to 2021 and used facility based cross-sectional study design. Eleven studies were conducted at OPD pharmacy units, two at ART and the other two at in-patient pharmacy. Twelve studies collected data from general patients, while one from type II diabetes mellitus patients and the other two from patients living with HIV/AIDS. A total of 85 hospitals were addressed in all the 15 studies. Systematic random sampling technique was used for selecting study participants in 10 studies, simple random sampling in 4 studies and convenient sampling techniques in 1 study. Four of the studies used developed data collection tool, six used adapted structured data collection tool, three used adapted validated data collection tool and two used adopted validated data collection tool [30].

**Level of patient satisfaction with pharmacy services in Ethiopian hospitals:** Prevalence of level of patient satisfaction of 13 studies was presented by percentage and the other two by Likert scale 3.10 (1 most dissatisfied, 5 most satisfied) and 2.48. The level of patient satisfaction in hospitals without APTS was between 40.5% and 63.6% and in APTS implemented hospitals; the satisfaction was 90% and 92.3%.

**Determinant factors of patient satisfaction with hospital pharmacy services**

**Socio-demographic factors:** Patient satisfaction was affected by socio-demographic factors in 10 studies. Age, marital status, level of education, occupation and economic status were contributing factors. Five studies either did not addressed socio-demographic association with patient satisfaction or had no association [31,32].

**Health facility setting and health service provision:** All the fifteen studies showed that there was association between pharmacy setting and patient satisfaction. Waiting area, location and cleanliness were among the expectations. There was significant association between pharmacy service and satisfaction of patients. Waiting time, politeness, availability medicines, adequate drug information and privacy were among the pharmacy services subjected to assessment (Figure 2).



**Figure 2:** Factors affecting level of patient satisfaction with pharmacy services.

**Data quality assessment:** All the 15 studies were evaluated. The quality of included studies was ranged 7 to 9 (Table 2).

Studies included in this systematic review	Selection (methods)	Comparability of the subjects	Outcome measures	Total score
(Abebe et al., 2016)	5	2	2	9
(Adinew et al., 2021)	4	2	2	8
(Asamrew et al., 2020)	4	2	2	8
(Ayalew et al., 2017)	4	2	2	8
(Ayele et al., 2020)	5	2	2	9
(Beyene et al., 2020)	4	2	2	8
(Fekadu et al., 2020)	4	2	1	7

(Gidey et al., 2021)	4	2	2	8
(Karunamoorthi et al., 2009)	5	2	2	9
(Kassa et al., 2021)	5	2	2	9
(Kebede et al., 2021)	5	2	2	9
(Semegn and Alemkere, 2019)	4	2	2	8
(Surur et al., 2015)	5	2	2	9
(Teshome Kefale et al., 2016)	4	2	2	8
(Woldeyohanes et al., 2015)	4	2	2	8

**Table 2:** Quality assessment results of included studies.

## Discussion

Quality pharmacy service increases satisfaction which improves health outcome of patients by encouraging medication and treatment adherence. Pharmacy setting is the last stop in a healthcare setting where patients collect prescribed medicines and it is a key determinant of healthcare service quality. Patient satisfaction with hospital pharmacy services is an indicator of quality healthcare and determines the health outcomes of patients. There are different factors which affect the level of patient satisfaction with hospital pharmacy services in Ethiopia. Demographic and socio-economic and healthcare setting related factors can be mentioned. There was a positive association these factors and patient satisfaction.

Age, education level, occupation, paying capacity and marital status were found to be associated with patient satisfaction. Educated patients were less satisfied than illiterate. Married patients were more satisfied than unmarried or divorced. Older population with age (>60 years) were more satisfied than younger adults (18-30 years). Out-of-pocket payment is negatively associated with patient satisfaction and insured patients and those whose healthcare costs are covered with employing companies showed positive association.

Satisfaction of patients visiting hospital pharmacies was low (40.5%) where the health facilities lack adequate infrastructure, personnel and poor availability of essential medicines and healthcare setting with improved infrastructure, personnel and availability of medicines achieved satisfaction level of up to 90% and 92.3%. Healthcare setting and service were significantly associated with patient satisfaction. Uncomfortable and inconvenient waiting area and counselling room dissatisfied patients. Lack of information on drugs was another source of dissatisfaction.

Location of the pharmacy in a facility setting affects patient satisfaction. Convenient location is positively associated with patient satisfaction. There is a statistically significant correlation between the length of waiting time and patient satisfaction. Longer waiting time discourages patients and hence decreases satisfaction. Inadequate waiting space was also a source of dissatisfaction for patients.

Availability of medicines has strong association with level of patient satisfaction. Patients accessing prescribed medicines were satisfied. Lack of adequate description of the prescribed medications such as side effects, drug-drug interactions and drug-food interactions, staff impoliteness and shortage of drugs resulted in dissatisfaction.

There are some limitations for this systematic review. There was difference in association of socio-demographic variables and the level of patient satisfaction with pharmacy services. This is one limitation of the review. Majority of the studies reported the association but others didn't. Since all the studies were cross-sectional, it was difficult to be certain of the direction of true temporal relationship. This is another limitation of this review.

## Conclusion

Patient satisfaction with pharmacy services in Ethiopian hospitals was generally found to be low. Patients served at APTS implemented hospitals were highly satisfied but further studies should be done to confirm its consistence. Majority of the studies revealed that the level of patient satisfaction was less than 65%.

The satisfaction level ranged from 40.5% to 63.6% in non-APTS hospitals and 90% to 92.3% in APTS implemented hospitals. Socio-demographic factors and facility settings and services were determinants of the level of patient satisfaction. Quality healthcare setting and service had positive impact on the level of patient satisfaction. Satisfied patients adhere to medications which in turn improve treatment outcome. Therefore, qualities of healthcare setting and services should be improved to increase patient satisfaction.

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